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THE ISSUES OF THE MACRO LEVEL SPECIALISATION OF HUNGARIAN INDUSTRY

PhD Theses

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I. The justification and actuality of the theme

During the past few years the geographical location issues of industry came to the forefront both in Hungary and in the European Union. On certain areas of our country different industry structures evolved and various industries became dominant in each region. The spatial location of certain industries was influenced by several social-economical factors (the historical traditions of production, ownership, available labour force and equipment, resources, etc.) In case of spatially different industry-structure different profitability, human resource use, technical standards, risk factors and market possibilities must be taken into consideration. Therefore the spatial specialisation and concentration of industrial sectors became a centre issue in Hungarian economy, which was the major motivation factor of my research theme.

The actuality of the topic is enhanced by the fact that nowadays has become an important key issue to rationalize the structure of industry. Therefore it is necessary to do research in Hungary for the investigation of the structural changes of industry as well as to examine and analyse the correlations to ensure the development of rational and efficient industrial structure on the given areas. This is also very important, because regional specialization is a quality-indicator category, which to a certain extent, refers to the development level of the region as well. It can be expected in modern market economies that the areas be specialised in the industrial sectors, where there are more favourable production conditions.

II. The objective of the research and the structure of the dissertation

The thesis aims to examine the characteristic changes (spatial and structural) of Hungarian industry in recent years, as well a show and how much these changes affect the spatial specialization and the sector concentration of our present industry. In my work, based on my test results, I make proposals to facilitate the development of a rational industrial structure.

The re-appreciation of industrial concentration and specialization in the European Union and Hungary resulted in this issue became the focus of my research. The research into and the analysis of industry-related specialization and concentration tests are important as the changes of the regional and sectoral structure of industry can induce a number of positive economic processes (increased efficiency, competitiveness, deepening co-operation), and it can help economic advancement in that area and also nationwide. Together with a number of positive effects, however, negative effects might also appear (eg. one-sided industrial structure, deep crisis in case of recession, the development of industrially depressed areas), which might hinder the dynamic development of a region for shorter or longer time.

After determining the objectives of the dissertation a detailed description follows with regard to the major periods of development of the Hungarian industry, the trends and tendencies in the processes of each era from World War II until today. To examine the development of our industry from World War II was justified by the fact that there was an entirely new situation in Hungarian economy after the war, which resulted in a new industrial policy different from the previous one. The domestic industry was characterized by different development directions in different historical era, where COMECON, and later, after the regime-change the European Union, had an important role. A detailed analysis of the development in this period is important to present an overview of its impact on our industry.

Then – based on partly the professional literature and partly on my research – I analyze the major changes in the industrial structure of the last two decades. I examine the direction and extent as well as the causes and effects of the structural changes in industry, with particular emphasis on certain industrial sectors and sub-sectors. I do this in order to reveal the processes in industry, which led to the development of the present regional and sectoral structure. Then I examined the theoretical and methodological issues of regional specialization, and dealt with the growing importance of the role spatiality and with the horizontal organization of industry, thereby establishing a basis for theoretical investigations. Accordingly, the theoretical issues related to domestic and foreign problems of regional specialization, the solutions and proposals are analyzed based on the results from different fields, primarily from the field of the regional economy.

I think it is important to study the theories related to regional specialization because in many cases, they identify and define the effective framework of today's economy (in this case the industry). Partly based on this theoretical framework, the economic policy sets out the steps (e.g. development directions), which can be used to solve regional and sectoral problems in industry. In addition, I gave an overview of the methods used in specialization, and also of the possibilities of its applicability. Using these methods a comparative analysis is made where I examine how the transformation of industry after the Hungarian regime affected the development of regional specialization and industry concentration.

After processing the primary statistical data I made indicators in order to analyze in detail whether there was any sectoral specialisation in the industry of our country in recent years and whether the sectoral concentration strengthened or weakened. If there was any strengthening or weakening, which are the regions (counties) and industrial sectors where it occurred, what were the causes and how it may affect the future development of our industry, the development of rational industrial structure.

