Regional Specialization and Geographic Concentration of Economic Sectors in the Visegrád Countries

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SUMMARY

As a result of transformational recession, the mono-structural economy has changed in the Visegrád countries. The transformation process is not yet finished. The new economic structure has been shaped by the concentration of sectors by delocalization, central industry and spatial planning. In this paper the aim was to find an answer to the following question: What kind of sector concentrations and specialized processes took place in the Visegrád countries, which included Hungary, Poland, Czech Republic and Slovakia in connection with reindustrialization and deindustrialization during the years 2000-2007? Due to the macrostructure's spatial concentration, the regions' specifications, and the (de)polarization processes of the last few years determined the ability to adapt to the economic crisis. The regional specialization and concentration processes of the Visegrád countries will be compared using various kinds of indicators (absolute and relative concentration), and special attention is paid to regional analysis within Hungary. The research questions are: after the political change of regime, where and what type of sector or industry concentration has been established in the examined countries? Is it possible to say that some specialization or concentration is disadvantagous to economic growth? The difference between regional specialization and concentration and the terms related to industrialization are also clarified.

Keywords: specialization, concentration, industrialization, Krugman Dissimilation index, Herfindahl-Hirschman index
Journal of Economic Literature (JEL) code: R11, R58

THEORETICAL INTRODUCTION

This is the first time in history that conclusions can be drawn about the development of economic systems based on central planning transforming into a market economy. The problems of the transition on a national economic basis were present on both the social and economic levels, but it was the industry that had to face the most urgent challenges (Botos, 2011). Today, the economic answers given at the time of transformational recession are still influencing the economy of the Visegrád countries, their macro structural processes and the performance of the secondary sector.

In post-socialist countries the structural change of the industrial sector was intensified by its peculiar economic policy and delayed development (Enyedi, 1989). Lux (2009) extends these catalytic factors to coordination errors, the underdevelopment of the financial sector, and the challenges of the transition into a consumer market. Due to the outdated industrial structures, the manufacturing products not only lost their (certain) foreign markets, but also the domestic markets due to changes in consumer wanted. The macroeconomic structural changes affected the work force and the changes in production. Because of the transformational recession, in these countries the number and ratio of people working in agriculture and classical industrial branches decreased. New workplaces were mostly created in the tertiary sector, mainly sponsored by foreign capital. But in spite of the tertiarization of the economies, industry has kept its influential role, both in the labour force and in the production of added values (Enyedi, 2005). The performance of the manufacturing industry determined mainly the export potential and volume, and directly influenced the growth of the whole economy (including other sectors) and its income level (Horváth, 1999).

My research topic is to identify the direction of these processes in the different countries taking place after the political changes, during 2000-2007, focusing on locations and types of industrial concentration. In the time period chosen, the preparation of these countries was completedand the economic crisis to come did not yet have any effect on the opportunities open to the workforce. Change is a natural part of the economic structure and it shows differences in its extent and direction in each country. The composition of the

economic structure influences performance on a short and medium term level, and is related to an increase in the competitive potential, which includes production data (Szalavetz, 2007). To explain the other factors helping the economic development two theories are referred to: the accumulative and structural theories.

According to the accumulative theory, the source of economic growth and structural modernization is the accumulation of physical and human capital; it influences production, and the development of factor inputs. On the other hand, the structuralist point of view focuses on the changes in the composition of production, in the various sectors; this is the source of economic growth and the dynamic changes in development (Szalavetz, 2007; Nelson, 1998). The major vertical and horizontal company integrations and the concentration of monolithic structures developing in one territory are not beneficial for the development of the area. The concentration of production hinders economic growth and increases the dependence of the economy on cyclic fluctuations. It hinders the revitalization of the economy after economic crises and increases the possibility of the emergence of brown field areas.

In this view, I think it is important to examine both macro-level changes and changes in branch structures, and all the more so since the countries included in the study went through an industrialization process because of their socialist industrial policies. The development of regional mono-structures was common. Among the economic theories focusing on structural change I would like to emphasize Schumpeter's work (1950). He focused on innovations, the formation of new combinations, and used the term "productive destruction", which refers to the beneficial tendencies in economic development: "something dies and something new is created." At the same time economic evolution theory warns us about the difficulties caused by "road addiction", which can hinder industrial structural change like a "power of inertia" (Lux, 2009). According to Veblen (1898), "technology" consists of two main elements: the system of physical capital equipment, tools, and the "know-how" of manufacturing. The life cycle theory of the industrial sector focuses on the capital need of the specific industry sector, which in the decreasing cycle is combined with a higher need for human capital.

CONCEPTUALIZATION

The development of industrial production and labour force is called industrialization. According to the dictionary it means that a higher level of machine use in the industry has been introduced into a country's national economy. The Dictionary of Human Geography (2009) applies the following term to industrialization: "The process, through which industrial activity becomes dominant in a given territory or country's economy" (p. 380).

