

## **MISKOLC – A CENTRAL AND EASTERN EUROPEAN CITY IN THE CROSSROADS**

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### **Abstract**

The main objective of this study is to present the overarching history of a second-tier city (Miskolc, Hungary) in Central and Eastern Europe from its foundation to the current era and beyond, to the plans for the next EU programming period between 2021–2027. The city has been in the crossroads of industries, cultures, borders, innovations and EU programming periods throughout its history. Our basic hypothesis was that with the overarching but systematically structured analysis and presentation of the history of the city, we can define its main development stages and gain deeper insights in the roots of the present and future tendencies. Thus, we studied and synthesized the literature about the history of the city and identified six phases in its development path based on two main aspects (1) geopolitics and legal status and (2) local economy and society. With a strong focus on the 20<sup>th</sup> century, we summarized the main tendencies and city forming forces, actors and catalysts, and also identified some critical points. Finally, the determining and newest initiative for the next EU programming period between 2021–2027 is introduced (Creative Region), that is expected to shape the future of the examined city and its region. Some conclusions are presented in the last chapter of the study.

Keywords: large cities, development path, Central and Eastern Europe

### **INTRODUCTION**

„Miskolc is the Hungarian city with the brightest future ...  
There is such vitality in this city, that if the smallest opportunity opens for it, enormous  
energies will start to operate”  
(Zsigmond Móricz, 1930)

The main objective of this study is to present the overarching history of a second-tier city in Central and Eastern Europe from its foundation to the current era and beyond, to the plans for the next EU programming period between 2021–2027. Mid-size cities and their agglomerations (and city-regions) have been in the focus of Cohesion Policy between 2014–2020 already, with a focus shift from ‘Europe of the Regions’ to ‘Europe of the City-regions’.

Miskolc is a typical example of a Central and Eastern European city that has experienced through its history all global tendencies and major shocks starting from an oppidum, through the privileged free royal city status to municipal law rights, prioritized beneficiary of socialist

industrialisation and soon after one of the main industrial crisis zones of the county to depression, pathfinding, slow recovery and repositioning in our days. Our basic hypothesis was that with the overarching but systematically structured analysis and presentation of the history of the city, we can define its main development stages and gain deeper insights in the roots of the present and future tendencies. As a provincialist born and raised in Miskolc, the author not only aims to provide a transparent overview of the city's development path until today, but also to generate common thinking about the possible future scenarios of Miskolc and so many similar cities.

## **THEORETICAL BACKGROUND**

The history of Miskolc stems from the prehistoric age. The territory of the current settlement was already inhabited in the prehistoric age, according to the relics of human communities from 60-70 thousand years ago. Additionally, Miskolc has an outstandingly important role in the birth of the Hungarian prehistoric archaeology, through the works of Ottó Herman at the end of the 19<sup>th</sup> century. There is a major geographic reason why mankind has been continuously present in this area; Miskolc is situated in the junction of the Great Plain and the Bükk Mountains in a 20 km long valley. Three types of relief can be found in its area, dolomitic mountains, hill-country formed by the sea and terrestrial sedimental and volcanic rocks (Avas), and plain countryside (bordered by Sajó river and streams arriving from the mountains such as Szinva, Hejő and Bódva). These were good preconditions for both crop production (especially graveyards) and animal husbandry. Thus, the area of Miskolc has been a North-East Hungarian target location for the continuous migrations of historic ages.

On the other hand, the constructed environment of the oppidum was formulated by three large firestorms in 1746, 1781 and 1843 and a huge flooding in 1878, when the downtown of the city was almost totally destroyed by the water from the streams arriving from the Bükk Mountains. This catastrophe forced the elaboration of urban regulations and spatial planning. The road network of the city was formulated in the Middle Ages, only the significance of the specific roads has been changed from that time. Before the establishment of Greater Miskolc (1945/1950), the area of the city was much smaller and more homogenous, from that time the city has become the inheritor of districts with different historical roots (mainly separate agrarian villages). Regarding the founding of the city, the founding documents are not available, but the Clan Miskoucz was mentioned at first in a degree dated in 1236, while the Benedictine Abbey in Tapolca was first mentioned in 1214 (Kubinyi, 1996). With the lack of

the founding documents, the City Day is celebrated on 11 May every year, that is the date of the royal charter about the municipal right, obtained in 1907. In the following, we summarize the main development stages of Miskolc.

### PRESENTATION OF THE SURVEYED AREA

Miskolc is the capital city of Borsod-Abaúj-Zemplén county. It has a direct motorway connection (M3 and M30 finalised in 2002–2004) and fast track connection to Budapest (1.5 hours), two regional centres (Debrecen and Kosice) and two county capitals (Eger and Nyíregyháza) within 100 km distance. The new section of M30 will establish the direct road connection between Miskolc and Kosice also (57 kms to be finalized in 2021).