III. The hypotheses of the research

Previous research-hypotheses in connection with the dissertation:

H1.: The sectoral structure of Hungarian industry transformed fundamentally during the past two decades.

H2.: The differences increased between the performance of the industrial sectors during the past two decades.

H3.: The sectoral structure of Hungary is more and more in harmony with the sector structure of the European Union.

H4.: The increase of the specialisation and concentration is caused by the increase in the weight and role of a sector or a county, or the decline of a sector or county that was not really significant previously.

IV. The methodology of the research

The transformation of economy in the years following the regime change in Hungary resulted in significant changes of the sectoral and spatial structure of industry.

Due to these changes it was necessary to carry out examination to find the answers for the questions if a concentration can be observed in case of the spatial organisation of industrial sectors and if it is characteristic for certain counties to have a growing or declining industrial specialisation. To answer these hypotheses I applied primer and secondary methods.

The primary method (my research) included processing and organising the data provided by the Central Statistics Office (KSH – Központi Statisztikai Hivatal). (It would be useful to examine a smaller unit area (e.g. a micro-region), but relevant statistics are not available.) With the help of these data the mathematical-statistical methods for regional research were applied.

Accordingly the data involved in the research are as follows:

- The number of employees in industry
- Domestic sales
- Export sales and
- Total sales

In case of employment in industry, the place of business data, while in case of domestic, export and total industrial sales the data of the county-based industrial organizations data had to be taken into consideration. The studied time interval is between 2000 and 2008. There were frequent changes in TEÁOR (Standard Classification System of Industrial Activities) numbers; therefore this is the period that allows the comparison and the analysis of data and drawing conclusions. During the time interval between the base (2000) and the actual period (2008) the degree of specialization and concentration was examined every two years in order to have a more detailed analysis of the changes. A longer time period should have been examined during the research, but the available data did not allow this. However, changes and tendencies in industry processes in recent years are reflected well in the study.

There are several kinds of methods to measure the industrial specialisation and the spatial concentration of the industrial sectors. During my research I selected two out of the different methods. One is the Herfindahl index to determine the level of absolute specialisation and concentration and the other is the Dissimilarity index to show the alterations of relative specialisation and concentration. The results of these indexes are used to examine and analyse the spatial specialisation of the industrial sectors and the sectoral specialisation of the regions.

The absolute specialisation indicates how diverse the sectoral structure is in the examined territorial unit (county). Those territorial units (counties) within a country can be considered as specialised, which have a sectoral structure different from that of the national distribution.

The relative specialisation is basically determined by two factors. On the one hand it is determined by the sectoral structure of the given county itself, on the other hand by the sectoral distribution characteristic of the country as a whole. In case an industrial sector nationally not too significant becomes dominant in a county, we can say the relative specialisation of that county will be high. On the other hand a high relative specialisation characterises the county also when the importance and role of a nationally significant industrial sector is not significant in the given county, but at the same time it can show a high rate in another industrial sector that is not significant nationally. It means that the relative specialisation indicates the industrial structure of which county differs most from the national one.

The absolute concentration indicates the rate a given territorial unit (county) has from the whole (national) quantity of the given industrial sector, while the relative concentration gives an overview about the similarities of the geographical distribution of the given industrial sector compared to that of the whole industry.

The secondary method was the research of the domestic and foreign literature related to the theoretical and methodological issues of the development of industrial history, territorial and structural changes, as well as of regional specialization.

V. Scientific results

On the basis of the previously described hypotheses the results of the dissertation can be summarised as follows:

● T1 The sectoral structure of the Hungarian industry transformed during the past two decades.

I made the detailed, comparative analysis on the sectoral structure of the Hungarian industry after the regime change in order to reveal any changes in industry trends, which led to the development of the present regional and sectoral structure. On this basis, it became possible to analyze in detail the causes, extent and direction of structural changes, and also their effect on regional specialization and sectoral concentration. My research has confirmed that:

– Mining, which was very important in the years before the regime change, is completely in the background today. The importance of mining within the industry decreased from the previous 8.1% to 0.5%. The reason for that were the growing production costs, the unfavourable production facilities (natural resources, the low concentration of useful material, deep mining was necessary) and the application of inefficient technologies.