The process is more complex; it is closely connected to the theories of economic development. Adam Smith thought of industrialization as the natural process of economic development. Developing countries have two strategies to choose from in their industrialization policies: they can encourage the national secondary sector, especially the manufacturing industry, to substitute for imports. In order to do this, the industrial sector can be protected by tariffs or non-tariff instruments. Structural development according to the model of Fisher (1939) and Clark (1940) is economic development accompanied by tertiarization, the increase of value added services in growth rate. It is easy to see that the expansion of the service sector is the result of economic development (Szalavetz, 2008). Today there is still a professional argument about the importance of tertiary and secondary sectors. Though for Fisher and Clark economic development is clearly connected to tertiarization, if we examine the macrostructure of developed countries the conclusion is that the phenomenon is connected to an increase in the total added value of the manufacturing industry (Szalavetz, 2008). It is worth mentioning Baumol's cost disease, which means that in the service sector, because of its peculiarities, it is less possible to achieve significant productivity growth than in the production sectors (Baumol, 1967). Later in the United States Bosworth and Triplett (2003) contradicted this statement, as in most service sectors of the United States the increase rate of the productivity growth of services reached the same amount as productivity growth in the manufacturing sector. According to Cséfalvay et al. (1994), the employment ratio of the tertiary sector became dominant in the beginning of the 1900s (see the Figure 1) compared to the primary sector, and in the 1950s the secondary sector became less significant as well. Clark puts the appearance of the process of deindustrialization at the intersection of the other sectors (Figure 1).

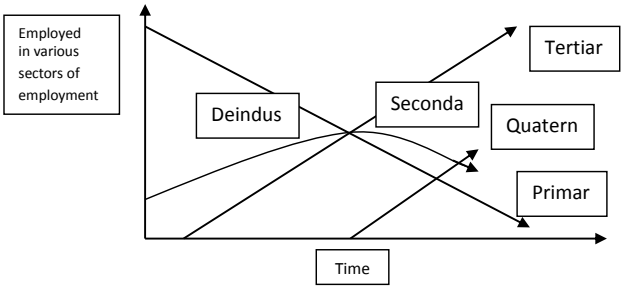

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Figure 1. Model by Fischer–Clark (1940)

The Dictionary of Human Geography (2009) gives the following definition of deindustrialization:

A sustained decline in industrial (especially manufacturing) activity and capacity. Such changes are quite normal in the course of economic development.

However, when they are linked to the declining competitiveness of industrial production to meet extra-regional, domestic and international demand within reasonable levels of employment and a sustainable balance of payments, deindustrialization represents a process of underdevelopment. (p. 150)

According to Takács (2003) deindustrialization as a term refers to industrial decline, atrophy or degeneration. Structural changes are often considered equivalent to deindustrialization, which is a narrower term and mostly refers to a reduction in the number of industrial employees (Kiss, 2010; Cheshire, 1991) and often means a reduction in industrial output. Reindustrialization or new industrialization both mean that new sectors are being formed, along with new activities and products, in places where these were nonexistent before. This also means structural change, when traditional industrial activities cease to exist or lose their significance and new industrial activities take their place. It is a complex process which contains the following elements: the appearance of new industry sectors (production of IT equipment), industrial structural change (the greater added-value sectors make the other sectors disappear: automobile industry, electronics, light industry, iron manufacturing), the need for increased production (in traditional branches as well – with new technology and new products). However, this process can be hindered in places where the industrial crisis has paid its toll and there has been downsizing of companies. If this structural change is delayed, the educated and younger generation tends to migrate, unemployment rises and rust and brown field areas appear.

After examining the process of sector transformation, we need to define industrial policies as well. Industrial policies are in interrelationship with employment policies, social policies, and spatial development. Botos (2011) agrees that all successful market economies have industry; that where there is industry there is always some kind of industrial policy, and where there is industrial policy, there is also government intervention. The argument among experts is about the types and depth of intervention.

It is important to have a definition of industrial policy, for there are great differences between regions, and the task of industrial policies is to decrease these differences. Many experts have attempted to define the term; I would like to mention two of the most relevant ones here:

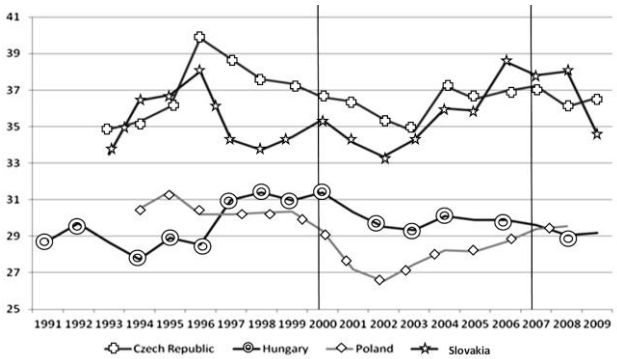
- "Industrial policies refer to all those government initiations and coordination, whose final goal is to increase productivity and to increase competition ability in the economy and especially in the industry" (Johnson, 1984. p. 15);
- "Industrial policy is the government's intention to move the various resources towards those sectors, which according to the government's decision are important in relation to the future of economic development" (Krugman- Obstfeld, 1991. p.18).

METHODOLOGY

Simultaneously, other theories also attempt to explain the expansion of industry, such as developmental theories and the literature on industrial crises. According to classical economics, regional development depends on specialization, productivity and commerce based on division of labour. It is associated with increased competitiveness, if we think about Ricardo's comparative advantages theory (1817) or the factor endowment theory of Heckcher (1919) and Ohlin (1933). Krugman (1991) came to a similar conclusion based on comparative benefits, or the specialization of regions and countries – according to him all of them could be winners. Keynes (1933) assumes, however, that the degree of specialization is inversely proportional to the factor endowment of emerging convergence trends.