**Figure 1** Logistic Situation of Miskolc

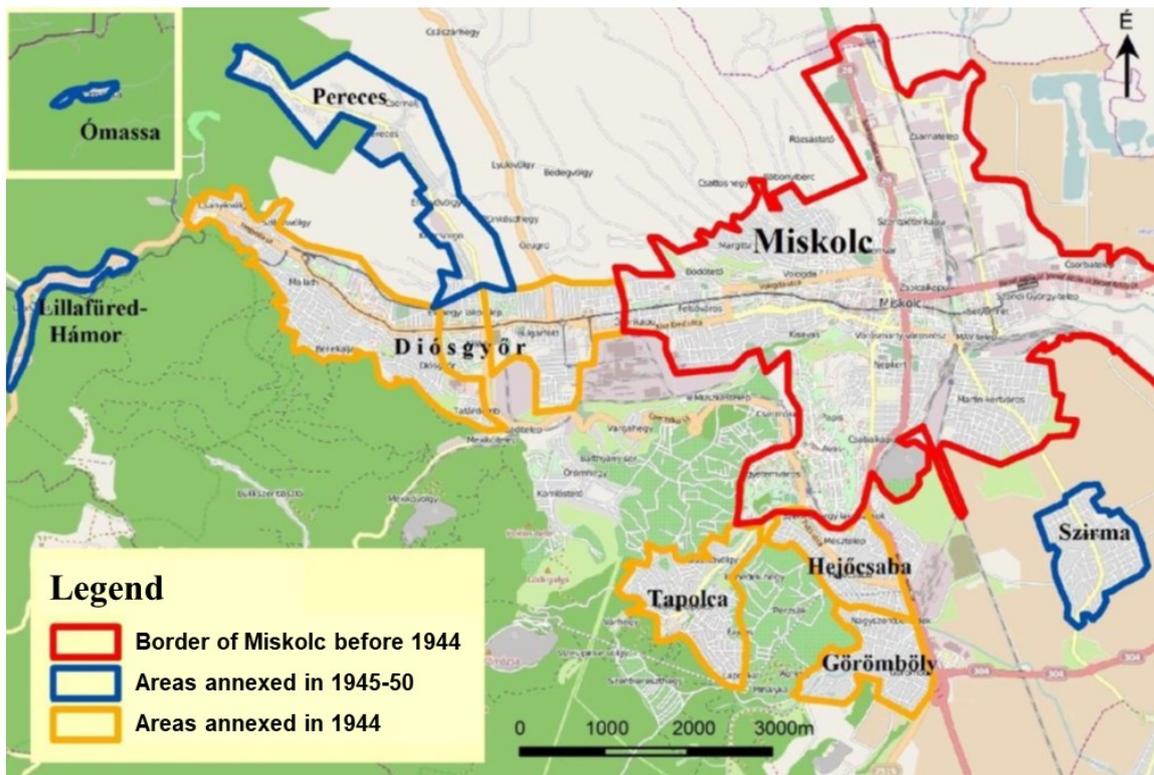


Source: Miskolc Integrated Settlement Development Strategy, Annexes, 2013

‘As a whole, it is not an exaggeration to talk about an agglomeration-functional city-region with 300–350,000 inhabitants, in which connections in the economy, vocational training, services and R&D&I could be multi-layered and mutual and in which Miskolc plays the (junction and organizer) role of a significant ‘HUB’ (Miskolc SUMP, 2016). The administrative border of the 20<sup>th</sup> century city (236.6 km<sup>2</sup>) was finalized in 1982 with the annexing of Bükkszentlászló, when the number of inhabitants of Miskolc exceeded 210,000

with an additional more than 32,00 daily commuters, so the daylight population of the city was almost a quarter million that positioned Miskolc as the second largest city in Hungary. In 1950, four districts were designated in the city as follows: (1) historical Miskolc, (2) new Miskolc with the ironworks colony and Pereces, (3) historical Diósgyőr, Hámor, Csanyik-valley, Lillafüred, Ómassa and (4) the eastern and southern parts of the city (Szirma, Hejőcsaba, Görömböly, Tapolca).

**Figure 2** Administrative Borders of Miskolc and the Annexed Areas



Source: Nagy Zs. 2013, based on [www.tajertektar.hu](http://www.tajertektar.hu).

The following table summarises the name and last known population number of the settlements annexed to Miskolc, together with the date of the annexing.

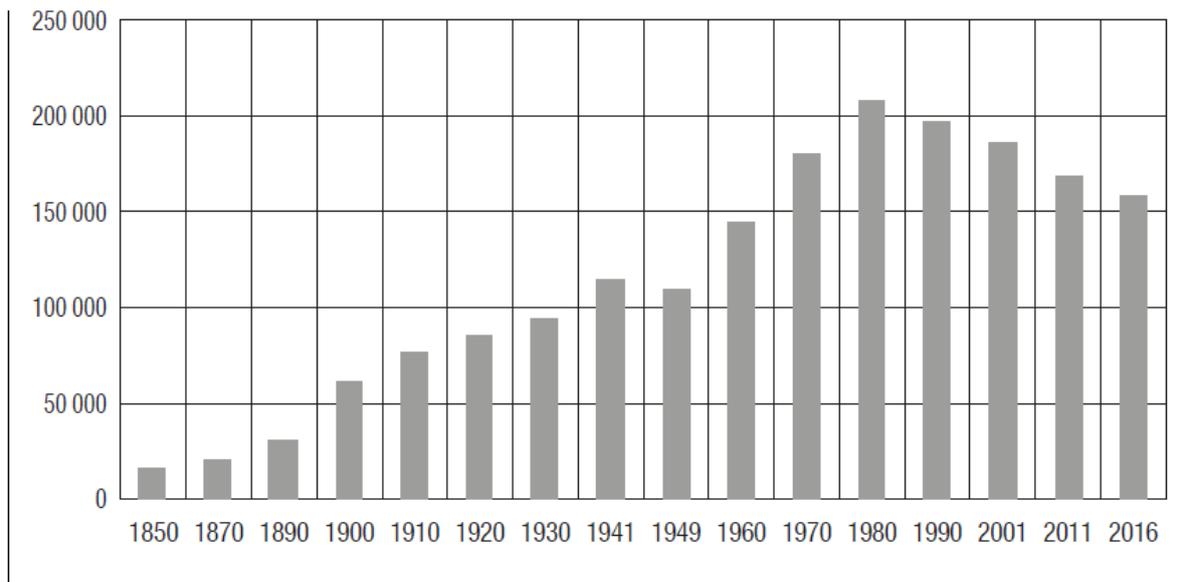
**Table 1** The Settlements Annexed to Miskolc with the Last Known Separate Population

Settlement name	Year of annexing	Local population number (person)
Diósgyőr (Perecessel)	1945	26.530
Hejőcsaba	1945	5.036
Görömböly (with Görömbölytapolca)	1950	2.845
Hámor (Lillafüred, Ómassa, Újmassa)	1950	1.030
Szirma	1950	1.899

Source: Municipality of Miskolc City of County Rank

The population of the city shows a decreasing tendency that is fuelled by significant suburbanization and migration. In the development of Miskolc in the 20<sup>th</sup> century, the county capital functions (administrative, commercial, health, vocational, ...) are of decisive importance, additionally to industrial development. The same tendencies can be observed in the development processes from state socialism to dependent market economies in case of other regional centres in Central and Eastern Europe (Rácz, 2019).

**Figure 3** Population of Miskolc between 1850 and 2016



Source: Lóránt (2017) based on data from the Hungarian Central Statistical Office

## RESULTS AND DISCUSSION

Based on the literature studied during the research, we divided the development path of Miskolc into six stages, out of which three covers the period before the twentieth century and the other three includes the last 120 years from 1900 to our days. We separated the stages based on the ever changing geopolitical situation, administrative role and functions, with special emphasis on the 20<sup>th</sup> century and our era.

### The Development Stages of Miskolc before the 20<sup>th</sup> Century

This era can be divided into the following three main stages (1) the oppidum status, (2) the era of pledges and Ottoman thralldom and (3) the fight for separateness.

Following the downfall of the clans, in the framework of a property exchange, Louis the Great (or Louis I) acquired Miskolc, and from 1365 the city received more and more

privileges together with the oppidum status. The strategic importance of Diósgyőr has been further strengthened, as it was located exactly halfway between the two royal centres, Buda and Krakow.