– The role and importance of the energy sector showed an increasing tendency due to the relative growth of the energy prices during recent years.

The role and importance of the energy sector have increases considerably (from11.9% to 17.0%), which is due to the relatively increasing energy prices of the recent years.

– The processing industry and within that mechanical engineering achieved spectacular results. The proportion of mechanical engineering approximately doubled (from 32.6% to 54.8%) after Hungary joined the international division of labour (especially EU) and the export ratio also increased in the past few years. Within machine industry the role of several sectors increased considerably: computer and electronic equipment production (3.4% to16.4%, road vehicle production (6.8% to 12.9%), and machine and equipment production (3.5% to 6.0%). In case of these „pull industries" even a 10-percentage-point positive change could be observed.

– The export of road vehicle production and computer, electronic equipment production was also favourable within the processing sector. The export of computers and electronic products industries was 24.0% in 2001, which increased to 26.8% by 2008. The export of vehicle production industry showed 26.6 % in 2001, which went up to 28.1 % by 2008.

– Light industry sectors can be accounted as the great „losers" of the past two decades. The proportion of these sectors fell back to 50% (from 14,8% to 6,2%). The reason for the decline can be explained by the high production costs compared to the production costs of Far-Eastern producers.

– A previously prosperous food industry also belongs to the „loser" industrial sectors. Its proportion is only two-thirds of the previous one during the past decade. Its rate within industry fell back from 21,9% to 9,6%. It is a consequence of the decreasing performance of Hungarian agriculture as well as

the unfavourable and sometimes faulty privatisation of Hungarian food processing factories.
– Despite the positive and negative changes affecting our industry it is obvious that the structure of our industry became more up-to-date, modern and more competitive.

<u>● T2 The differences increased between the performance of the industrial sectors during the past two decades.</u>

Based on my detailed analyses it was found that the differences have increased between the industrial sectors considering their performance (number of employees, net sales, operating profit, export sales, gross operating profit). Accordingly, the industrial sectors of our country were classified into three groups:
– Declining industrial sectors: mining, food production, drink and tobacco production, textile and leather production, wood and paper production, electric appliances production and metallurgy.
– More competitive, moderately developing industrial sectors: metal mass products, crude oil processing, chemicals and chemical goods production, medicine production, non-metal mineral goods production, rubber and plastic production, machine and equipment production.
– Dynamically developing industrial sectors specialised for world market production: computer production, electric appliances production and road vehicle production.
In declining industries, the test results indicate the number of enterprises and through that the number of employees, export sales, net sales of businesses and also their profit decreased steadily.
In the more competitive, moderately developing industrial sectors the number of enterprises increased, while the number of employees stagnated or somewhat increased. In addition, there is modest growth in export volume and operating profit as well.
The share of dynamically developing sectors within the industry increased significantly and also the number of employees, increased continuously, profitability conditions improved , in some cases their contribution to GDP exceeded 10%. Studies have shown that this group includes industrial sectors that have a significant part in Hungarian export sales.

<u>● T3 The sectoral structure of Hungary is more and more in harmony with the sectoral structure of the European Union</u>

Comparative analyses were carried out to determine which direction and to what extent the disintegration of COMECON as well as Hungary's associated then full membership in the European Union influenced the structure of our industry. On this basis it can be concluded that:

- Due to changes in market relations in recent years considerable changes took place in the structure of industry in Hungary and in the European Union as well. These changes resulted in new regional and sectoral structures.
- It is typical in the industrial structural changes both in Hungary and in the European Union that both types of industrial sectors are present: the traditional sectors, which are continuously losing their importance and the dynamically developing sectors, which can take the new economic and market challenges. In EU relations, when considering the added value, mining, metallurgy, some sub-sectors of mechanical engineering (such as electrical equipment manufacturing, shipbuilding) as well as textiles, leather products and footwear production are the declining sectors, while IT equipment, electronic and optical product manufacturing, vehicle construction, and some sub-sectors of chemical industry (pharmaceuticals, chemicals and chemical products) are the dynamically developing sectors.
- The importance of traditional sectors within the industry has decreased, while that of the dynamic industrial sectors has increasingly strengthened. The cause of the decline is varied, which include the decrease of demand raw material sources, the intensifying international competition in the global market, the gradual increase in production-cost and the continuous development of science and technology as well.
- Smaller or larger differences can be observed in the sectoral structure of the processing industries of certain EU member states. Based on the added value, the most significant industries of the 15 former member states are the machine, equipment, food, beverages, tobacco and chemical industries. Together with this however, differences can be observed. Considering the European Union founding states, the chemical industry of the Benelux states is outstanding (Belgium), as well as the food, drink and tobacco production (the Netherlands), and last but not least the metal basic material production (Luxemburg). In case of France it is the food, drink and tobacco production, while in case of Germany and Italy it is the machine and equipment production. When regarding the countries, which became members later, the largest and most significant industrial sectors are food, drink and tobacco production in Denmark, Greece, Spain, Portugal and the United Kingdom, chemical industry in Ireland, machine and equipment production in Austria, communication technology products in Finland and vehicle production in Sweden.
- Minor changes took place in the growing European Union regarding the added value. In the economic integration with 25 member states the three main industrial sectors are food, beverages and tobacco, chemicals and machinery and mechanical equipment production. Out of the new member states it is the Czech Republic, the Baltic countries, Hungary, Poland and Slovakia where the most important industrial sectors are electricity, gas, steam and water supply. The food, beverage and tobacco production in Cyprus, the communication

equipment production in Malta, and fabricated metal production in Slovenia can be highlighted.

- In Hungary the most important industrial sectors by added value are electricity, gas, steam and water supply, machine industry (road vehicle production) and chemical industry, which considerably reflect the industrial structure of the most developed European Union countries.
- The sectoral structure of industry is also in harmony with the development of foreign trade as well. Engineering industry (vehicle production, electronic and optical products manufacturing, machinery and equipment production) and chemical industry (pharmaceuticals, chemicals and chemical products) have a significant role in the foreign trade of the European Union and Hungary

● T4 The increase of the specialisation and concentration is caused by the increase in the weight and role of a sector or a county, or the decline of a sector or county that was not really significant previously.

Comparative analyses from several aspects were carried out and examinations made concerning how the transformation of Hungarian industry after the regime-change influenced regional specialization and sectoral concentration. After processing the primary statistical data indicators were composed in order to analyze in detail whether there was any regional specialization in Hungarian industry in recent years and also if there was any strengthening or weakening in sectoral concentration. If strengthening or weakening occurred, which were the regions (counties), and industrial sectors where it occurred, what were the causes and how it may affect the future development of our industry and the development of rational industrial structure. The research proved that:

- In the research period the level of the *employees' absolute specialisation* was low. Despite that fact it was found that the highest number of labour was employed in engineering industry (Fejér, Vas, Győr-Moson-Sopron, Jász-Nagykun-Szolnok, Somogy, Zala, Heves Counties), metal and metal-processing products (Fejér County), textile, leather products and shoes production (Vas, Tolna County) and food, drink and tobacco production (Pest County). Within engineering industry, road vehicle production (car production), machine and equipment production and electronic goods production are prominent. Considering textile, leather and shoe industry it is the shoe production, while within food, drink and tobacco industry it is meat industry, milk industry, fruit and vegetable production and conservation industry as well as drink production can be mentioned.
- In case of *domestic sales* higher indexes can be observed than that of the employees. It reflects a growing absolute specialisation in this field. In this case the machine industry and the gas, steam and water supply provided the significant rate of domestic sales. When considering machine industry it is Somogy County that is outstanding, while in gas, steam and water supply Csongrád County is prominent. Within machine industry the electronic industry,

the production of labour saving devices and road the vehicle production can be mentioned.

