

Industry

Hungarian industry, during its 150 year history, has witnessed numerous changes and has had to face many serious challenges. The political, social and economic circumstances have changed frequently, not only at a domestic level, but also on a global scale.

Industrialisation in Hungary started while it was still part of the Austro-Hungarian Monarchy, in the second half of the 19th century. Due to its rapid development, industry became an integral part of the economy by the early 1900s, with notable spatial characteristics. World War I disrupted this dynamic development, resulting in the disintegration of the Monarchy, the loss of previously Hungarian territories, a decline in population and many other consequences. Industrialisation continued between the two world wars, although at a slower rate, but became severely hit by World War II. From the onset of the socialist period, industrial development was characterised by a rapid and extensive growth, with an emphasis on heavy industry. During the somewhat hasty industrialisation, it was predominantly branches with a sufficient domestic supply of raw materials – mining and metallurgy – which grew. Starting in the early 1970s, the country saw an intensive phase of development, resulting in an improvement in the quality of products and a rise in technological standards. Despite this, a deep crisis beset the sector from the 1980s onwards, which was mirrored by the entire economy. The basic shortcomings of Hungarian industry had become evident (e.g. low technological capabilities, outdated product palette, poor quality of produce, etc.). Although there were attempts to overcome these towering difficulties, a decisive turn came only after 1989, following which Hungarian industry managed to overcome its backwardness, and integrated into the world economy. The main industrial branch is the machinery industry.

Despite the changes that had taken place in industry between 1989 and 2007, its position within

the overall economy has hardly changed over the past 20 years (*tables 33 and 34*).

Table 33. Selected indices of industry within the Hungarian economy (1990–2007)

Share of industry within (%)	1990	2007
Incorporated enterprises	21.0**	12.1
Employees	30.7	24.3
Enterprises with foreign interest	17.2*	13.3***
Investments	37.4	33.7
Gross domestic product	32.3	43.6
Export	83.2	60.5
Gross value added	29.1*	31.2

*1991, **1992, ***2006.

Source: Hungarian Statistical Yearbook, 1991, 1992, 2008, Regional Statistical Yearbook, 1990, 2008.

Table 34. Trends in Hungarian industry (1990–2007)

Indicators	1990	2007
Number of incorporated enterprises	14,105*	33,087
<i>of which are limited liability companies</i>	11,329	30,713
<i>of which are joint stock companies</i>	578	866
Number of enterprises with foreign interest	4,066**	3,441
Amount of all investments in industry (million HUF)	104,794	1,316,658
Number of enterprises with less than 50 employees	11,240	49,654
Number of enterprises with more than 250 employees	872***	517
Number of all employees	1,282,185	803,216
<i>of which occupied in the machinery industry</i>	421,554	273,304
<i>of which occupied in the light industry</i>	283,246	134,410
<i>of which occupied in the food industry</i>	198,890	110,890

*1992, **1994. ***Number of enterprises with more than 300 employees.

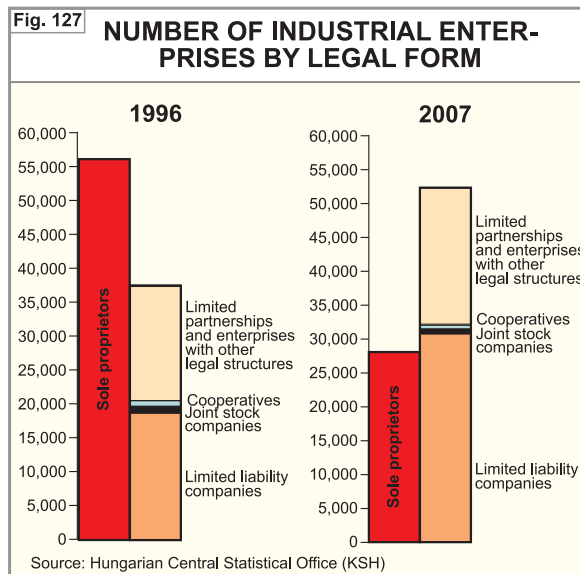
Sources: Hungarian Statistical Yearbook, 1990, 1992, 1994, 2008. Regional Statistical Yearbook 1990, 1998, 2008

Industry remains an important sector of the Hungarian economy, and this is unlikely to change in the near future, despite an anticipated decline owing to the current economic crisis. The significance of industry is indicated by the presence of numerous multinational companies which make up almost half of the top 500 companies in terms of net sales revenue, such as MOL, Audi, Nokia, Philips, GE, Suzuki, etc. They are also the country's top exporters.

The quick recovery and dynamic development of Hungarian industry has for a long time been seen as a success story in Central Europe. More recently growth has slowed and the former 'champion rider' could be seen as a lagman. At present Hungary is facing serious difficulties, which may have unpredictable consequences.

Organisational Forms and Company Size

Since 1989 the *circle of industrial actors* has widened due to the establishment of many new, mainly small enterprises, whilst most of the big companies that were utilising outdated technologies, have been closed. Currently more than 52,000 enterprises operate in industry, which accounts for around 10% of all ventures in the economy (Figure 127).



The most significant proportion of *industrial enterprises* (47%) can be found in Central Hungary. This is due to several factors, such as its central location, developed infrastructure, qualified labour force, large consumer market, huge capital concentration, more innovative population.

Not only have the number of industrial enterprises increased between 1990 and 2007, but also their *organisational form* has profoundly changed. At the beginning of the 1990s, the tra-

ditional organisational forms were replaced by new structures, better suited to their activities and the new challenges. Of them, the limited liability company (Kft.) is the most frequent. In fact, 59% of all industrial corporations and unincorporated enterprises have chosen this organisational form. This can be primarily explained by the relatively small initial capital that is required for its foundation and the absence of restrictions on who can establish one.

In the 1990s the *internal structure* of old state companies was also reorganised. The subsidiaries that were operating successfully became independent business units, at the same time the unprofitable units were shut down. The decrease of industrial sites has also contributed to the diminishing of organisational dependency, and thus, spatial dependency has also been reduced. The primate role of Budapest has somewhat decreased and the position of some county seats (e.g. Győr and Székesfehérvár) has strengthened, following the establishment of several company headquarters there.