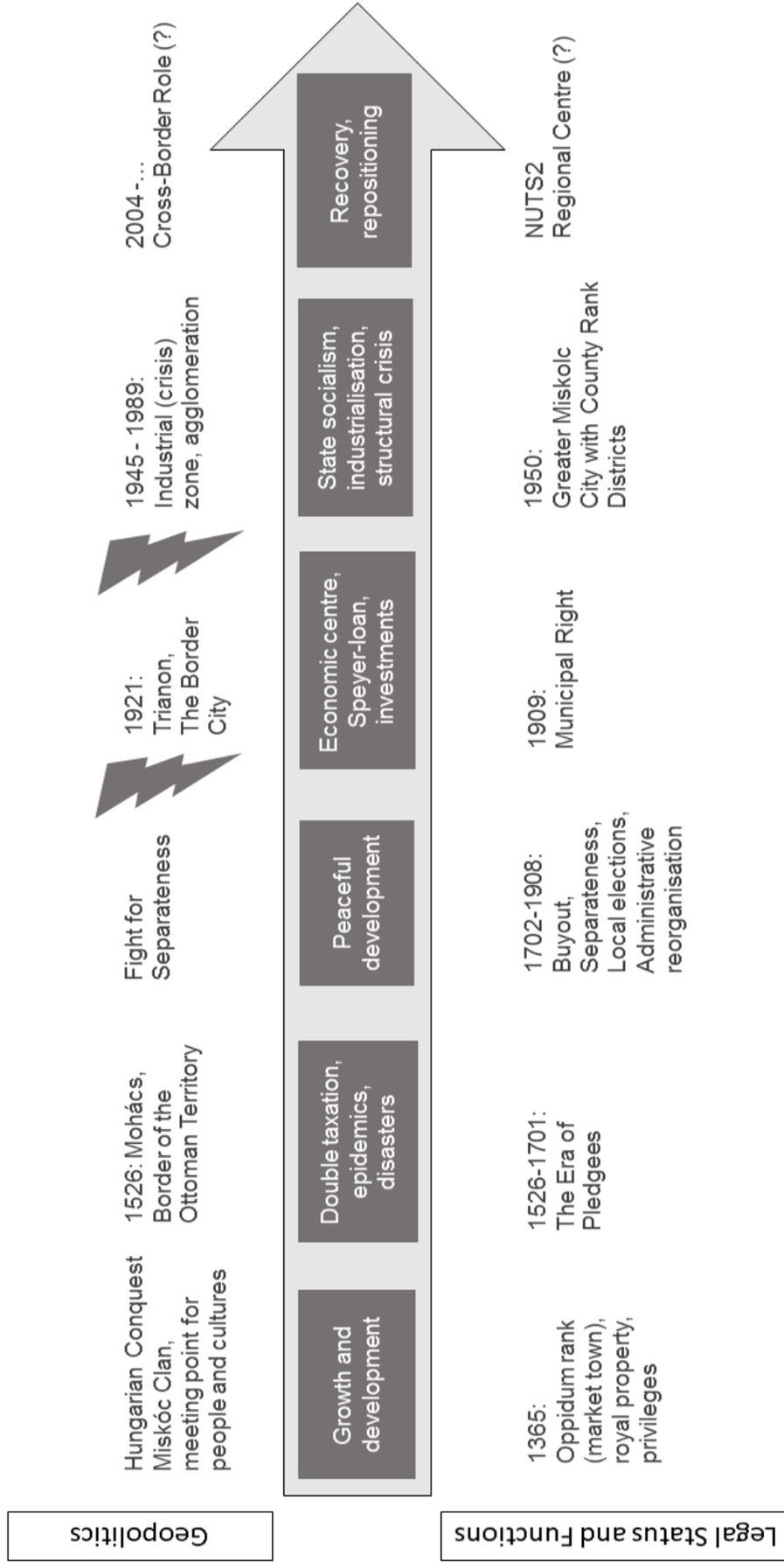
As a starting of the next stage (1526–1701), the parliament (witenagemot) in 1514 labelled all royal assets as royal demesne, so Diósgyőr Castle and the connected lordship (including Miskolc!) remained a wedding gift to the queen until 1526. From this date, pledgees directed Miskolc for 80 years and this period was characterized by stagnation, increasing tax burdens, epidemics and other disasters (1672: firestorm, 1679: plague, 1691: flood). The battle of Mohács (1526) and the defeat divided Hungary into three parts that has also changed the geopolitical situation of the city: Miskolc became a border city. The situation was even worse, as although Miskolc belonged to ‘Royal Hungary’, the Turks also claimed the area, especially the taxes it paid. Thus, Miskolc has become an area under double taxation and a target of continuous pillages. Finally, after the knocking out of the Turks, the city as a community bought itself out from landlord charges in 1702 (Szakály, 1998).

During the last era before the 20<sup>th</sup> century, a totally new period has begun marked by the fight for separateness (1702–1908). The annual local government elections have been introduced and more and more administrative functions were completed locally. The preparations for free royal town status have also begun and there was a mixture of the elements of operation as oppidum and free royal town. This process was interrupted by the war of independence, and after the Austro-Hungarian Compromise of 1867 – that strengthened the counties – Miskolc found itself under the supervision of the county.

As regards the local economy, wine-trade was the most important and reputed activity of the city and the region from the Middle Ages onwards. Until the 1870s–1880s, Miskolc had been a commercial city with significant agrarian functions, but after these years rapid industrialization has been started, especially with coal mining upgrading to industrial scale (in the Szinva Valley, Csanyik, Pereces, Lyukó in particular and in the whole Borsod Valley). An important event of industrial heritage has to be highlighted at this point: ironmaking emerged in 1870 in Diósgyőr, that determined the development of Miskolc for long-long decades.

In these years, the population growth of the city was also accelerated, and the city underwent a dynamic development process directed by its excellent leaders, Palóczy, Szemere, Lévy, Herman, Horváth, amongst others. Some specific examples of the completed actions are the construction of a stone theatre in a wide partnership, where actors were playing in Hungarian language (as the first Hungarian city in the current administrative country borders), it established the regional centre of the Hungarian Academy of Science, it launched

**Figure 4** The Main Stages of the Development Path of Miskolc based on Geopolitics, Legal Status and Functions



Source: own compilation, 2019

a musical education system, and organized tram transport as the first Hungarian city in the countryside.

Around the turn of the century, more and more industrial plants began their operation in- and outside the city, but massive industrialization did not start before the first years of the 20<sup>th</sup> century. In these years, the formerly dominant agricultural production lost its primacy over commerce and rapidly developing industry. Thematic fairs took over the place of traditional national sales and weekly markets, and these thematic fairs (especially for wheat, malting barley and cotton) were considered as the most important fairs of Upper-Hungary (Veres, 2003). Public transport and transfer penetrated into everyday life with the appearance of railway (1870: handover of the railway between Budapest and Miskolc), which further strengthened the central position of Miskolc, as trains arrived and departed from three directions – making Miskolc the gate of the highlands.

As a summary, we can state that by the turn of the 20<sup>th</sup> century Miskolc had lost its feudal bonds, and separated from the Diósgyőr lordship and the county, embarking on its own development path. As this process was completed merely in a few decades following the Compromise, our hypothesis is that the intellectual potential has been long present in the city, waiting for the best moment to discover and exploit the latent resources of the city in an innovative way.

The fight for separateness of Miskolc was terminated in 1907, when the house of representatives accepted its request for municipal law. This title resulted in positive tendencies and the strengthening of local patriotism also.

## **The Development Stages of Miskolc in the 20<sup>th</sup> Century**

### ***Miskolc the Border City, the Regional Capital and the Second Largest City of Hungary***

The role of Miskolc has completely changed after the Treaty of Trianon. Following the Compromise (1867), there have been two major central cities in North-East Hungary, Kosice and Miskolc, that have been rivals for quite a while. This situation was immediately and fundamentally changed by the decision in Trianon. The disannexing of Kosice did not only end the rivalry, but also positioned Miskolc as the capital of the region from one day to another. For this reason, from this time on, the all-time leaders of the city set a new objective: the establishment of Greater Miskolc.