- The highest Herfindahl index values can be observed in case of *export sales,* which mean the highest level specialisation of Hungary in this field. It is mainly due to the machine industry (road vehicle production, machine and equipment production, communication and electronic products manufacturing), while to a lesser extent it was due to the chemical industry (plastic production and processing industry). The most specialised in machine industry are the counties situated in Transdanubia (Fejér, Győr-Moson-Sopron, Komárom-Esztergom, Vas, Somogy), as well as Heves and Jász-Nagykun-Szolnok County, while int he field of the chemical industry it is Borsod-Abaúj-Zemplén County.

- In case of *total sales*, the index of absolute specialisation is almost the same as the values of export sales. Therefore it can be concluded that the export sales within total sales have a prominent role. In this case besides machine industry (road vehicle production, machine and equipment production, and electronic articles production) the metal raw material and metal articles production (Fejér County) can be mentioned. Machine industry is typical in Somogy, Fejér, Komárom-Esztergom and Vas County.

- In case of *relative specialisation,* there are also low index values when considering *employees.* The reason for this is that the sectoral structure of the industry of a given county is not different considerably from the national structure with regard to the number of employees. Differences can be observed in this field in Tolna, Fejér, Komárom-Esztergom, Csongrád, Békés and Borsod-Abaúj-Zemplén counties. The higher rate of textile industry, leather goods and shoes production (leather industry, shoe industry) in Tolna, metal raw material, metal processing goods production in Fejér and Borsod-Abaúj-Zemplén, machine industry (road vehicle production, electronic industry) in Komárom-Esztergom while food, drink and tobacco production (meat industry, milk industry) in Csongrád and Békés resulted in the difference from the national sectoral structure

- In case of *domestic sales* there are higher dissimilarity indexes than in case of employees. It is caused by a more powerful difference of the industrial sectoral structure from the national one. In this case the higher rate of machine industry (Somogy), food, drink and tobacco industry (Somogy, Bács-Kiskun, Jász-Nagykun-Szolnok, Zala), electricity, gas, steam and water supply (Tolna), the non-metal mineral goods production (Békés), timber and paper production, printing industry (Békés, Bács-Kiskun) and mining (Zala) resulted in a structure different from the national one

- In case of *export sales* there are typically higher index values, i.e. the highest relative specialisation can be observed here. Out of the counties the industrial structure of Borsod-Abaúj-Zemplén, Csongrád, Szabolcs-Szatmár-Bereg, Békés and Hajdú-Bihar Counties differ most from the national distribution. The higher rate of chemicals industry in Borsod-Abaúj-Zemplén and Hajdú-Bihar Counties, the food, drink and tobacco industry in Hajdú-Bihar, Békés, Csongrád and Szabolcs-Szatmár-Bereg Counties, while the textile, leather goods and shoe production in Szabolcs-Szatmár-Bereg County resulted in the export structure different from the national one.

- In case of *total sales* the relatively most specialised counties are Tolna, Békés, Borsod-Abaúj-Zemplén, Szabolcs-Szatmár-Bereg and Csongrád Counties. The higher relative specialisation, which is different from he national one, is due to electricity, gas, steam and water supply in Tolna, food, drink and tobacco production in Szabolcs-Szatmár-Bereg, Békés and Csongrád Counties, and the chemical industry in Borsod-Abaúj-Zemplén County.

- The *employees' absolute concentration* represents low index values. The Herfindahl indexes are higher in case of *domestic sales, export sales* and *total sales.* In all cases mining, chemical industry, timber and paper production, printing, electricity, gas, steam and water supply as well as metal raw material and metal processing goods production indicate a significant concentration. The growth of concentration is due to the capital and Borsod-Abaúj-Zemplén, Veszprém, Fejér and Zala Counties in most cases.

- The *employees' relative concentration* represents low index values, since this is the most equalised of all. In case of domestic sales, export sales and total sales higher dissimilarity indexes can be observed. In case of employment it is mining and non-metal mineral article production that show higher concentration. The higher sectoral concentration was caused by the higher sectoral rate of Borsod-Abaúj-Zemplén and Veszprém as well as Zala and Bács-Kiskun Counties in mining, the significant decline of Fejér County in non-metal mineral production sector, and in Veszprém County the sectoral rate being higher than the national industrial rate.