The first half of the 1990s saw a marked shift in favour of small and medium sized enterprises, as the number of firms with less than 20 employees increased rapidly. As a consequence, a much more balanced and proportionate domestic structure of companies has emerged. By 2007, 95% of industrial enterprises had less than 50 employees, with a low amount and proportion of industrial enterprises employing more than 250 workers. This pattern shares strong similarities with those in developed countries, but domestic small industrial enterprises are still lagging behind them in terms of skills, technological assets and competitiveness.

Foreign Capital Investment

Foreign capital has played an active role in the *privatisation of industrial firms*. From 1989, 35–50% of annually invested foreign capital has been directed towards industry, where the established en-

terprises were fewer in number, but more capital-intensive than in any other sector of the economy.

In the first half of the 1990s, Hungarian industry proved to be highly attractive for for-

eign investors as Hungary was a country leading reform in the region. The political situation was stable, and the labour force was well qualified, but comparatively cheap. The number of enterprises with foreign interest increased rapidly, and their number exceeded 4,300 by 1997. However, by the end of the first decade of the 21st century, interest from abroad had dropped considerably. This is attributable to the global economic crisis and bleak domestic political outlook. Also of relevance is that the privatisation process has been completed, and rival East European countries have shown rapid development and are fast closing on both Hungary and ultimately, the West. As a consequence, the number of enterprises with foreign interest has diminished in almost all branches. In 2006 3,441 enterprises with foreign shareholders operated in Hungarian industry, representing 13% of such Hungarian enterprises. Most of them are already 100% foreign-owned. Between 1994 and 2006, the share of foreign capital had increased in all enterprises with pre-existing foreign interest.

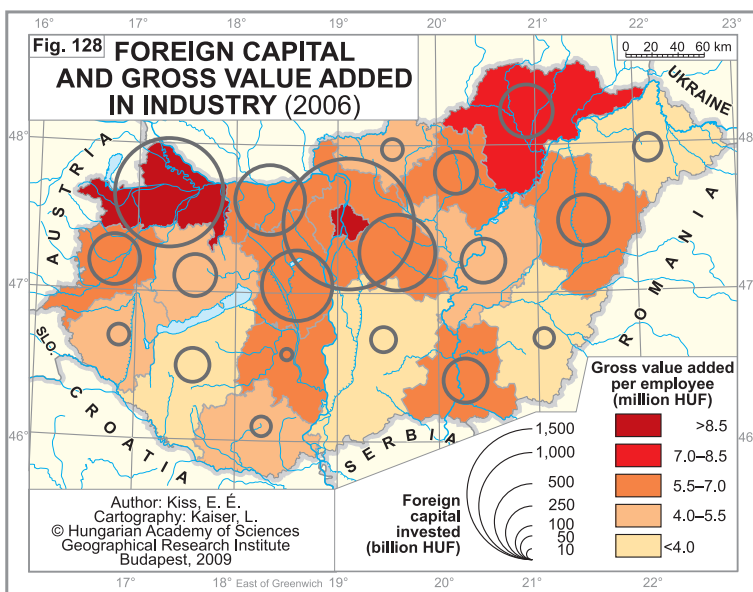
The most *important investors* are the Germans and Austrians, due to geographical proximity and historical relations. Investment by the Americans, Dutch, British, French and Swiss is also considerable. From Asian countries, the largest amount of capital arrived from Japan and South Korea.

Foreign capital has been invested primarily in engineering (electronics and car manufacturing), the chemical and food industries,

along with printing and publishing. Either new factories were established (e.g. in the case of the car industry) on greenfield sites, or existing industrial locations that were in a viable condition (e.g. in the food industry) were targeted. This kind of duality has also affected the spatial pattern of industry. The new enterprises were located mostly in the northern part of Transdanubia, where several subsidiaries of well-known automotive companies (Ford, Audi, Suzuki and Opel) were established, while the location of older industrial companies did not change.

Geographically, the *primary targets of foreign investment* were in Budapest and its environs. About 40% of enterprises with foreign interest can be found in this region, which is also where the bulk of foreign capital has been invested. North Transdanubia was another attractive region for foreign investors, because of its good transport links, a developed infrastructure, geographical proximity to export markets, a skilled labour force, and its knowledge of the German language, among others. These two regions together comprise almost one third of the country's territory, where 69% of enterprises with foreign interest are located, representing 76% of all foreign capital invested in industry. The apparent conclusion is that foreign capital is highly concentrated spatially and this has not changed over the past 20 years. The geographical distribution of foreign capital is an enduring phenomenon, which has led to spatial duality. Central Hungary and North Transdanubia are also the regions where the highest rates for gross value added per employee (in industry) are produced, as they are the most industrially developed parts of the country (Figure 128).

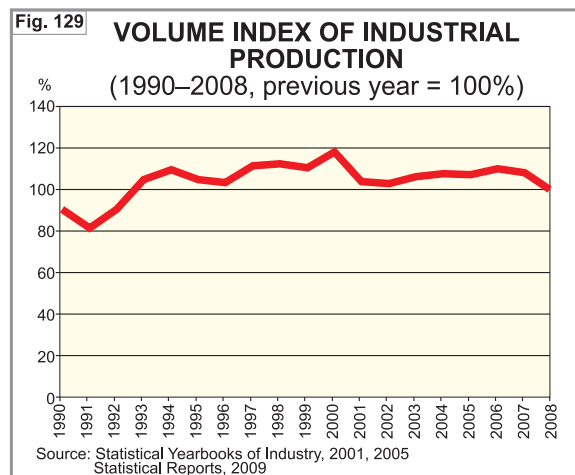
The influx of foreign capital has had significant and mostly favourable effects on Hungarian industry. It has contributed to industrial restructuring, a spatial transformation and to the modernisation of the sector. By 2007, more than 40% of industrial employees worked for enterprises with foreign interests, which is a high ratio when compared to other sectors of economy. Generally, industry has developed faster in the regions with a higher share of foreign investment.