Figure 5 The Main Stages of the Development of the Local Economy in Miskolc



Source: own compilation, 2019

In this period, Miskolc was also labelled as the centre of the Hungarian Ruhr area, or the capital of Upper Hungary. The Bethlen Government and the American Speyer-loan had a significant role in the uprise of Miskolc, as a specific example, the Palace Hotel in Lillafüred was built from this loan and established the area as the social centre of the 1930s. The relationship between the city and the county has also progressed (as demonstrated by the publication of an urban development concept entitled Greater Miskolc in Borsod Country).

Miskolc undertook more and larger responsibilities in administrative issues of national importance also, for example when the reform of territorial governance was born in 1929, the city organized the cultural congress of the cities east from the Danube, and as a result, the Cultural Alliance of the Hungarian (Rural) Cities was formed in Miskolc also.

Several factories have been established in the city, the most important facilities were the brick- and furniture factories, the cloth-mills, the two engineering (machine) works, the steam-mill and the car-shops plant connected to the railway. By 1920, the past due works of the sewage and water pipe network had been started (that consumed a significant part of the Speyer loan) and 30-35% of the population of the city was working in the local industry. Although the explosive development of the city in the first decades of the 20<sup>th</sup> century was concentrated at the outskirts of the town (outside the administrative border, for example the siderurgy in Diósgyőr and the coal-mining in Pereces), it influenced the life, social structure, and the composition of the population to a large extent. At this point, it is important to highlight that the site where the operation of the factory began was part of the administratively independent Diósgyőr of that time, so the plant was established in an unbuilt area between Miskolc and Diósgyőr, as a real ‘greenfield investment’ in the recent terminology.

Scientists, economists, lawyers and politicians were working together on the concept that mostly compared the regional role of Miskolc to that of Budapest, and regularly published and negotiated its conclusions even in the year of the war with the widest possible public audience. This long preparatory work was fruitful, as Greater Miskolc was born on 1 January 1945 based on the resolution of the National Committee of Miskolc.

During the second World War the city suffered significant casualties and its social structure has changed, for example the loss of almost 4/5 of its Jewish community resulted in a major diminution of the city’s former commercial and civilian character after 1945.

### ***The Era of State Socialism: The Flourishing Industrial City and the Collapse***

After World War II, the construction of socialism was immediately started, in parallel to the recovery, although the framework of civil development has barely evolved. It triggered a fundamental transformation of the administrative system and a shift to centrally planned (command) economy. As a result, in the 1950s, the city's population of about 100,000 increased with more than 70,000 in six years!

Due to the fast industrial development measures in the 1950s (including the establishment of the Cement- and Lime Works in Hejőcsaba, the Miskolc Refrigeration Company and the Borsod County Dairy Factory, the continuous development of the Lenin Metallurgical Works (LKM), and the separation of the Diósgyőr Machine Works (DIGÉP)), the city has once again become a major target location for immigration, not for the first time in its history. As a direct consequence, with the increasing number and ratio of immigrants, the former commercial-civilian character of the city has been progressively transformed to an industrial-worker character. Miskolc has lost its civilian traditions and the immigrants from small rural settlements could hardly accommodate to the urban environment. This tendency has determined the milieu, culture and façade of the city also for a long period. Localism, that has been so strong previously in Miskolc, took a back seat.

Although the fast transformation during socialism was very attractive to inmoving workers, it influenced the reputation of the city in a negative way at the same time; the image of the city with a great cultural heritage has been transformed in public thinking into an industrial centre with all its disadvantageous attributes, such as dirty, unhealthy (poor air quality) and uncultured. The emblematic Avas Mountain of the city has become prey to the vast and rapid housing estate projects, completed from brick with traditional technology initially, but followed by panel technology from the 1960s. One of the country's largest panel residential districts was constructed in Miskolc during this period, called Southern Avas District.

Some positive features of the dynamic development were the advanced educational system, the child protection of national reputation, the well-developed health and social network, and finally, in the early 1950s, a long-awaited dream of the city has also come true: the Technical University of Heavy Industry was constructed, forming furnace-, mechanic- and mining engineers for the region.

From the 1950s to the 1980s, Miskolc was characterized by a flourishing industrial city era, while 18,000 workers were employed in several shifts in the two large factories in Diósgyőr (Diósgyőr Machine Works and Lenin Metallurgical Works).

On the other hand, from the late 1980s, thunder clouds began to appear in the form of decreased order numbers, and people could feel that the phenomenon of unemployment (last experienced before WWII) could return...

The main tendencies were the following:

- unstable population of the city (large absorption but small retention capacity);
- replacement and downscaling of the population (loss of qualified workforce and inmoving of low-skilled workers);
- self-catalysing character of the above tendencies aggravated by the rigid, one-sided and low-efficiency nature of the economy (Dobrossy, 2002).

Fuelled by the global economic changes, an erosion of the local economy and society has begun that resulted in large-scale unemployment and exodus of the population from Miskolc to other parts of Hungary. Miskolc has become one of the major industrial crisis areas of Hungary. More detailed analysis of this era can be studied in some recent essays (see, e.g., Lóránt, 2017; Drótos, Lóránt, 2016; Józsa, 2019) together with the description of similar urban tendencies in the transition period with a wider (for example Central and Eastern European) geographical scope (Hajdú, Horeczki, & Rácz, 2017).

### ***From the Change of Regime to Our Days – The Early-Birds and the Main Economic Actors***

Starting from the change of regime, several international companies have selected Miskolc as a location site for their production activities, although with a decade-long delay compared to the Western part of the country. In parallel to these inter- and multinational companies, numerous Hungarian-owned small- and medium-sized companies have been operating in the city also. The city's economy could be characterized as diverse, in sectoral terms, with mainly first- and second-level (Tier-1 and Tier-2) supplier companies.

One of the first international companies, the Japanese Shinwa (manufacturing plastic components and solutions, and recently electronic devices also for automotive industry) settled in the city in 1998, and was followed first by the power tool division of Robert Bosch company group (Robert Bosch Power Tool Kft.) in 2001, and later the automotive division (Robert Bosch Energy and Body Systems Kft.) in 2003. In our days, more than a hundred development engineers are working at these two companies, the number of employees exceeds 5,000 and the companies perform continuous investment projects, introduce Industry4.0 solutions, operate corporate training workshop, and play an active role in dual

vocational training and higher education, cooperative research and development activities mainly with the University of Miskolc (Józsa, 2014).

SEG Automotive (Starters E-Components Generators Automotive Hungary Kft.) has been operating as a separate entity in Miskolc from 2018, owned by the Chinese Zhengzhou Coal Mining Machinery Group Co. and an investor company that had formerly purchased the global starter engine and generator division of Robert Bosch group. The location in Miskolc not only manufactures starter engines and generators but also includes a corporate research and development centre in the field.

As local companies, we can mention the MINE-SCREEN Kft., Mirelite Mirsa Zrt., Star-Plus Kft., and Fux Zrt., (without being exhaustive) that have completed significant investment projects in the last years in Miskolc, and the companies settled in and operating in the so-called Mechatronics Industrial Park (Mechapark), one of the flagship projects of the Technopolis Competitiveness Pole Program (co-financed by the European Structural Funds), such as WET WIPE Kft., Gustav Wolf Miskolci Drótygár Kft., SeM-KER Kereskedelmi Kft., Aventis Consult Üzleti Tanácsadó Kft., VIZI & CO. Építőipari és Kereskedelmi Kft., and the Toolstyle Kft.