- In case of *domestic sales* a higher concentration can be observed in mining, chemical industry, metal raw material and metal processing article production and other processing industry as well as textile, leather and shoe production.

The higher dissimilarity indexes were due to the capital being relatively low in case of mining, a larger sectoral share of the industrial importance of Budapest in case of chemical industry, in metal raw material and metal processing article production the higher than the average rate of Fejér County within the sector, in other processing industry a larger sectoral share of Komárom-Esztergom County, while in textile, leather and shoe production the significant fall-back of the share of Fejér County within total industries.

- In case of *export sales* the higher concentration of electricity, gas, steam and water supply, mining and chemical industry was caused by the fact that the share of the capital within the sector considerably exceeded the importance of Budapest within Hungarian industry. The reason for the higher index value in case of non-metallic mineral products and textiles, leather products, footwear is the significant backlog of the share of Fejér County when compared to the importance of the county within the total industry.

- In case of *total sales* the higher relative concentration is characteristic in mining, chemical industry and textiles, leather products and footwear production. In case of mining and chemical industry it is due to a high proportion of Budapest and Zala County, while in case of textiles, leather products and footwear production the low share of Fejér County within the sector.

To sum up it can be concluded that in most cases specialisation and concentration increased (strengthened) from the base year to 2008. The most significant growth can be observed in the relative specialisation and concentration as well as the absolute concentration of domestic sales. As opposes to that a decrease (weakening) can be seen in the relative specialisation of export trade as well as the employees' relative concentration and specialisation. However, the industrial structure of our country is more diversified. Therefore, the increase in the specialization and concentration is proposed in areas with diversified industries and a good selection considering natural, social and economic conditions. These facilities can help to develop competitive products, product groups, production of such a concentration and specialization, which can lead to a rational industrial structure.

Changes in industrial specialisation and concentration

Name	Index averages		Rate of change
	2000	2008	
Relative specialisation of domestic sales	0,63	0,76	+0,13
Relative concentration of domestic sales	0,63	0,76	+0,13
Absolute concentration of domestic sales	0,17	0,27	+0,10
Absolute concentration of export sales	0,24	0,33	+0,09
Absolute specialisation of domestic sales	0,25	0,31	+0,06
Absolute specialisation of total sales	0,31	0,37	+0,06
Relative concentration of export sales	0,94	1,00	+0,06
Absolute concentration of total sales	0,15	0,20	+0,05
Relative concentration of total sales	0,72	0,77	+0,05
Absolute specialisation of export sales	0,45	0,48	+0,03
Employees' absolute specialisation	0,18	0,20	+0,02
Relative specialisation of total sales	0,70	0,71	+0,01
Employees' absolute concentration	0,08	0,09	+0,01
Employees' relative specialisation	0,37	0,34	-0,03
Employees' relative concentration	0,44	0,37	-0,07
Relative specialisation of export sales	0,67	0,56	-0,11

Source: author's calculations based on KSH data

The positive changes of the index values in some cases only represent a change of a percent on average. A more pronounced increase in the average index of specialization can be experienced in the value of relative specialization according to domestic sales. So I think that the more marked changes of spatial development should be investigated. Of the 20 area units in the ones with lower and upper extreme value index were taken out to study the details of the modifications by specialisation hierarchy. First it can be concluded that the changes are characterized by significant hectic ranking. The least specialised counties of eight years in some cases were up 11 places (e.g. Komárom-Esztergom County from the 17th place to the sixth, or Vas County from the 18th place to the 10th).

At the same time, Baranya County slipped back from the former favourable fifth place to 15th, the main reason for which is the declining role of county in food, beverage and tobacco manufacturing as well as the increase of the significance of the non-metallic mineral products and basic metals and fabricated metal product manufacturing. Thus, the industrial structure of the county has become more diversified and production and sales are less differ from the national structure.