Industrial Production

The passage of the past 20 years for industry is well represented by the *change in industrial output*. At the start of the 1990s, there was a considerable decline in industrial output followed by a slow recovery from 1993 onwards. In the second half of the 1990s, a dynamic increase could be observed, which lasted until 2001, after which industrial output grew at a lower rate (by 3–7%). However, over the course of 2008 it fell by 1.1% and even worse is that a further decrease in industrial output (by some 3–4%) is predicted for 2009. This is the direct consequence of the decrease in demand owing to the global economic crisis (*Figure 129*).

The change in industrial output indices, relative to 1989 (considered the base year), was similar across most of the *counties of Hungary*. The nadir was in 1992–1993, when industrial output had fallen to two thirds or a half of the base year's figure. After this, industrial output started to increase in each



county, but to different extent. Between 1989 and 2007, primarily due to considerable foreign investment, the increase in output was substantial in the counties of Komárom-Esztergom (12-fold), Fejér (6-fold), Győr-Moson-Sopron and Vas (4–4-fold).

Table 35. Output of principal manufactured products (1990–2007)

Products	1990	1995	2007
Crude steel (thousand tons)	2,963	1,865	2,317
Buses (units)	7,994	1,207	314
Television receivers (thousand)	492	274	9,696
Radio receivers (thousand)	66	2	2,368
Internal combustion engine for cars and motorcycles (units)	-	-	2,337,680*
Refrigerators and freezers for household purposes	438,228	-	2,909,786
Petrol (thousand tons)	2,606	2,356	1,394
Plastic basic materials (tons)	614,547	763,803	931,056
Nitrogenous fertilisers in active form (tons)	469,846	177,903	283,639*
Composition of plant protectives (tons)	55,982	19,427	8,486
Sawn wood from broad-leaved trees (thousand m ³)	24	102	261
Paper and cardboard (thousand tons)	443	316	117
Varnished wardrobes (thousand)	1,113	379	105
Footwear (thousand pairs)	24,306	11,401	6,610
Cotton and cotton-type fabrics (million m ²)	222	68	13
Pork on the bone (tons)	496,576	253,176	248,341
Slaughtered poultry (tons)	232,309	187,659	210,266
Salami (tons)	13,945	13,691	11,244
Sausages (tons)	40,024	33,432	42,057
Milk for consumption (thousand litres)	831,275	582,877	475,940
Butter (tons)	38,819	15,240	4,243
Flour (thousand tons)	1,249	1,234	769
Bread (thousand tons)	673	293	253
Sugar (thousand tons)	512	480	357*
Chocolate products (tons)	33,639	19,906	12,916
Wine from grapes (thousand litres)	169,192	99,230	168,758
Draught beers (thousand litres)	991,783	769,744	756,570

*2006, - Not available.

Source: Statistical Yearbooks of Hungary, 1995, 2007.

Komárom-Esztergom is the only county where industrial production has increased continuously between 1993 and 2007. Nokia and its local suppliers have played a key role in this. According to the most cautious estimates, Hungarian industrial output is set to increase again only after 2010.

The change in output of some of the products of the manufacturing industry between 1990 and 2007 is also a proper indicator of the general performance of Hungarian industry (Table 35).

Industrial Employment

In contrast to the number of industrial firms, which continuously increased after 1989, the number of industrial employees actually de-

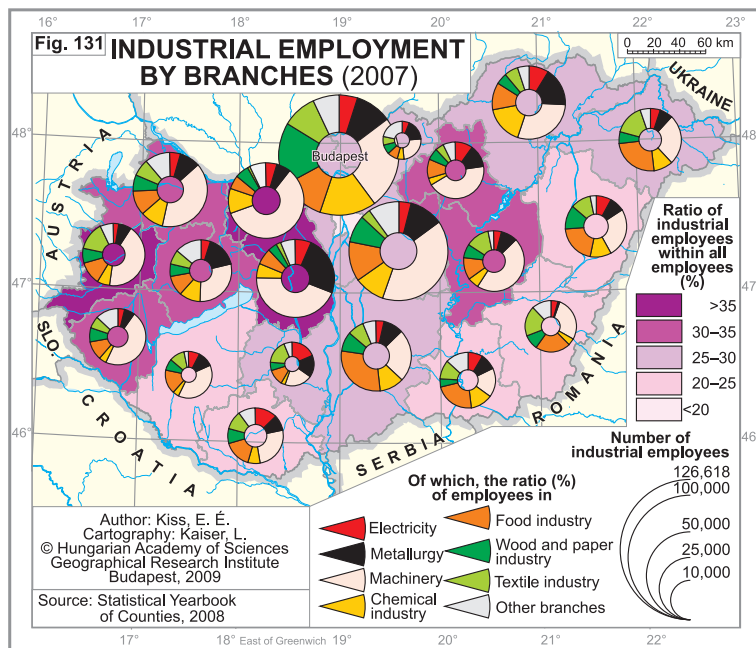
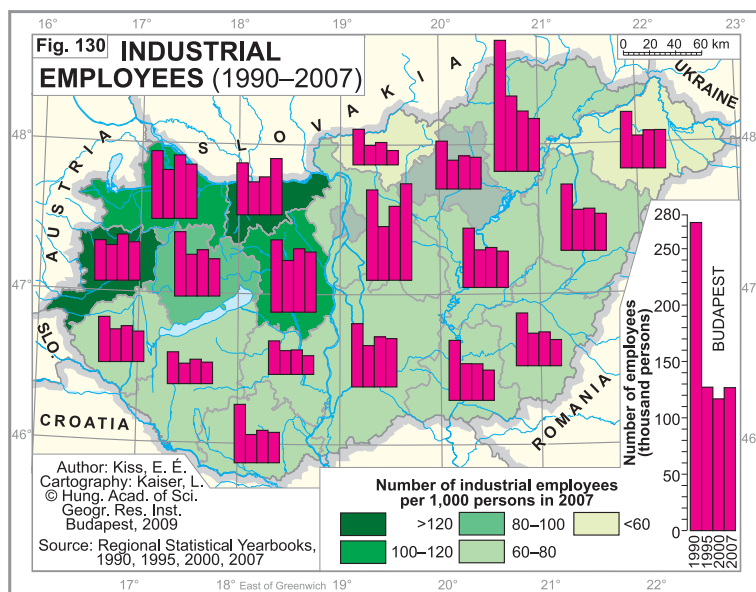
creased. In 1990, almost 1.3 million people worked in the sector, whilst by 1995 it only employed 750 thousand. Later their number began to increase and by 2007 it exceeded 800 thousand.