As the latest achievements, Joyson Safety Systems (formerly: Takata) was settled to the Miskolc Southern Industrial Park in 2014 and constructed its 60,000 m<sup>2</sup> production capacity, using solely geothermal energy for heating, within 10 months. In its neighbourhood, Hungarian-owned Spinto Hungária Kft. completed an investment project of HUF 5.9 billion (EUR 18 million) and started its operation in 2018. The latest large companies to settle down in the city are the Japanese battery producer, GS Yuasa and the Chinese Chervon Auto, producing automotive components for both traditional and electric vehicles. The fact that these are both supplier companies further strengthens the presence of Tier-1 and Tier-2 level suppliers in Miskolc, but also the position of the automotive sector in the city's economy. All of the latest industry settlements have been greenfield investments in the Southern part of the city (see more details below under the presentation of the industrial parks).

As regards service sector, the ICT giant Vodafone Magyarország Zrt. has to be highlighted with its regional Shared Service Centre project in 2009, creating 300 new employment opportunities in the first step and an additional 240 in the second. Finally, PannErgy Geotermikus Erőművek Zrt. should be mentioned also, as a company operating in energy industry, completing a flagship geothermal project of primary significance to the energy supply of the city.

These companies jointly have a major influence on the local economy, but none of them could generate this impact separately, contrary to other large Hungarian cities where OEMs (Original Equipment Manufacturers, for example vehicle and/or engine producers) operate. If we examine the main location (localization) factors in the case of Miskolc, we can identify some general, common elements, such as industrial heritage, traditions, educational background, culture, well-skilled workforce, good transport connections, but also point out some specific features per company, for example the highly-educated and foreign language-speaking young graduates and the availability of ‘A’ category office space (Macropolis) for Vodafone, the outstanding air quality and clarity in Csanyik-Walley for healthcare-industry player Sanofi, or the continuously widening and deepening level of corporate embeddedness in case of the reinvestment decisions of the Bosch companies and S.E.G.A (Józsa, 2019).

As a final sectoral aspect, it is important to highlight the role of tourism in the local economy, with a dynamically increasing importance. This can be followed in both absolute and relative terms (compared to other county capitals), as the number of guest nights in commercial accommodation establishments have doubled (from 200,000 to 400,000) between 2010–2017, positioning Miskolc at the fourth place in the list of cities with county rank in Hungary. This tendency is fuelled by the large development projects completed in the last 15 years in the main touristic locations of the city (e.g.: Lillafüred, Tapolca, Diósgyőr Castle, historical city centre). Lastly, as a horizontal issue, speaking of the last two decades we also have to highlight the significant amount of state aids arriving to Hungary, and more specifically to the region and the city, in the form of non-refundable cash subsidies (grants) and financial instruments also. These incentives and financial resources had (and still have) a major role not only in the renewal of the city and its built heritage, but also in the increased competitiveness and continuous development of local companies (for more detailed results on the effects of public funds on enterprises in Hungary, see Nyikos-Béres-Laposa, 2020).

### ***Industrial Parks, Industrial and Business Infrastructure***

As industrial parks and areas are the main infrastructural tools of local economic development (Egyed, 2012), it is of major importance to all settlements which kind of sites – preferably greenfield areas – could be designated for the purposes of both new industry settlement projects and the reinvestments of existing economic actors. In case of Miskolc, this factor has had an even higher significance in the last decades for two reasons; firstly, because the city possesses extensive brownfield areas on the ruins of the collapsed metallurgy (almost 200

hectares, out of which 45 hectares as DIGÉP site)<sup>1</sup>, and secondly, because up to 2008, the city had been located in the circle of greenfield industrial parks and areas (for example Alsózsolca, Felsőzsolca, Szikszó, Sajóbáony) that absorbed potential investors, with the lack of an own greenfield industrial area, or a dedicated industrial park (maybe uniquely from the Hungarian cities with county rank). The breakthrough, the city's first own greenfield industrial park (Mechatronics Industrial Park, or Mechapark) was developed in the framework of the Technopolis Competitiveness Pole Program between 2006–2008.

At the moment, there are three industrial parks and one industrial area in municipal ownership, the Miskolc Industrial Park (MIP) in the Northern part of the city (including the Mechapark), the Miskolc Southern Industrial Park (MIDIP), and the new industrial area of 1000 hectares that was nominated as part of the Modern Cities Program (Rechnitzer-Berkes-Filep, 2019), the so-called Miskolc Eastern Industrial Area. Additionally, a private-owned industrial park (20 ha) is also operating in the city, on the revitalized area of the former metallurgical spoil-bank that has a railway side-track also, the Európa Center Miskolc Business and Logistic Park. The latest initiative of the city is to formulate a new industrial area on the former airport with sport function, that could be connected to the Mechapark.

### ***Business Networks, Clusters***

Two major accredited clusters are operating in Miskolc and its region, one in the field of automotive industry and the other in the field of information and communication technologies (ICT). The North Hungarian Automotive Cluster (NOHAC) was established at the end of 2006, by three leading supplier companies, the Chamber of Commerce of Boorsod-Abaúj-Zemplén county and the Innovation Management and Cooperative Research Centre of the University of Miskolc. At the moment, NOHAC has 77 members (NOHAC, 2020), including manufacturing-, design-, certifying- and other service-related companies. Both Bosch companies in Miskolc are members of the cluster and its current president is the director of the Robert Bosch power tool factory.

The North Hungarian Informatics Cluster (Infocluster) was established in 2007 by five companies, in our days the cluster has 41 members (Infoklaszter, 2020). The member companies also accomplish research and development activities.

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<sup>1</sup>Function change of brownfield areas is still hampered by the fact that they are extensively polluted, densely built-in, unaccessible by roads ('cities in the city'), and the municipality does not have (dominant) ownership in these areas. Even in the case of DIGÉP site, only utilisation was solved, but not rehabilitation.

The third large segment of the city's economy, tourism and culture, is represented by the Miskolc Cultural Cluster (kultMIX) and the Miskolc Gastro Cluster, as one of the latest and most colourful players.

### ***Innovative Forces and Energies***

The city has always been well-known for its musical education and choir culture. The renowned Hungarian Symphony Orchestra Miskolc was established in 1963, and several cultural events and festivals of national and international reputation have been hosted by the City, for example the Kaláka folkfestival, the Bartók+ Opera Festival, the Dixieland, or the Jelly Festival in wintertime. From the 2000s, the city focused on the 'Culture Builds the City' slogan and was a finalist on the national round of the European Capital of Culture competition in 2010 (second place after Pécs). In connection to the International Dance Day, Miskolc Ballet was formed on 28 April, 2013 (and operates as part of the Miskolc National Theatre).