The mentioned Komárom-Esztergom County in 2000, was the 17th in the relative specialization ranking of domestic sales of 17 and became the sixth in the examined period. This is mainly due to the dynamic development of engineering industry and the food, beverage and tobacco manufacturing as well as non-metallic mineral product manufacturing. The rise of these sectors caused the marked deviation from the national average values. Vas County got from the 18th place 8 units forward in the rank, which is primarily due to engineering industry and chemical industry and food, beverages and tobacco production. Of the previous industries engineering developed greatly during the studied time interval.

Looking at the directions of the leading specialised areas of 2000 and less specialized regions by 2008, it was found that specialization declined in case of the leading group(except in Békés County), while it increased in case of the less specialised (except Budapest). When comparing the per capita GDP in eight years of these two groups with the index changes it can be concluded that the unit value of GDP growth was the most dynamic, where the specialization index of the increased best (strongest). This markedly prevails despite the very complex and differentiated picture. Therefore the improvement of the specialization index as explained in the theoretical part of the introduction, has a tendency of development in general.

The examinations of the specialisation and concentration data of employees in industry, domestic, export and total sales in Hungarian counties reflect those changes in the processes of industry, which were characteristic of the sectoral and territorial structure of Hungary in recent years. Due to the changes the role and the weight of certain regions and industrial sectors also changed, resulting in a new (different from the former) industrial structure and industrial space structure developed. The consolidation of industry in many places (mostly in Transdanubia) resulted in the development of horizontal cooperation (clusters).

The obtained results indicate that in recent years our country experienced the greatest specialization in mechanical engineering and chemical industries, while in case of mining, timber, paper production and printing, metal raw material and metal articles production and electricity, gas, steam and water supply, there was the highest regional concentration.

Studies suggest that in the field of machine industry there is a larger-scale employment and production, and the horizontal co-operation developed in various regions of the country resulted in the development of significant economic benefits.

Our country has developed some of the industrial sectors (mechanical engineering, chemical industry) and sub-sectors (road transport equipment, electronic products, machinery and equipment manufacturing, plastics, pharmaceuticals, which can be competitive in the European Union and through that in global world market. Those industrial sectors and subsectors, which are not or are less competitive (textiles, leather products, footwear production), have gradually disappeared or have been moved into another economic environment (country).

It must be mentioned here that the high specialisation and concentration has both advantages and disadvantages. The high specialisation and concentration have a positive effect, since it enhances the deepening of cooperation relationships of the companies (small and medium size enterprise, multinational companies) of a given sector, the competitiveness of the companies might increase and with an occasional joint tactical step they can flexibly react to the changing market processes. It can also help the development of the economy of the given region as well as the whole national economy. The excessive strengthening of the regional specialisation of industry might have a negative effect in case it results in a one-sided industrial structure. It might repress the activities belonging to other sectors, for which the resources of the region are favourable, or weaken the opportunities for cooperation. In case of recession the crisis in that sector can be a significant impact on the entire economy of the region. This could lead to a profound crisis in the region (economically depressed region) and may hinder the long-term dynamic growth.

The new large-scale (mostly) productive investments in Hungaraian industry that has recently been completed, and also those that will be established in the future can create a new situation in the regional specialization and sectoral concentration of our industry (e.g. Hamburger Hungária – Dunaújváros, Mercedes-Benz – Kecskemét, Audi Hungária Motor – Győr, Linamar Hungary – Orosháza, Csaba Metál – Békéscsaba and Szeghalom).

Therefore, the current industry structure changes and transformations have not been completed. Both the regional and the structural transformation of the industry keep going on, that is the reason why specialization and concentration calculations of the thesis were carried out and the conclusions refer to the time interval mentioned above.

VI. Suggestions

The completed work - I think - illustrates well the processes in domestic industry characteristic of the development of the sectoral and territorial structure of Hungary over the last few years. To ensure that in the future the Hungarian industry would have a more favourable sectoral and geographical structure, and could have a more significant role in our economy, I need to make some suggestions.