Another category of models deals with the determinants of location and specialisation (Goschin et al., 2009). In the European Union the study of industry sectors' spatial concentration and the regions' branch specialization has become popular in the last few years. There are a number of research projects that focus on the trends and processes in EU countries. In these works, different measurements were used, such as new and old statistical methods, especially concentration and specialization indexes. The results of quantitative studies about the 1980s and 1990s (e.g. Hine, 1990; Hine et al., 1998; Amit, 1997; Brülhart, 1998) show that in a significant part of the industrial sectors a spatial concentration took place in Western Europe. It was accompanied by an industrial concentration in certain countries and regions (Traistaru, 2000).

Of special interest are the mobile factors, considered the engine of the agglomeration process. The improvement of the factor endowment in the destination region increases its attraction as a location for other manufacturing activities, leading to a cumulative process (Krugman, 1998; Fujita et al., 1999). Based on Boschma and Lambooy (1999) Lux (2009) discusses in his doctoral dissertation the problems of overspecialization, and the negative effects of mono-structures.



Source: author's own work based on EUROSTAT

Figure 2. Changes in industrial added value in 1991–2009 in the Visegrád countries

Cumulative causality is traditionally connected to growth processes, but it is also suitable for explaining the reasons behind economic crises. The radical sector and territorial changes in the industry make it necessary to study the spatial structures of industrial sectors, their concentration, and to examine whether industrial specialization has certain characteristics in each county.

Before I analyze the specific specialization and concentration calculation results, it is best to have a look at my database in order to have a broad overview of the changes in industrial added value during 1991-2009 (Figure 2). The economic transition in Central European countries occurred at the same time as integration into the global economy. The coincidence in time, however, did not mean that the countries or regions changed at the same speed (Rédei, 2001). On the one hand the different forms of privatization and the different approaches to industrial policy strongly influenced the developmental pathways in the Visegrád countries and the existence of regional differences. Not only relations between the centre and periphery, but the traditional regional differences solidified as well (Rédei, 2001). Also within countries there was an increased inequality. Shift-share analysis has demonstrated that both the regional and sectoral impacts have greatly influenced each country's expansion of work force during the time period before the economic crises (Kuttor and Hegyi-Kéri, 2012). Another direction of research is related to spatial polarization, trying to eliminate mono-structures, to create a successful economic structure. Based on the theories of Aiginger et al. (1999) and Markusen, A. and P. Hall (1986), Rédei (2001) describes the findings in the literature on topics of specialization and concentration. Other experts have done related studies on employment-related sector and structure concentrations and specializations, e.g. Krugman (1991), Brülhart (1995b), Molle (1997), Goschin et al. (2009) and Jeney and Szabó (2001). In this study I examine, based on regional data from Eurostat, the sector specializations of certain regions, and the macro-economy's sector concentration. The following sectors were included in the analysis: agriculture, industry (excluding construction), construction, financial intermediation; real estate, wholesale and retail trade; hotels and restaurants; transport, public administration and community services; activities of households; and extra-territorial organizations.

HERFINDAHL-HIRSCHMAN INDEX

The Herfindahl-Hirschman index is a commonly accepted statistical measure of market concentration and specialization. It is also referred to as the absolute concentration and specialization index. Jeney and Szabó (2001) say that the Herfindahl index is very similar to the Gini-Hirschman concentration ratio's formula (Nemes Nagy, 1977). The value of the index is between 0 and 1, depending on the measure of absolute concentration and specialization.

$$H_j^C = \sum_{i=1}^{n} \left(g_{ij}^c\right)^2,\ H_i^S = \sum_{j=1}^{m} \left(g_{ij}^s\right)^2$$

where $g_{ij}^c = \frac{X_{ij}}{\sum_{i=1}^{n} X_{ij}} = \frac{X_{ij}}{X_j}$ and

$$g_{ij}^S = \frac{X_{ij}}{\sum_{j=1}^{m} X_{ij}} = \frac{X_{ij}}{X_i}$$

- H_j^c Herfindahl-Hirschman concentration measure number
- H_i^S Herfindahl-Hirschman specialization measure number
- i region
- j sector
- X number of employees ;
- X_{ij} i region's number of employees in j sector;
- X_j all employees of j sector;
- X_i all employees of i region;
- g_{ij}^c the share of region i in the total national value of branch j;
- g_{ij}^s the share of branch j in the total value of region i.

The highest absolute concentration value (HjC) for industrial employees (excluding the construction industry) of the territory in 2000 and in 2007 was in Slovakia (Table 1). The Hirschman-Herfindahl Index of spatial concentration captures the degree to which a particular industry's spatial distribution reflects that of the national urban hierarchy (McCann, 2001). A high value of the Hirschman-Herfindahl Index indicates sectoral concentration in a limited numbers of regions. A HHI index below 0.01 indicates a highly competitive index. A HHI index below 0.1 indicates an unconcentrated index. A HHI index between 0.1 to 0.18 indicates moderate concentration. A HHI index above 0.18 indicates high concentration.