The Technical University of Heavy Industry established in 1949 has been operating under the name of University of Miskolc from 1990, and the organizational integration completed in the 2000/2001 school year has positioned it as a real 'universitas'. The institution that was well-known formerly from its traditionally industry-related and legal educational profiles, has acquired new faculties enriching its portfolio. These new educational profiles are for example arts-, teacher-, musician- and other humanities type trainings but economic as well. The University of Miskolc plays a decisive role in the life of Miskolc and Borsod-Abaúj-Zemplén county, and recently signed a cooperation agreement with CERN (European Council for Nuclear Research, or Conseil Européen pour la Recherche Nucléaire in French original) based in Ghent valid until 2038<sup>2</sup>. The Engineering and Intelligent Systems Divisions of Bay Zoltán Nonprofit Ltd. for Applied Research are also operating in Miskolc. As good examples of local innovative companies, Admatis Kft. could also be mentioned that is a cooperation partner and supplier of NASA, the European Space Agency and Airbus, together with IND Group that provides ICT solutions for the banking industry and was purchased by the American Misys in 2014 for HUF 18 billion (Bitport, 2014).

### ***Cooperations in the field of Research and Development and Innovation (RDI)***

The University of Miskolc has been completing several RDI projects in cooperation with business partners, of which the Higher Education and Industry Cooperation Centre (FIEK)

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<sup>2</sup>The cooperation focuses on the development and testing of superconductor components of the next generation hadron collider.

project in the field of Advanced Materials and Intelligent Technologies is an outstanding example. The results of RDI activities are directly transferred into curricula (for e.g.: BSc, MSc, PhD and adult education), further increasing the role of corporate departments, for example Chemical Technology Department (Wanhua-BorsodChem) and Robert Bosch department of Mechatronics (FIEK, 2018). Additionally to these, it is important to mention the collaborative research projects co-financed by ESIF (European Structural and Investment Funds) funds coordinated by the cooperating industrial partners, from which five received positive decision between 2015–2018 and have been launched with the allocation of a HUF 4.5 billion non-refundable cash state aid.<sup>3</sup>

### ***Inclusive and Supportive Local Business Environment***

Miskolc has always been a welcoming host environment for merchants, craftsmen, producers and other actors of the economy, although recovery from the collapse of heavy industry required more than a decade. Even in the 2000s, heated debates were generated among local leaders on the need to construct a greenfield industrial park in the city. The general public opinion was that the rehabilitation of brownfield areas was more necessary, and these areas were the main sites of foreign direct investment (FDI) support activities coordinated and operated at the national level. For this reason, the Technopolis Competitiveness Pole Programme – and the development of the Mechatronics Industrial Park in particular – was a real milestone and was of outstanding importance. In this respect, the changing attitude of local decision-makers, but also benchmarking activities conducted with other (competing?) cities, mapping of international good practices, advanced cooperation with the national level, sectoral ministries and policies, (re)strengthening of local partnerships, identity and patriotism played a part.

Local economic development activities by the local municipality were launched in parallel to the establishment of Miskolc Holding Zrt., based on international and national good practices with the addition of some institutional innovations also (for example that of Debrecen city, the major difference being that economic development was not included among the activities of the asset management company).

The first step was strategic programming, namely the development of the Technopolis Strategy based on a wide partnership, in a bottom-up process, including a project matrix as

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<sup>3</sup>Out of which two are connected to e-mobility (for one project Robert Bosch Energy and Body Systems Kft. is the project consortium leader), one to health industry, one to services (ICT, call center and one to bank informatics).

well. The main identified objectives were (i) modern infrastructure tailored to investors' needs, (ii) efficient, coordinated local organization and business-friendly environment, (iii) cooperative local partnership, (iv) international visibility (Józsa & Nagy, 2013).

As a second step, the Local Economic Development (LED) Office was established in 2007, with a detailed action plan for the forthcoming years. The third step included operationalization of the projects in the strategy, in the following order:

- development of 'hard' infrastructure (Mechatronics Industrial Park, direct motorway connection, application for the title of Miskolc Southern Industrial Park);
- development of 'soft' infrastructure (one-stop-shop, FDI promotion activities, management of flagship investment projects, red-tape reduction measures in local administration and public services, local FDI support regulation<sup>4</sup>);
- development of local partnership (coordination, role of local hero and catalyst, Technopolis Coordinative Committee, annual conferences, investor roundtables, information days, FDI aftercare, benchmarking activities, supplier- and other database development);
- achievement of international visibility (repositioning, new marketing tools, international competitions, e.g. Financial Times FDI competition (2008), European Enterprise Award (2009), umbrella brand, multilingual FDI promotion materials, joint representation on international conferences and fairs with large companies operating in Miskolc).

The success of the local economic development system was well-illustrated by the industry settlement and reinvesting decisions, such as the new industrial hall of Robert Bosch (2008), the settling of Vodafone and Patec (2009), and the first investors in the Mechapark. These important investment decisions were made in the period of the global economic and financial crisis, in a distressed and resourceless era. From the 2010s onwards, several more investment projects have been completed in the city (as presented above), and regarding the most recent years, the technology-intensive reinvestment decisions of the two Bosch companies and the settlement of Lufthansa Technik's service centre (planned opening in 2022) should be mentioned.

### ***City-forming Energies, the Catalysts of Transformation***

At the end of the 1980s, the city turned back to its forgotten values, and the reconstruction of the historical city centre and the renewal of the cultural institutions were started. The early

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<sup>4</sup>This was strengthened and supported by the General block exemption Regulation (800/2008/EC) of the European Commission on temporary state aids because of the global financial and economic crisis.

1990s opened a new chapter in urban planning and development, although these historical years also brought a great deal of uncertainties in local governance; the disintegration of the former social systems and coordinating mechanisms were accompanied with a frequently changing legal-regulatory background and waning governmental financial resources.

The decade following the change of regime was mostly marked by the belief that the city's traditional heavy industry – that secured steady living conditions for the citizens – could still be resurrected. This was supported by local decision-makers also, as they delayed the recognition that Miskolc needed new visions – a part of its history was closed and now something new should begin. Thus, only the second decade after the change of regime brought the insight that the city should be repositioned.

As a result, in the 2000s, the new city marketing was focused on the outstanding cultural heritage of the city, on its beautiful districts (Lillafüred, Tapolca, Diósgyőr and the historical city centre), natural environment and untapped potentials – instead of industry. A new city slogan was introduced: Miskolc – the City of Open Gates, that expressed the well-known friendly and welcoming attitude of Miskolc citizens. The completed investment projects also showed that the city imagined its future on a new development path that focused on mechatronics, automotive industry, ICT, energy industry and tourism. The development process continued in the 2010s, and the city committed itself to becoming a 'smart city' through its several international cooperation projects as well. Some completed flagship projects are the beach in Tapolca, the Green Arrow tramway reconstruction project, the purchasing of CNG buses, the geothermal energy project, the TIMI application, the passenger information system, the digitalization of waste transport, the wifi connection and LED walls in public spaces, the availability of two urban 'open data' platforms, the GIS-based geoinformatics development project and the digital community project (that provided 17,000 notebooks for local citizens free of charge). Public safety is significantly advanced, and the local economy strengthened as reflected in increasing local taxes paid by local actors.