The decline shown by industrial employment was relatively modest in those counties where industrial production was increasing very rapidly. Thus, it is no accident that by 2007 the number of industrial employees per 1,000 persons was the highest in the northern part of Transdanubia (Figure 130).

Deindustrialisation was the most far advanced in the counties of Borsod-Abaúj-Zemplén, Nógrád and Baranya, along with Budapest, due to the collapse of local heavy industries, and a dynamic development of the service sector.

Since 1989, the number of employees in all *branches of industry* has considerably decreased. The sharpest drop – from 84,000 down to 5,000 persons – has taken place in the extraction industries, which can primarily be explained by the almost complete closure of ore and coal mining. Light industry, the food industry and to an extent the machinery industry has also lost a considerable part of their labour force.

Not only did the number of industrial employees decrease dramatically between 1990 and 2007, but their share within the employment market diminished, as well. In 1990, 40–50% of all employees worked in the industrial sector in each county, but by 2007 only



22–44% continued to be engaged in industry. The most radical decrease was experienced in Budapest, where the ratio of industrial employees fell from 43% to 13%. In spite of this, the concentration of industrial employees still remains the highest in the capital city (*Figure 131*).

In 2007 the *machinery industry* was the largest employer, representing 30% of all industrial employees. This branch has developed rapidly over the last decades due to new investments, particularly in the car industry and electronics. Currently, an overwhelming part of industrial employees work in the machinery industry in each county. The food industry, the manufacture of basic metals, along with the textile industry are also significant employers.

In 2007, the food industry employed the largest share of industrial workers in Bács-

Kiskun County (29%), as did textiles and electricity generation in Tolna County (18% and 19%), woodworking in Budapest (17%), chemicals in Borsod-Abaúj-Zemplén (17%), metalworking in Fejér (24%) and the machinery industry in Komárom-Esztergom (58%).

By the end of 2008, the *number of employees* engaged in industry had decreased by about 20–30 thousand, and in 2009 a further decline can be expected, owing to the unfavourable economic trends. The reduction has mostly affected the northern part of Transdanubia where consumer goods (cars, mobile phones, electronics, refrigerators, etc.) are mainly produced. Consequently, the current economic crisis has hit much harder the enterprises located in the developed industrial areas of the country than those in the less industrialised regions.