Table 1
Absolute concentration values for the Industrial sector (excluding the construction industry)

	2000	2007
Czech Republic	0.134899	0.137291
Hungary	0.153068	0.151426
Poland	0.083054	0.083252
Slovakia	0.297275	0.307848

Source: author's own calculations

There is a significant difference observed in the case of Poland, where the sectors have a regionally more balanced position, almost unconcentrated. I can conclude that among the regions, Slovakia has the highest degree of concentration, which can be due to the territory of the country and its geographical location.

If we look at the financial sector, including real estate (Table 2), we can see that in Hungary, the

concentration of the financial sector is very high and it increased over the period examined. It is followed by Slovakia.

Table 2
Absolute concentration values for the Financial intermediation; real estate

	2000	2007
Czech Republic	0.164051	0.163304
Hungary	0.311148	0.349032
Poland	0.102582	0.112077
Slovakia	0.27471	0.263571

Source: author's own calculation

I would like to add that the Hungarian financial sector used to have even greater concentration than Slovakian agriculture.

However, it is necessary to make the difference between the sectorial concentration and thespatial concentration. There are always ambiguities arising from the fact that the sectorial concentration is synonymous with the specialization (Ceapraz, 2008). For my case the comparisons are made between the specialization and the geographical concentration. Statistically, after Aiginger (2004) "the specialization and the spatial concentration can be two perspectives derived from the same matrix where columns are represented by countries (regions), and lines by the industries". The specialization can be observed by reading every column while the concentration can be interpreted by reading every line (Aiginger, 2004). According to Brulhart (1998), the concentration analyzes the location in the space of some defined well sectors (for example industrial activities) while the agglomeration analyzes the spatial location of a bigger part of the economic activity as the manufacturing in general. I can conclude from an employment perspective, after examining the regions' absolute concentration index values (Table 3) (HjS) that in 2000 and 2007 in the region of Central Hungary the numbers were high, compared to the other Visegrád countries, capitals included. The estimations of Herfindahl index of concentration give us a rather different picture of spatial concentration between 2000 and 2007. The most concentrated sector in 2000 was the agricultural in Slovika, then come the Hungarian financial intermediation sector. In all sector concentration Slovaik high measures. In Hungary also the wholesale and retail trade and the public administration were concentrated. As we can see from the Table in Poland only the financial sector concentrated. Between 2000-2007 there were a growth of absolute concentration in three countries in the industrial sectors and in the construction sector. The strongest growth of absolute concentration between 2000-2007 was recorded in Hungary, the second was measured in Slovakia summarizing all the sectors absolute concentration.

The increase in concentration in Slovakia in almost all the sectors except the financial intermediation is mainly a consequence of the changes of the industrial structure specific to each area and before and a cause of the conditions of the economic transition and imminent European integration.

Table 3
Absolute concentrations by sector in 2000 and 2007

Industry (excluding construction)	2000	2007
Czech Republic	0.134899	0.137291
Hungary	0.153068	0.151426
Poland	0.083054	0.083252
Slovakia	0.297275	0.307848
Construction	2000	2007
Czech Republic	0.127288	0.128054
Hungary	0.186752	0.181412
Poland	0.078581	0.081873
Slovakia	0.281949	0.287675
Agricultural	2000	2007
Czech Republic	0.158682	0.163579
Hungary	0.174805	0.167608
Poland	0.090155	0.085709
Slovakia	0.323909	0.32794
Financial intermediation; real estate	2000	2007
Czech Republic	0.164051	0.163304
Hungary	0.311148	0.349032
Poland	0.102582	0.112077
Slovakia	0.27471	0.263571
Public administration and community services; activities of households; extra-territorial organizations	2000	2007
Czech Republic	0.129433	0.12839
Hungary	0.18414	0.187483
Poland	0.077932	0.08353
Slovakia	0.259266	0.26484
Wholesale and retail trade; hotels and restaurants; transport	2000	2007
Czech Republic	0.128736	0.128068
Hungary	0.201821	0.198832
Poland	0.079295	0.084523
Slovakia	0.264275	0.271546

Source: author's own calculation

The Herfindahl index of regional specialization is an absolute measure of industry shares in the total activity in the region. It could take values between zero and one. Its evolution might reveal to what extent a given region is becoming specialized or diversified regardless of how the economic structure of the country as a whole is evolving (Beine - Coulombe, 2004). In Hungary, the region's specialization is the lowest in Northern Hungary and in the Southern Transdanubian region. In these regions employment is low both in industry and in the financial sector. In the Southern Transdanubian region the low employment rate is compensated somewhat by agriculture's higher specialization rate, which has a very low value in Northern Hungary.

Table 4
Absolute specialization numbers in the Hungarian regions

Region	2000	2007
Central Hungary	**0.682391**	**0.675882**
Central Transdanubia	0.082847	0.068943
Western Transdanubia	0.070108	0.05889
Southern Transdanubia	0.057154	0.036779
Northern Hungary	0.066781	0.05916
Northern Great Plain	0.101967	0.071627
Southern Great Plain	0.150487	0.065649

Source: author's own calculation

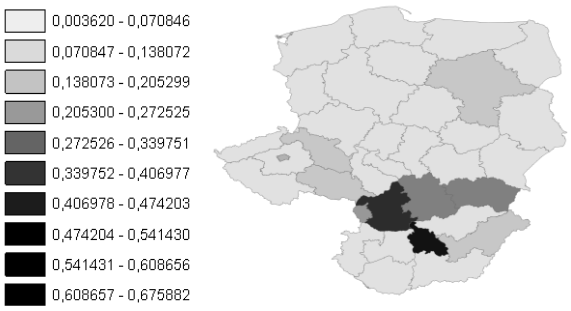
The higher employment specialization rates are increased (greatly) by the number of people working in the finance sectors, and can be traced back to the ratio of employment in the construction and manufacturing industries. In the Warsaw region (Mazowieckie) the sector specialization showed one quarter of that value. In Slovakia the absolute specialization measure number had a higher value in the Západné Slovensko region in 2000 (0.745834), which decreased in 2007 to 0.558552.