As seen from the above, several city forming energies are operating in the city at both the institutional and individual level. On the other hand, despite the positive tendencies, their interconnections and mutually beneficial, strengthening, synergetic effects are still very limited. The separate smaller communities of a higher education institution, a large company, the leading art, educational, administrative and other institutions do not form a local, settlement level community, thus local identity in Miskolc could be evaluated as weak, compared to other county capitals in Hungary (to a large extent due to historical causes presented previously). Currently – and starting from the change of regime – the

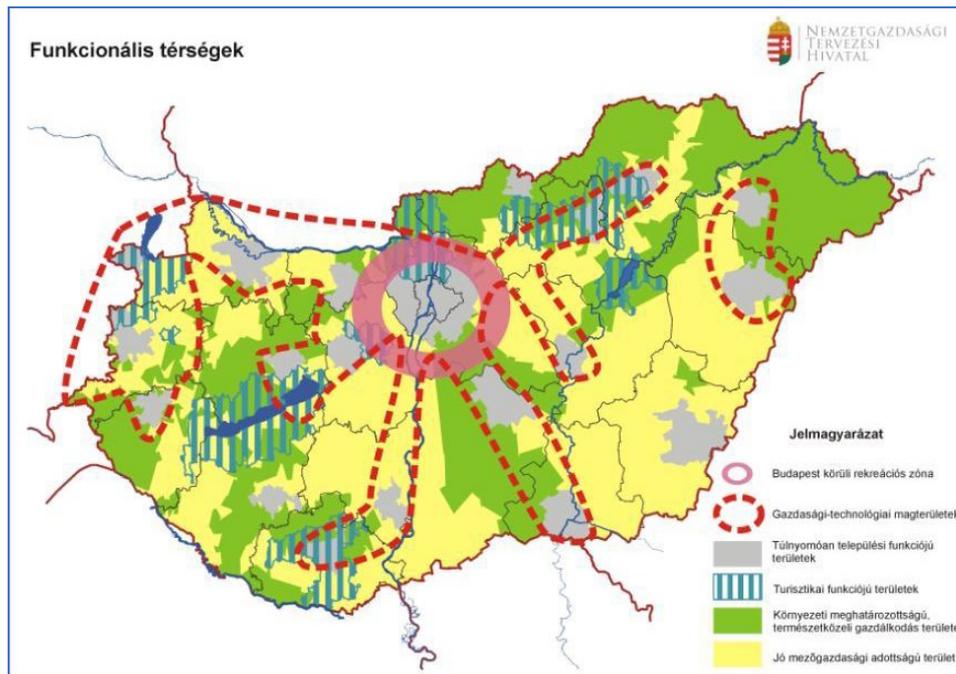
transformation of Miskolc has been coordinated and fuelled by the settled/settling foreign direct investors and the leading local institutions presented above, in parallel to each other, joining their forces only on an ad-hoc basis, for the sake of a separate project, but not at a systemic level, in strategic cooperations. The joining of these separate high intellectual level potentials, and the institutionalization of the cooperations, the forming of a regular platform, efficient and sustainable partnerships and lobby towards the national government are still tasks for the future.

### **The Creative Region Initiative**

The aim of the „Creative Region – Development without borders in Northeast Hungary National, Economic and Cultural Zone” program is to create a single economic, educational and cultural zone of Northeast Hungary (the counties of Borsod-Abaúj-Zemplén, Hajdú-Bihar, Jász-Nagykun-Szolnok and Szabolcs-Szatmár-Bereg) and the cross-border areas. In March 2020, the mayors of the concerned cities (Miskolc, Debrecen, Nyíregyháza, and Szolnok) agreed on a workshop (moderated by the Minister for Innovation and Technology) on the common goals of increased attractiveness for citizens and competitiveness for businesses, together with infrastructural, economic and cultural development. The mayors emphasized that they plan to implement synergetic and cross-border development projects in the next EU programming period (2021–2027). Thematic working groups have been established in the framework of the Coordination Forum, as follows: (1) social innovation, (2) infrastructure, (3) competitiveness, (4) development of the cities of county rank, (5) involvement of cross-border areas. The preparation phase will continue according to the original schedule and with due regard to available local and EU resources.

The National Development 2030 (National Development and Territorial Development Concept) contains the future spatial structure that formed the basis of the Creative Region development programme. The spatial structure vision outlines so-called functional areas (Figure 6), where specific zones of national importance could be developed for economic, social and/or environmental functions/tasks. In the concept, the necessity of new aspects, such as investment stimulating spatial structure (especially the establishment of attractive locational conditions) are specified, additionally to the reduction of territorial imbalances and inequalities in social and economic development. The Debrecen-Miskolc-Nyíregyháza network and the cross-border relations of the three cities are clearly the bases of strategic economic development (Figure 7).

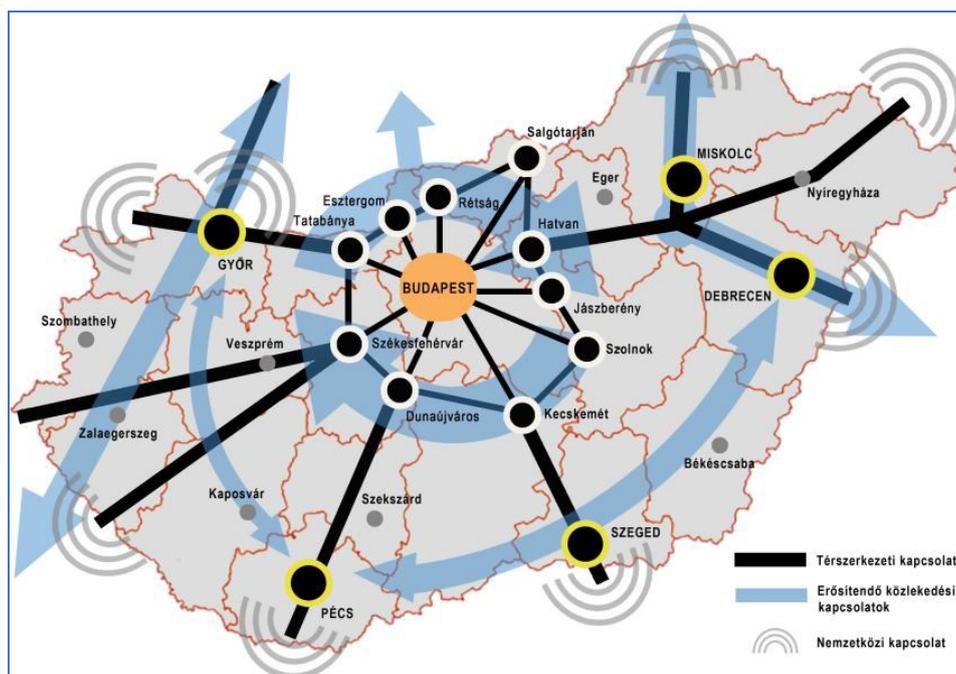
**Figure 6** Functional Areas in Hungary



Source: National Development 2030, p. 109

In order to establish an ideal investment-friendly environment, it is indispensable to create (1) special development zones that offer attractive investment environment and the conditions of further growth potential together with (2) the availability of appropriate infrastructural, institutional and service background.