Structural Transformation

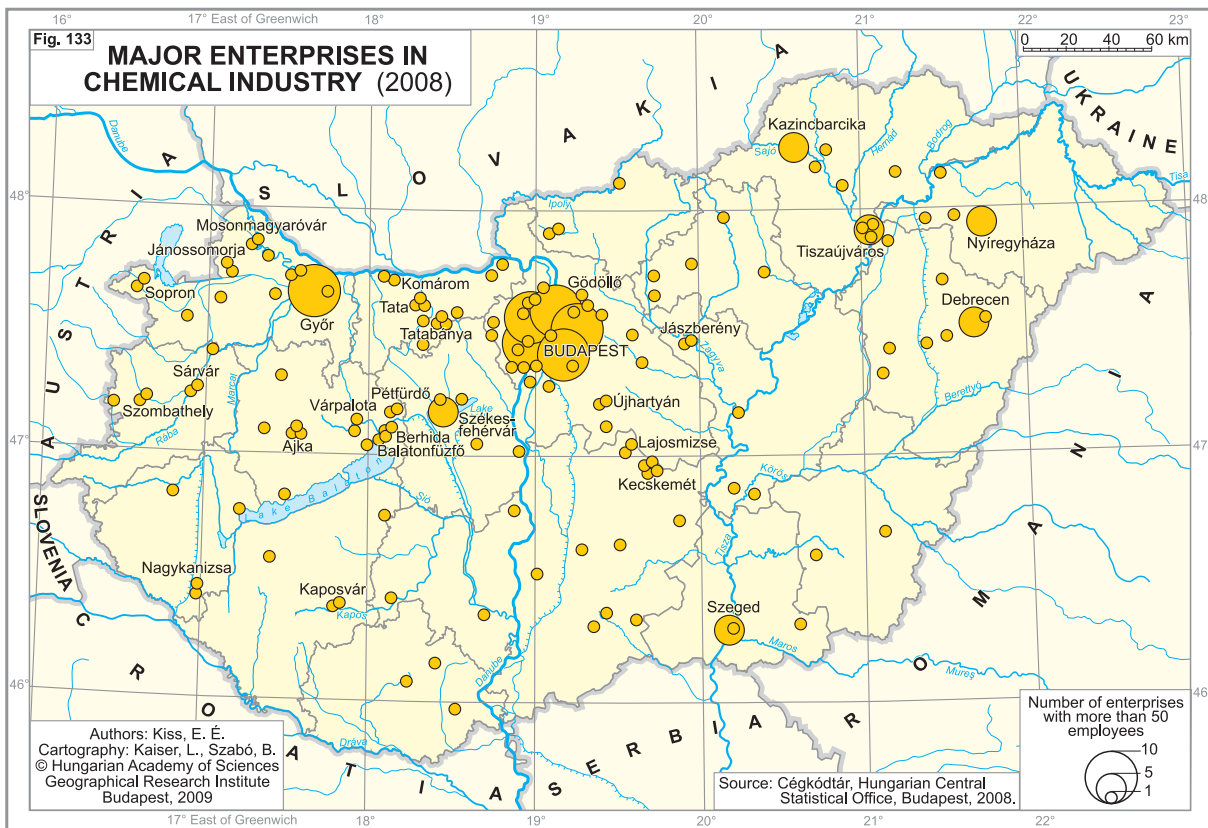
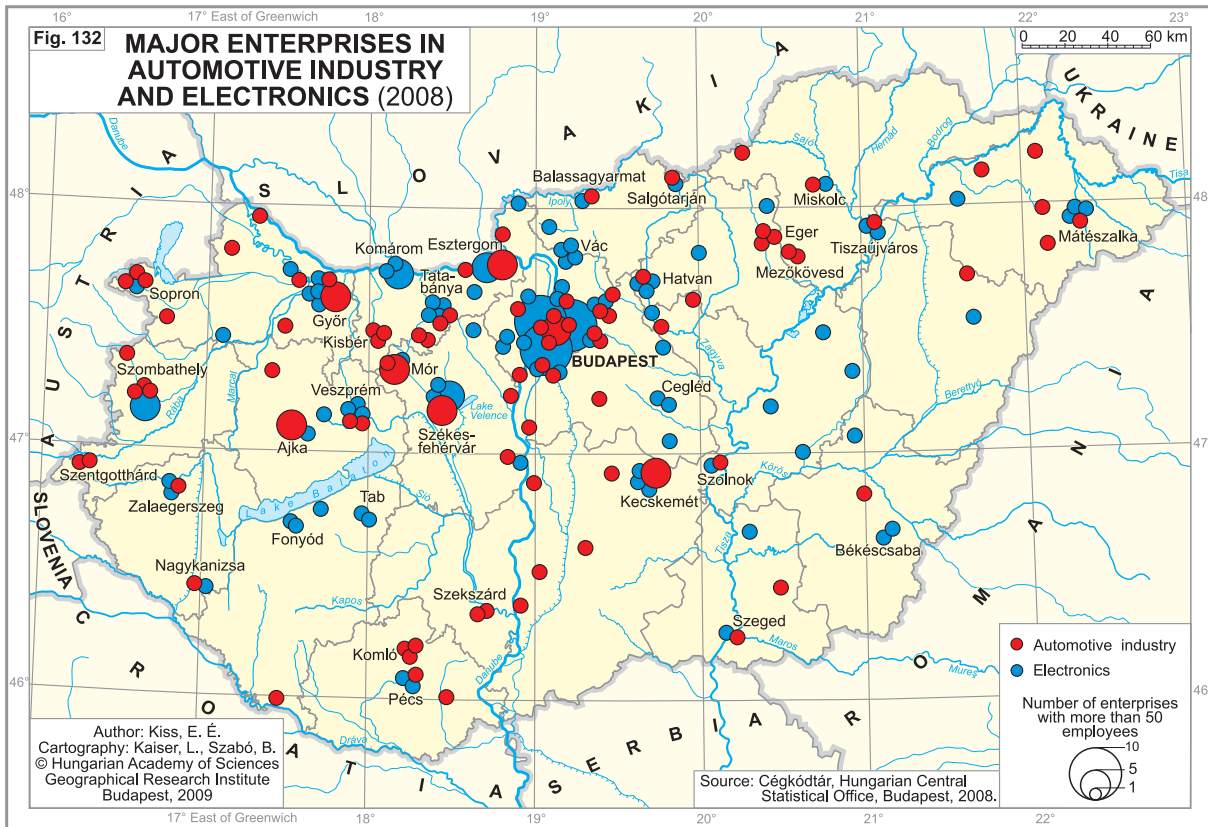
Over the last 20 years the structure of Hungarian industry has considerably changed, owing to a combination of different challenges: a crisis in traditional industrial branches; EU-membership resulting in new regulations and agricultural quotas; the emergence of the cheaper Asian and Eastern European labour force; increased competition; high taxes, etc. The relatively balanced branch structure of socialist industry has turned into a dominance of the *manufacture of machinery and equipment*. The emergence of the automotive industry and the fast development of *electronics* have greatly contributed to this. At present these branches are highly concentrated spatially, mostly in North Transdanubia. They also determine the spatial pattern of post-socialist industry (*Figure 132*).

The considerable decrease in the importance of *traditional heavy industrial branches* (mining and metallurgy), as well as other declining branches (textile and leather industries), have contributed to the structural transformation. Over the recent decades, several industrial branches (e.g. the manufacture of weapons and the photographic industry) have disappeared, or their divisions, as part of larger enterprises, were closed down. Before 1989, iron and steel

and aluminium industries were important within metallurgy. The latter has completely disappeared, and the former is now represented by a sole smelter, Dunafer located in Dunaújváros which has managed to continually adjust to the new challenges. The dramatic decline of iron and steel manufacturing can be explained by the decrease in domestic demand, the bankruptcy of the primary customers and by the availability of cheaper imports from surrounding countries.

Besides the machinery industry, certain branches of chemicals (rubber and pharmaceuticals) have developed more dynamically in the last decades. There was a high spatial concentration in the *chemical industry* already during the socialist period. This remained unchanged after 1989, as skilled labour is required and relocation for this branch would prove very costly. In 2008, 23% of all enterprises in the chemical industry with more than 50 employees were located in Budapest. Győr, Tiszaújváros, Debrecen, Szeged and Székesfehérvár are also important centres for the production of chemicals (*Figure 133*).

The *textile industry* is losing its battle against inexpensive Chinese imports (or even cheaper products from Thailand and Vietnam), not to speak of the rising costs of employing a



Hungarian labour force. This branch is struggling along in a permanent state of crisis. The majority of textile workshops with more than 50 employees are located in the countryside, where manpower is cheaper (Figure 134).