Table 5
Absolute specialization measurements in regions including national capitals

	2000	2007
Prague	0.165393	0.165088
Mazowieckie	0.150577	0.126566
Bratislavský kraj	0.221825	0.219318
Central Hungary	0.682391	0.675882

Source: author's own calculation

In summary I can say that in 2007 among the Visegrád countries there were great differences in the degree of absolute specialization (Table 4).. Figure 3 displays the results divided into 10 equal categories, showing that both in Hungary the Central Hungarian region and in Slovakia the region called Bratislavsky kraj there are highly specialized regions. Regions in Poland are more homogenous in this respect. In the Czech Republic the country's Eastern part and the central region show greater specialization, while in Hungary there are greater differences.



Source: author's own work

Figure 3. Absolute specialization measurements in regions

KRUGMAN DISSIMILATION INDEX

The Krugman Dissimilation index also resembles a commonly used formula, the Hoover spatial imbalance measure (Jeney and Szabó, 2001). The value calculated by this latter formula times two is equal to the calculated value of the Dissimilarity index. The square of the value calculated by this method is equal to the calculated value of the Herfindahl index. The second indicator is the well-known Krugman Dissimilarity Index, used for measuring either concentration or specialization:

$$K_j^C = \sum_{i=1}^{n} \left| g_{ij}^C - g_{ij} \right| \qquad K_i^S = \sum_{j=1}^{m} \left| g_{ij}^S - g_j \right|$$

g_{ij}^c- the share of region i in the total national value of branch j; g_{ij}^s - the share of branch j in the total value of region i.

The relative concentration analyzes the distribution of the activities of an industry compared to the average of the distribution of the whole of the activities. After examining the region's relative concentration (Table 5) I can see that the industry's relative concentration in Hungary is relatively high. Unlike Poland, where the index fell during the examined period, in Slovakia it stagnated, and in Hungary and in the Czech Republic the index grew.

Table 6
Industry relative concentration (without building industry) in the Visegrád countries

	2000	2007
Czech Republic	0.159716	0.185677
Hungary	0.186371	0.225624
Poland	0.179888	0.169413
Slovakia	0.133149	0.13318

Source: author's own calculation

If I closely examine the data I can see that the industry's concentration continued in Central Hungary and in the Central Transdanubian region. In Western Transdanubia there is a noticeable increase, and in Northern Hungary there is also, to a smaller extent. The concentration of employment in industry decreased the most in the Southern Great Plain, but the Northern Great Plain and Southern Transdanubia had financial losses as well.

Table 7
Industry relative concentration in Hungary

	2000	2007
Central Hungary	0.085724	0.111676
Central Transdanubia	0.038703	0.049269
WesternTransdanubia	0.030895	0.034544
Southern Transdanubia	0.002041	0.001149
Northern Hungary	0.014485	0.020266
Northern Great Plain	0.009139	0.00688
Southern Great Plain	0.005385	0.001841

Source: author's own calculation

It is interesting to examine financial intermediation in the real estate sector and the relative concentration value. Poland in this case shows the lowest value. In 2007 Hungary showed a difference from the other Visegrád countries (see Table 8 in the Appendix), with the financial sector showing a very high concentration value, which increased significantly during the examined period, in contrast to the other countries where stagnation or decline was observed.

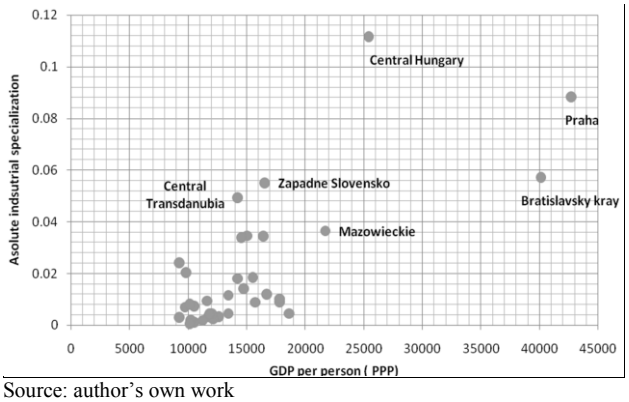
Table 8
Relative concentration of the financial sector

	2000	2007
Czech Republic	0.341607	0.342987
Hungary	0.426036	0.488161
Poland	0.285	0.245257
Slovakia	0.447574	0.372345