**Figure 7** Structure of Strategic Relations in Hungary



Source: National Development 2030, p. 157.

**Table 2** Policy Actions in connection to Creative Region National, Economic and Cultural Zone

2018/03/26	58/2018. (III. 26.)	Government Decree about the declaration of administrative official procedures in connection to the industrial site development and job creation investments in the North-West Economic Zone (outskirt of Debrecen City of County Rank) as matter of strategic importance for the national economy
2018/09/25	1464/2018. (IX. 25.)	Government Decree about infrastructure development in connection to the formation of North-West Economic Zone in Debrecen
2018/09/25	1465/2018. (IX. 25.)	Government Decree about the nomination and tasks of a Government Commissioner for the sustainable economic, educational and cultural development of the automotive industry centre in Debrecen and its surrounding area
2019/12/05	1680/2019. (XII. 05.)	Government Decree about education- and innovation-related development in connection to the automotive industry centre in Debrecen
2020/03/05	1072/2020. (III. 5.)	Government Decree about the Coordination Forum of the North-East Hungarian National, Economic and Cultural Zone ...Chair: the Government Commissioner for the sustainable economic, educational and cultural development of the automotive industry centre in Debrecen and its surrounding area ... Participates in the work of the Forum as member: a) general deputy of the Prime Minister, (Zsolt SEMJÉN) b) Minister of Interior, (Sándor PINTÉR) c) Minister of Foreign Affairs and Trade, (Péter SZIJJÁRTÓ) d) Minister of Agriculture, (Dr. István NAGY) e) Minister of Finance, (Mihály VARGA) f) Minister of Human Capacities, (Dr. Miklós KÁSLER) g) Minister of Prime Minister's Office. (Gergely GULYÁS)
2020/03/05	1073/2020. (III. 5.)	Government Decree about the development plan of the 'Creative Region' – Development without Borders in Northeast Hungary National, Economic and Cultural Zone ... the complex development of the zone should be prioritised during the strategic planning of the Operational Programmes for 2021–2027, and specific policy measures should be elaborated for this purpose, ... ... umbrella projects should be developed based on individual government decision, such as: a) Complex territorial programme for reducing inequalities b) Complex territorial infrastructure development programme c) Complex development programme for competitiveness and employment generation d) Complex development programme for 2030 about the cross-border relations and cities of county rank of the economic zone
2020/04/03	1137/2020. (IV. 3.)	Government decree about the nomination and tasks of a Government Commissioner for the sustainable economic, educational and cultural development of the automotive industry centre in Debrecen and its surrounding area, and for the development of auto-motor sport and prioritized handling of traffic security (until 31 March 2022)
2020/06/10	1292/2020. (VI. 10.)	Government Decree about ensuring the financial support in the period 2020–2023 for the implementation of the Development Concept of Debrecen 2030 (and medium-term programming)

Source: own compilation based on public data, 2020

It is also interesting to examine how a new initiative could be formulated and transferred into practice from the policy level, more specifically: what have been the subsequent steps and timeline of the establishment of the Creative Region. Table 2 summarises the policy actions completed so far, based on the relevant government decrees. The intervention logic was as follows: (1) “flagging” the large-scale investment project in the region, of strategic importance for the national economy (e.g.: prioritisation in administrative processes), (2) connected “hard infrastructure” development, (3) delegating a representative from the government (commissioner), (4) connected “soft infrastructure” development, (5) establishment of the decision-making body, (6) elaboration of the programming document, (7) widening of the activity scope of the government representative (8) allocation of resources for short-term project implementation and mid-term programming.

## CONCLUSION

It can be concluded as a starting point that the so-called Bükk culture that evolved already in B.C. 5000 is special and unique. The openness and ambition to continuous innovations accompany the history of the city, especially in taxation, spatial planning, technologies and sciences, without being exhaustive. Throughout its history, the city has had a pioneering or outstanding role in several aspects distinguishing it from other cities in Hungary. In parallel to these, the fight for separateness and internal division have characterized Miskolc for centuries.

The acquisition of municipal right from 1909 gave a boost to spatial planning and urban development, and the administrative border of the city was significantly extended in the mid–20<sup>th</sup> century (with the formation of Greater Miskolc). On the other hand, we cannot ignore the tendencies that shaped the life of citizens in Miskolc and Northern Hungary in the first decades of the 20<sup>th</sup> century, namely World War I, the migration waves at the turn of the century, after Trianon and then in the 1930s, the subsequent changes of county borders and the personal losses during World War II. As a summary, the first half of the 20<sup>th</sup> century was a troubled period in the history of Miskolc, characterized with outstanding performances and large traumas and ruptures.

Post-WWII, in the era of state socialism, forced industrialization further strengthened the one-sided heavy industry-based character of the local economy, and at the same time, positioned Miskolc as one of the major immigration targets (not for the first time in its history). The local population reached its peak (over 210,000 inhabitants) in 1985, from

which date it shows a continuously decreasing trend. Currently, the population of Miskolc is about 155,000, and although the break or reversal of the decreasing trend would be welcome, we should also mention that this is the size for which the local infrastructure forms an optimal background.

With the collapse of heavy industry, several tens of thousands of workplaces were destroyed, causing a severe structural crisis in the city. At the end of the 1980s, the city turned towards its forgotten values and in the 1990s, a new chapter was opened in the history of spatial planning and urban development, accompanied by the uncertainties of local governance. In the decade following the change of regime, city leaders were still hoping that heavy industry could be revitalized, and the recognition that the city should be repositioned only arrived in the 2000s. From these years, the city has embarked on a road towards a sustainable, liveable, safe, smart and environment-cautious city image.

Based on our hypothesis and as a summary of the analysis, we can conclude that there are some characteristics of the city that could be detected at each stage of its development path, such as its openness to innovation and creativity, its friendliness and inclusiveness to all people (e.g. visitors, workers, settling families), its skilled and creative workforce curious and ready for the newest technologies and sciences, its beautiful natural environment, built heritage and good logistic position, and its capability and willingness for regeneration. On the other hand, internal division, the relative lack of cohesive forces and patriotism, local identity and consciousness as a community, culture of cooperation and trust are also characteristics of the city. Miskolc is not unique in Central and Eastern Europe with these features in our days: as a recent study demonstrates, a stronger cohesion in the social dimension, as a general feature, can be observed when examining CEE countries, alongside indicators in territorial cohesion and sharp differences in physical and social geography (Szabó, Kukely, & Bártfai 2019).

It is hard to tell what the future will bring for Miskolc, but in economic terms the city is stabilized to date. In social terms, there is still a lot to do, especially in the field of local patriotism and identity, community development and the institutionalization of collaborations. Competition for international investment projects, talent, resources, positions, high value-added activities will be even fiercer in the forthcoming years. Thus, based on the development path presented in the study, it would be advisable to return to our roots, to the ‘welcoming city’, the (re)attraction of talented professionals, the elimination of divisions and quarrels, and to join all forces in the interest of the city. In this respect, other Hungarian cities may provide

several good examples. Collaboration and community-building efforts of those who are eager to work for the city are the key and token for the future of Miskolc.

#### Acknowledgement

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