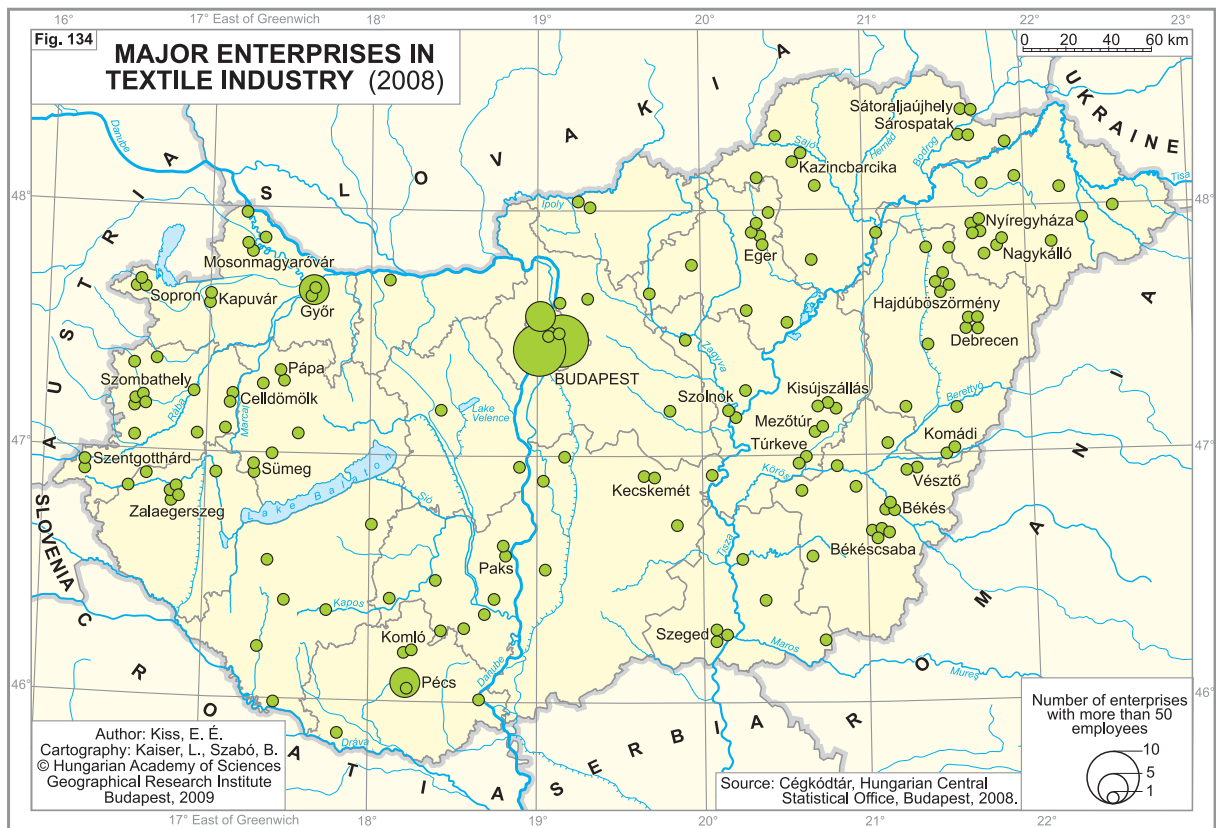
The domestic *manufacture of footwear* has also shrivelled, due to its cost base becoming uncompetitive, much the same as in developed western countries. Some of its remaining factories predominantly undertake subcontracted work for Austrian and German companies, and the bulk of the shoes are exported.

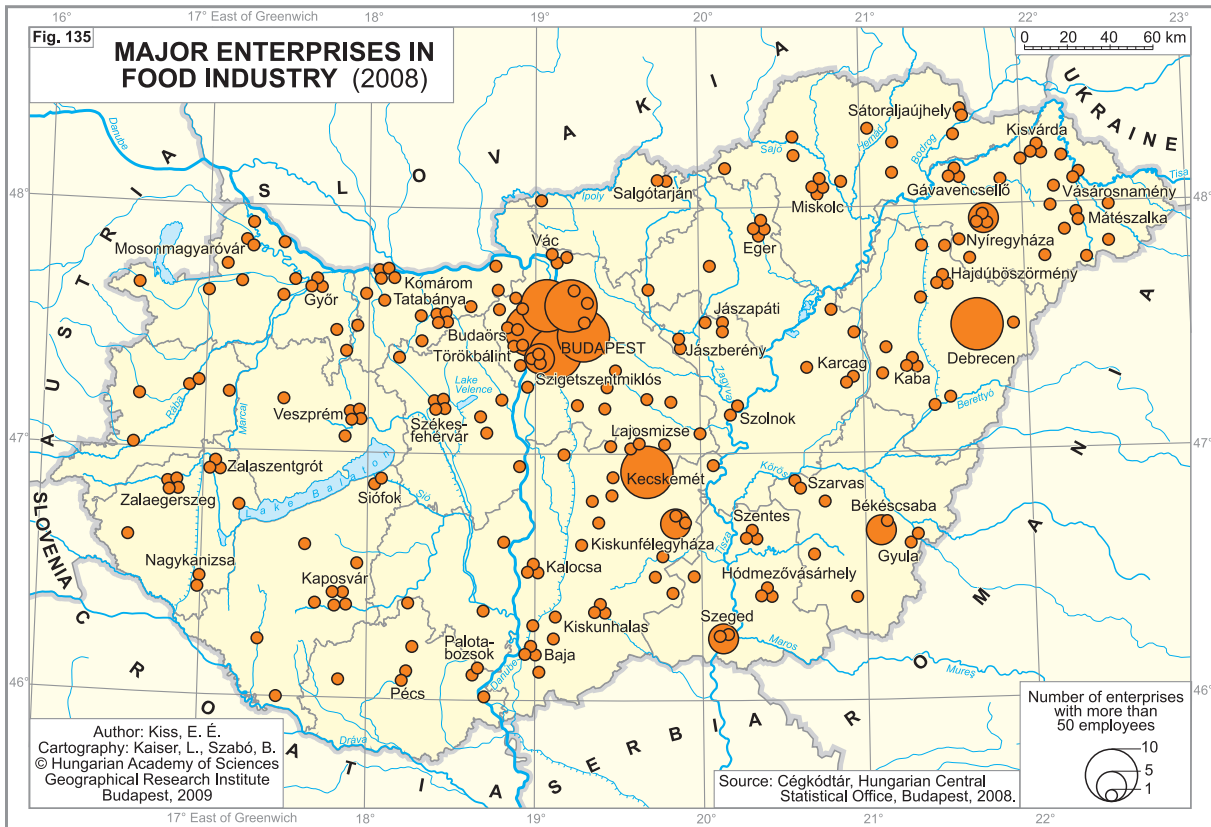
The *food industry* which was once a relatively successful branch, is now facing serious problems as well. Since 1989 the production of meat, milk, sugar, etc. has declined considerably for various reasons, among which are changing consumer habits, decreasing demand, increasing costs, structural and ownership changes in agriculture, lower availability of domestic raw materials, and low procurement prices. It is for the same reasons that Hungary has become a net food importer by 2008. The spatial distribution of the food industry is mainly balanced, but spatial concentration can nevertheless be observed, even though this is to a different degree. For example, during the socialist era 12 factories operated in the sugar industry and now there is

only one located in Kaposvár. Of the previously four large producers in the tobacco industry, only two have survived the changes post-1989. The food industry plays a significant role in employment and production, mainly on the Alföld (Great Hungarian Plain), where the bulk of its raw materials are produced (Figure 135).