Source: author's own calculation

DEVELOPMENT OF THE AREA

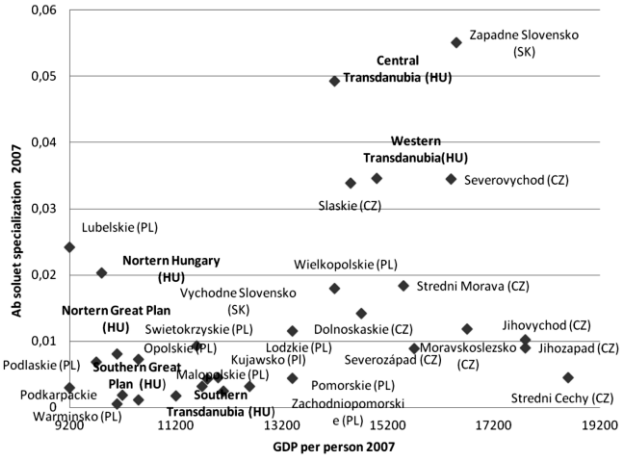
I examined the amount of GDP per person related to the absolute industrial specialization of the various regions. Figure 4 shows the outlying points include three regions with national capitals: Central Hungary, Prague, and Bratislavsky kray. The region of Central Hungary, which includes Budapest, shows a high specialization; however, the GDP per person is much lower than that of Prague or Bratislavsky kray.



Source: author's own work

Figure 4. Absolute specialization in relation to GDP per person in the regions

Despite the fact that the region of Central Hungary is highly specialized in industry, Prague and Bratislavsky kray have a higher GDP. The Warsaw region is seemingly left behind, but this could be due to the size of its territory. It is also informative that the higher specialization in Central Hungary is not related to a higher GDP index. If we leave out regions including capitals, we can see that the picture is more diversified. We can separate them into three larger groups. The regions that have a higher industrial specialization and have a higher GDP per person are defined as leader groups. The followers are the regions that have a relatively high GDP per person, and have a lower industrial specialization index. The regions of the Czech Republic belong here. In the Czech Republic the localization of the industry is the most homogenous. The lagging areas are the regions that could break out of this position through industrial specialization and with an increase in industrial activity. These regions have a low GDP, and the industrial specialization is also low.



Source: author's own work

Figure 5. Absolute specialization in relation to GDP per person in the regions

SUMMARY

In my study I examined the specialization and sector concentration tendencies in the Visegrád countries. I attempted to find an answer to how the industrialization processes such as reindustrialization, or deindustrialization influenced the development of the regions. After the socialist type planned economy, the transition into a mono-structural economy started in all the four countries. However, different developmental paths have been followed in the last two decades. In Poland, when defining industrial policies, special attention was paid to territorial equality and to the role that industry plays in the spatial development of the region (Botos, 2011). According to this theory even though the specialization of some regions is not high, the homogeneous spatial structure supports economic growth. Between 2000-2007 there were a growth of absolute concentration in three countries in the industrial sectors and in the construction sector. The strongest growth of absolute concentration between 2000-2007 was recorded in Hungary, the second was measured in Slovakia summarizing all the sectors absolute concentration. The increase in concentration in Slovakia and in Hungary in almost all the sectors except the financial intermediation should be mainly a consequence of the changes of the industrial structure specific to each area and before and a cause of the conditions of the economic transition and imminent European integration.

There is a high industrial specialization in many regions in Hungary and Slovakia. In Hungary, the industry and the financial sectors were concentrated in some territories, which hindered the development of other territories in the country. The regions that have a higher industrial specialization and have a higher GDP per person are defined as leader groups. The followers are the regions that have a relatively high GDP per person, and have a lower industrial specialization index. The regions of the Czech Republic belong here. In the Czech Republic the localization of the industry is the most homogenous. The lagging areas are the regions that could break out of this position through industrial specialization and with an increase in industrial activity. These regions have a low GDP, and the industrial specialization is also low. n Slovakia, signs appeared that show that the specialization of the area has led to long term negative effects, since the GDP of the region is influenced by the industrial concentration. The Czech Republic is an absolute winner of the transition to the macro-structural economy. The sectors in the country do not show a high specialization, but at the same time in one or two regions, the inherited industrial traditions further economic development.

Acknowledgements

The work described was carried out as part of the TÁMOP-4.2.2/B-10/1-2010-0008 project in the framework of the New Hungarian Development Plan. The realization of this project is supported by the European Union, co-financed by the European Social Fund.

REFERENCES

AIGINGER, K. (1999): Do Industrial Structures Converge? A survey on the empirical literature on specialisation and concentration of industries, WIFO working paper No. 116,

AIGINGER, K. (2004): Industrial specialisation and geographic concentration: two sides of the same coin?, Journal of Applied Economics, Vol.VII, No. 2,

BEINE, M. - COULOMBE, S.(2004): Economic integration and regional industrial specialization patterns: new evidence from the Canadian-U.S. FTA experience, paper prepared for the Meeting of Canadian Economics Association, 2004.

BOTOS, B. (2010): Az iparpolitika metamorfózisa (Metamorphosis of industrial policy). L'Harmattan kiadó, Zsigmond Király Főiskola. pp. 313

BRÜLHART, M. (1995a): Scale economies, intra-industry trade and industry location in the new trade theory, Trinity Economic Papers, No. 95/4

BRÜLHART, M. (1995b): Industrial specialisation in the European Union: A test of the new trade theory. Trinity Economic Paper Series Technical Paper No. 95/5

BRÜLHART, M. (1998): Trading places: Industrial Specialisation in the European Union. Journal of Common Market Studies

CEAPRAZ I. L. (2008): The concepts of specialisation and spatial concentration and the process of economic integration: theoretical relevance and statistical measures. The case of Romania's regions. Romanian Journal of Regional Science. The Joournal of the Romanian Regional Science Association. Vol. 2 No. 1, Summer

CHESHIRE, P. (1990): Explanation the Recent Performance of the European Community's Major Urban Regions. – Urban Studies, 3: 311–333.