- Out of the former "socialist bloc" countries it was the Commonwealth of Independent States (CIS) established after the Soviet Union ceased to exist that played a more significant role in Hungarian foreign trade in the years following the regime-change. The foreign trade with CIS countries in recent years has significantly decreased. Out of these countries our main foreign trade partner is Russia. The significant Russian market can be considered as unexploited reserves for our country, so it would be advisable to strengthen foreign trade ties. It would be advisable to look for connections to be developed with regard to the export of food products.

- Out of the Asian countries our major trade partners are Japan, China and South Korea. Considering these countries, our trade balance is negative. Hungarian exports with these countries during the examined period in many cases was below 1.0%, and at the same time our imports even individually were sometimes more than 3.0%. We should endeavour to balance our trade with these countries in a positive direction.

- Out of The foreign trade of the country concerning industry has become increasingly EU-centred. Over the past decade, the EU-oriented foreign trade deepened. This is supported by the fact that almost 80% our industry exports is aimed at European Union markets, and nearly 70% of the industrial products on the domestic market is purchased from European Union countries. It results in a considerable dependence. The strong market dependence, however, has a positive benefit as well, which reflects the fact that our products meet the stringent quality technical and technological requirements of the European Union. However, despite the fact mentioned above, it would be unfortunate for the economy and the orientation of the foreign trade of a country to be so one-sided in this ever-changing world. Part of he former eastern markets should be obtained back and the relationships with countries (firstly Asian, North-American, Latin-American) that could be markets for our products should be widened and strengthened. This would reduce our dependence on the European Union and some of the countries and contribute to the establishment of multi-polar trade relations.

- We should endeavour to adjust the industrial production structure to the domestic as well as international market demand (sales opportunities). The marketability (appropriate quality) and competitiveness must be the orienting force.

- The food, beverage and tobacco production belonging to the group of declining sectors should be necessary to develop, within that primarily the dairy industry, meat industry, poultry processing industry and preserving industry. In my opinion, with the support of the small and medium enterprises within the sector the decline of food industry could be mitigated.

Moreover, the ability of employment could be improved especially in underdeveloped regions (Plain), where structural unemployment is above the average value. The development of these food-industrial sectors could have a multiplicative effect, since it could contribute not only to the development of the industry but also to that of the closely linked agriculture. A full-scale development would be appropriate for these groups, because there are available natural, social and economic facilities.

- The development of and support for moderately growing industrial sectors (pharmaceuticals, chemicals and chemical products) is also necessary together with that of the advanced and competitive industrial sector. In this way, it could create diversified regional and sectoral structure both in the field of employment and in sales (export and import). We have a high-level knowledge base for the development of these industrial sectors.

- The expand of the co-operation partnerships between industrial companies (small and medium enterprises) should be encouraged because the actors of the same industrial sector, which are separated and isolated from each other, are less effective both in the purchase of inputs (e.g. materials, raw material), and in production, and also in sales opportunities. The collaboration between the enterprises should be strengthened and effective clusters should be established based on this partnership, mainly in food industry. These partnerships can facilitate the economic rise of the regions well.

- The excessive regional specialization and sectoral concentration of industry should be reduced because they can result in a one-sided industrial structure. Studies have shown that an increasing machine industrial specialization (road transport equipment, machinery, mechanical appliances and electronic products) was characteristic of Fejér, Vas, Győr-Moson-Sopron, Komárom-Esztergom, Somogy, Jász-Nagykun-Szolnok and Heves Counties, considering mainly employment and export sales. Recession may cause the crisis of the given industrial sector, which may have a significant effect on the whole economy of the given region.

This could lead to a profound crisis in the region (industrially depressed area, rising unemployment) and may hinder the long-term dynamic growth. Therefore, it would be expedient to change this one-sided industrial structure, and to the extent possible, strengthen the light industry and food sectors having significant tradition in the given counties.

- In the economically less developed regions (Southern Plain, Northern Plain region) it is still necessary to promote the establishment of competitive and dynamic industries and also the development of the existing ones in order to achieve a rational industrial structure.

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