In the 1990s, foreign investors in the machinery industry mainly founded assembly plants, which required a less qualified labour force. Lately, however, the magnitude of investment in R&D has increased. Several TNCs have established their research and development units (e.g. Nokia and GE), logistic bases or even regional headquarters in Hungary. The relocation of certain jobs abroad has structurally proven to be a positive change, as the relocations have mainly affected low-paid assembly workers. This has increased the pool of potential employees experienced in the machinery industries, able to undertake jobs requiring a higher degree of skill, in line with investment trends.

The structural transformation of industry has also resulted in a greater dependence on companies with foreign interest, and has increased the sector's exposure to global economic trends. The fate of each branch, especially in certain cases, is in the hands of larger parent

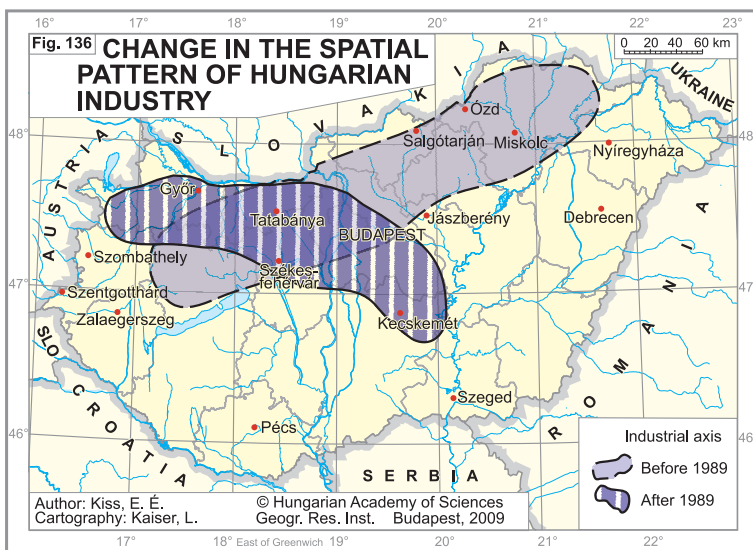




companies and activities frequently depend on decisions brought by foreign headquarters. As a whole, the structure of Hungarian industry has

become less multilateral and more harmonised with global processes.

Spatial Pattern and Industrial Parks



The new industrial – primarily foreign – enterprises, have greatly contributed to the transformation in the spatial pattern of industry. As the northern part of Transdanubia has become the major area of industrial production. Thus the former north-east–south-west industrial axis has been replaced by another one extending north-west–south-east (Figure 136). The region can be considered the ‘winner’ of the period since the change of regime. Besides the main new industrial areas, significant centres of manufacturing (e.g. Nyíregyháza and Jászberény) are notable only as ‘islands’.

The traditional regions of *heavy industry*, located in the mountains, suffered the heaviest toll after the regime change; they struggled with a serious crisis in the 1990s. Some of them (e.g. Tatabánya and Székesfehérvár) have managed to emerge, whilst others (e.g. Miskolc and Salgótarján) were very slow to recover. For example, Ózd can be still considered a 'ghost town'.

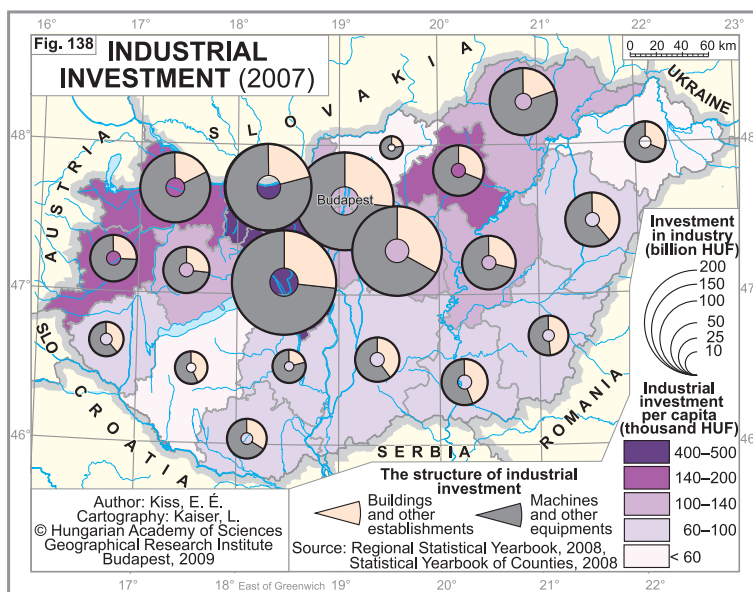
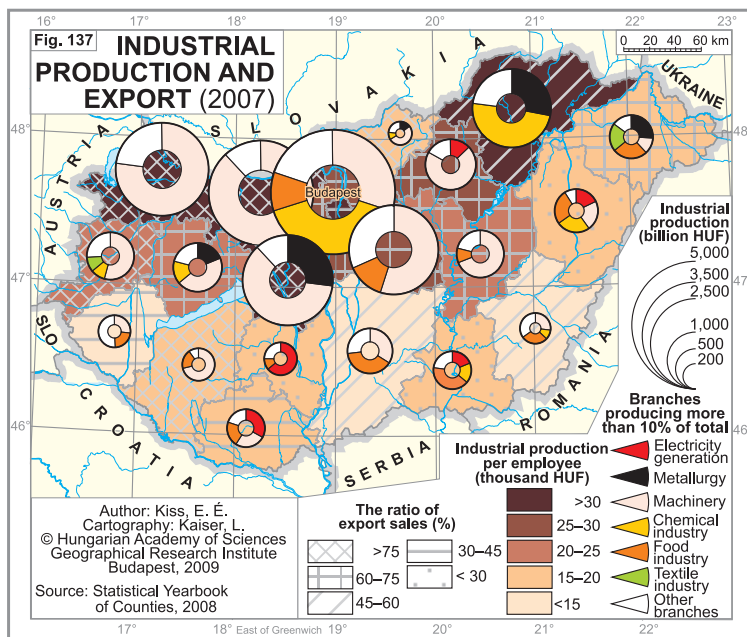
The situation of South Transdanubia and the Alföld is also unfavourable, owing to few industrial centres showing dynamism and swift adaptation to the new circumstances. The northern part of Transdanubia, together with Central Hungary has been the most important industrial areas of the country since the mid-1990s. In 2007,