CLARK, C. (1940): The Conditions of Economic Progress. London: MacMillan & Co.

CSÉFALVAY Z., CSIZMADIA N. & CSORDÁS L. (2005): A magyar települések és kistérségek versenyképessége. (Competitiveness of Hungarian settlements and micro-regions) : Kistérségek versenyképessége és a globális hálózatok. Polgári Szemle (6-7) pp. 68-76.

ENYEDI Gy. (1996): Regionális folyamatok Magyarországon az átmenet időszakában (Regional trends in Hungary during the transition period). Hilscher Rezső Szociálipolitikai Egyesület, Budapest

FISCHER, M. & NIJKAMP P. (1999): Spatial Dynamics of European Integration, Berlin/New York, Springer

FUJITA, M. - KRUGMAN, P. & VENABLES, A. (1999): The Spatial Economy. Cambridge, MA: MIT Press.

GOSCHIN Z., CSIZMADIA N. & CSORDÁS L. (2009): Regional specialisation and geographic concentration of industries in Romania. South-Eastern Europe Journal of Economics 1: 99-113

The Dictionary of Human Geography (2009), Industrialization 380-382 pp, Blackwell Publishing Ltd, West Sussex, United Kingdom

HECKCHER, E. (1919), The Effect of Foreign Trade on Distribution of Income, Economisk Tidskrift, 21, pp. 1-32

HINE, R. C. (1990), Economic Integration and Inter-industry Specialisation, CREDIT Research Paper 89/6, University of Nottingham.

HORVÁTH Gy. (1998): Európai regionális politika (European regional policy). Dialóg Campus Kiadó, Budapest & Pécs.

JENEY L. & SZABÓ P. (2001): A magyar ipar a specializációs és koncentrációs indexek tükrében az 1990-es években (The Hungarian industry specialization and concentration indices in the light of the 1990's). A Magyar Földrajzi Konferencia tudományos közleményei. CD-ROM. szTh TTK, Szeged.

JOHNSON, C. (1984): The Idea of Industrial Policy. In. Johnson, C. (Ed.), The industrial Policy Debate, San Franciso, Institute for Contemporary Studies

KISS, É. (2010): Területi szerkezetváltás a magyar iparban 1989 után (Territorial restructuring of the Hungarian industry after 1989). Dialóg Kiadó, Budapest-Pécs

KRUGMAN, P. (1991): Geography and Trade. Cambridge, MA: MIT Press.

KRUGMAN, P. (1994): Competitiveness: A dangerous obsession. Foreign Affairs, Vol. 3., 1994 No. 2. 28-44 pp.

KRUGMAN, P. (1998): What's new about the new economic geography?, Oxford Review of Economic Policy, 14, p. 7-17

KUTTOR D. & HEGYI-KÉRI Á. (2012): Additions to the industrial restructuring of sectoral and geographical dimension of the study of Central and Eastern Europe, MicroCad International Conference,83pp, Miskolc

LUX G. (2009): Az ipar hagyományos terei: a régi ipari térségek. (The industry standard spaces of the old industrial regions) Tér és Társadalom. 23(4): 45-60.

MCCANN, P. (2001): Urban and Regional Economics. Oxford University Press.

MOLLE, W. (1997): The economics of European integration: Theory, practice, policy, in K. Peschel (Ed.) Regional growth and regional policy within the framework of European integration, Heidelberg Physica Verlag, , pp. 66-86

NELSON, R. R. (1999:The agenda for growth: a different perspective. Cambridge Journal of Economics, 22: 497-520.

NEMES NAGY J. (Ed.) (1977): Regionális gazdaságföldrajzi gyakorlatok (Regional economic geography exercises). Tankönyvkiadó, Budapest.

OHLIN, B. (1933) Interregional and international trade, Cambridge, MA: Harvard University Press

RÉDEI, M. (2001): Regionális specializáció. (Regional specialisation) A Magyar Földrajzi Konferencia 2001. október 25-27. p. 152-175. CD kiadás.

RICARDO, D. (1817): On the Principles of Political Economy and Taxation (1971 edition), Penguin, Harmondsworth

SCHUMPETER, J.A. (1950): March into Socialism, In: American Economic Review XL (May), pp. 446-456

SZALAVETZ A. (2007) Műszaki fejlődés és tőkeintenzitás (Technical progress and capital intensity) In: Közgazdasági Szemle, LIV. évf., február pp. 184–198

SZALAVETZ A. (2008): A szolgáltatási szektor és a gazdasági fejlődés.(The service sector and economic development) Közgazdasági Szemle, LV. évf., 2008. június. pp. 503-521

TAKÁCS Z. (2003): The phenomenon of industrial degradation of some foreign examples in North Hungary's economic situation from 1990 to 2001. In: Tóth I. J. (Ed.), Magyar Kereskedelmi és Iparkamara Gazdaság- és Vállalkozáselemzési Intézet, Budapest., 2003. pp. 13-26

TRAISTARU, I. (2000): Specialisation patterns and industrial location in Europe and North America: measurement issues and evidence. PHARE ACE Project, Discussion Paper

VEBLEN, THORSTEIN B. (1898): Why is economics not an evolutionary science? Quartely Journal of Economics, 12(3), 373-97; reprinted in Veblen (1919).