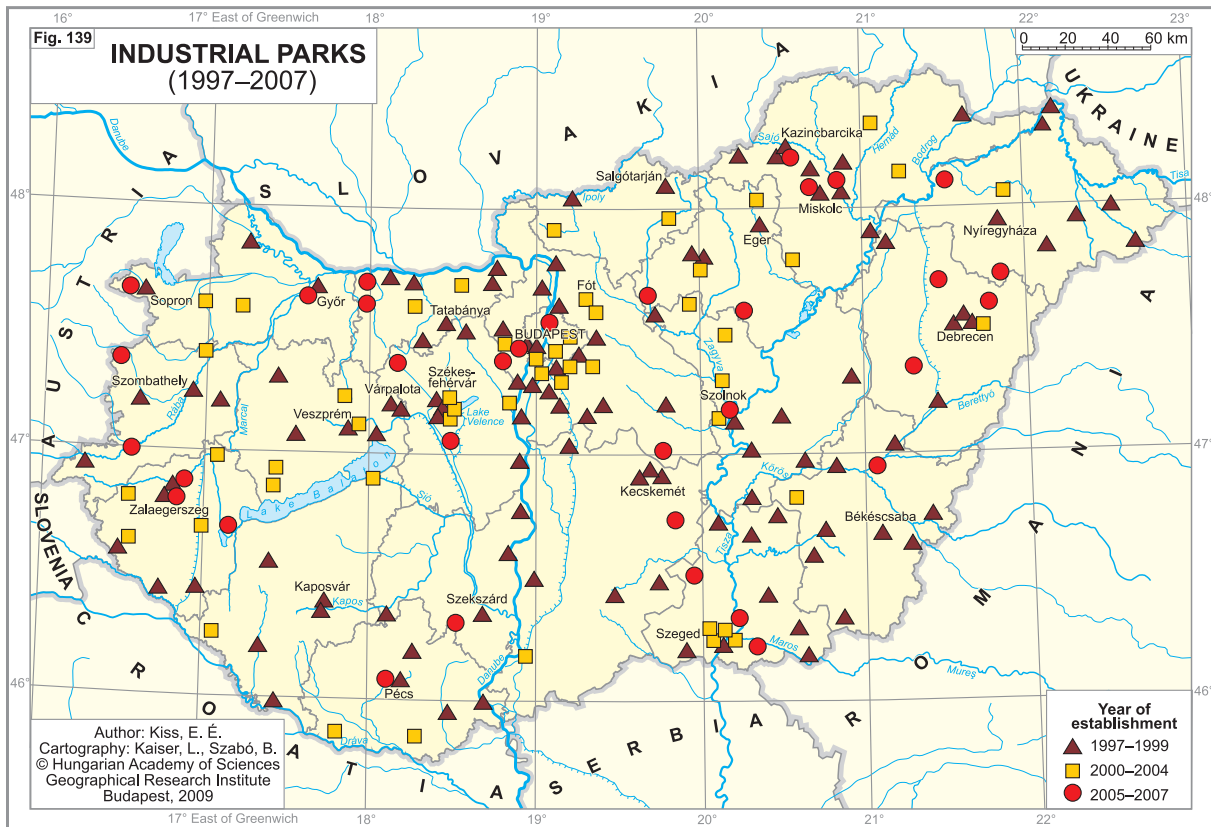
the value of industrial output per employee (HUF 28–67 million) and the share in exports (40–86%) were the highest in these regions. The firms located here manufacture goods primarily for the export markets and a significant quantity of their production is provided by the machinery industry (*Figure 137*).

During the last 20 years, the amount of *industrial investment* has continuously increased. The volume of this investment was again the highest in the new manufacturing regions. This is reflected in the amount of industrial investment per capita. In 2007, its value was the highest (HUF 461 thousands) in Fejér County, and the lowest in Nógrád County (HUF

45 thousands). At the beginning of the 1990s, the majority of investment was dedicated to the construction of new industrial facilities or for refurbishing the old ones. However, from the end of the decade, generally 60–80% of investment was spent on the purchase of machinery and other equipment (*Figure 138*).

Many *industrial parks* can be found in the new industrial region. They are mostly the oldest and most developed, and concentrate lots of enterprises with foreign interests. By 2008, 198 industrial parks had been established in Hungary. Generally, they are an urban phenomenon; less than one tenth of them are to be found in villages (*Figure 139*). Industrial parks are very important for many reasons and not only on a regional level, but also for the local economy. In 2006, almost 3,200 industrial enterprises were located on industrial parks, where 23% of all industrial employees or 186 thousand persons worked. Their total area extended to 10 thousand hectares, 53% of which was occupied. This relatively limited occupancy rate can be explained by the over-supply of industrial parks, providing potential investors a wide of array of choice when decide where to locate. Industrial parks offer a good base for the establishment of clusters, but as of today the visibility of clusters in manufacturing is





yet not significant. Most (64%) of manufacturing clusters are concentrated in the northern part of Transdanubia.

The magnitude of vertical and horizontal connections between companies belonging to the same, or different branch, can play an important role in shaping the industrial space in the future. However, the global economic crisis that

emerged in the second half of 2008 may affect Hungarian industry very sensitively. Branches that are particularly affected by the crisis may have a strongly modifying impact upon the structure of, and spatial patterns visible in domestic industry. For this reason, a new era may be dawning on Hungarian industry.