Appendices

Table 9
Absolute regional specialization in 2000 and 2007

Czech Republic	2000	2007
Prague	0.165393	0.165088
Střední Cechy	0.074112	0.059982
Jihozápad	0.094222	0.065325
Severozápad	0.061694	0.055589
Severovýchod	0.126521	0.096913
Jihovýchod	0.179005	0.122288
Střední Morava	0.078823	0.061134
Moravskoslezsko	0.063318	0.058087
Hungary		
Central Hungary	0.682391	0.675882
Central Transdanubia	0.082847	0.068943
Western Transdanubia	0.070108	0.05889
Southern Transdanubia	0.057154	0.036779
Northern Hungary	0.066781	0.05916
Northern Plain	0.101967	0.071627
Southern Plain	0.150487	0.065649
Poland		
Lódzkie	0.039664	0.034695
Mazowieckie	0.150577	0.126566
Malopolskie	0.050616	0.040547
Slaskie	0.059214	0.05836
Lubelskie	0.030043	0.011619
Podkarpackie	0.015538	0.009989
Swietokrzyskie	0.00922	0.005143
Podlaskie	0.007293	0.00378
Wielkopolskie	0.055628	0.043994
Zachodniopomorskie	0.011805	0.011471
Lubuskie	0.003757	0.00362
Dolnoslaskie	0.032351	0.031033
Opolskie	0.004749	0.003951
Kujawsko-Pomorskie	0.018201	0.015239
Warminsko-Mazurskie	0.007017	0.00629
Pomorskie	0.015927	0.015148
Slovakia		
Bratislavský kraj	0.221825	0.219318
Západné Slovensko	0.745834	0.558552
Stredné Slovensko	0.338616	0.278769
Východné Slovensko	0.395111	0.320837

Table 10
Relative concentrations by sector in 2000 and 2007

Industry (excluding construction)	2000	2007
Czech Republic	0.159716	0.185677
Hungary	0.186371	0.225624
Poland	0.179888	0.169413
Slovakia	0.133149	0.13318
Construction	2000	2007
Czech Republic	0.062646	0.064353
Hungary	0.093215	0.05772
Poland	0.110618	0.085138
Slovakia	0.080509	0.154865
Agricultural	2000	2007
Czech Republic	0.358446	0.389375
Hungary	0.511179	0.531504
Poland	0.352089	0.444292
Slovakia	0.447574	0.372345
Financial intermediation; real estate	2000	2007
Czech Republic	0.341607	0.342987
Hungary	0.426036	0.488161
Poland	0.285	0.245257
Slovakia	0.27471	0.263571
Public administration and community services; activities of households; extra-territorial organizations	2000	2007
Czech Republic	0.066396	0.075565
Hungary	0.076295	0.084759
Poland	0.082003	0.075184
Slovakia	0.079958	0.098237
Wholesale and retail trade; hotels and restaurants; transport	2000	2007
Czech Republic	0.101365	0.106105
Hungary	0.113034	0.097636
Poland	0.083745	0.084707
Slovakia	0.050242	0.022784

Table 10
Relative regional specialization in 2000 and 2007

Czech Republic	2000	2007
Prague	0.6959873	0.6777912
Střední Cechy	0.5591897	0.5789420
Jihozápad	0.5843710	0.6264985
Severozápad	0.5115709	0.5158901
Severovýchod	0.5274417	0.5095142
Jihovýchod	0.6292996	0.6551983
Střední Morava	0.5376828	0.5601588
Moravskoslezsko	0.4492754	0.4874126
Hungary		
Central Hungary	0.9459309	0.9310914
Central Transdanubia	0.5517805	0.5326360
Western Transdanubia	0.5340147	0.5290652
Southern Transdanubia	0.6227494	0.6640362
Northern Hungary	0.5311821	0.5403256
Northern Plain	0.5466783	0.5861026
Southern Plain	0.6955702	0.6481076
Poland		
Lódzkie	0.5856961	0.5216427
Mazowieckie	0.5506185	0.5285365
Malopolskie	0.5397312	0.5290839
Slaskie	0.5652524	0.5218846
Lubelskie	0.6264656	0.6102590
Podkarpackie	0.7061584	0.6813419
Swietokrzyskie	0.7771416	0.7652960
Podlaskie	0.8047933	0.8222998
Wielkopolskie	0.5094302	0.5188474
Zachodniopomorskie	0.7444017	0.7926900
Lubuskie	0.8539440	0.8359021
Dolnoslaskie	0.6175524	0.5874947
Opolskie	0.8335652	0.8546767
Kujawsko-Pomorskie	0.6711297	0.7122009
Warminsko-Mazurskie	0.7979169	0.7888178
Pomorskie	0.6975297	0.7042990
Slovakia		
Bratislavský kraj	0.7109305	0.6329031
Západné Slovensko	1.0899940	1.1746788
Stredné Slovensko	0.5207388	0.5676582
Východné Slovensko	0.6132824	0.6283568