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## CHANGES OF BRNO INDUSTRY AND THEIR URBAN CONSEQUENCES

**ABSTRACT.** The city of Brno belongs to the category of medium sized cities in Europe and since 1989 it went through substantial changes of the local economy. Deindustrialization and the restructuring of the production impacted the development policy of the city and real estate market in Brno. The new role of the city within the networked economy is a principle question of the city development.

**KEY WORDS:** Brno, deindustrialization, city identity, economic policy, spatial structure

### INTRODUCTION

The aim of this paper is to characterise briefly the processes, which are closely linked to the structural changes of Brno industry – those changes having their origins in technological shifts, new forms of production organization and in the changing demand. Considering the fact that the development and functioning of most of the socialistic cities were deeply connected to the process of industrialization the transitional changes of the industry in a post-socialistic city cause serious spatial, political and institutional impacts. When studying the development of the production in the city of Brno one question is raising – is it deindustrialization process or the original industrial sectors stagnates being replaced with a new quality? Anyway the contemporary processes are characteristic by different demands for labour force, location pattern within the city and needs for public support.

## INDUSTRIAL PRODUCTION IN THE RETROSPECTIVE

The city of Brno belongs to the category of European medium sized cities with the population size up to 500,000 inhabitants. On the European context Brno is not a strong urban centre. The most of the administrative, control and decision-making functions is concentrated in Prague, which plays the role of the "gateway city" in Czech Republic (see later). The share of Brno in total GDP of the Czech Republic is approximately 4%.

The industrial production in Brno was (inter alia due to the massive state incentives) developed from the end of the 18<sup>th</sup> century in the form of textile manufactures. At the beginning of the 19<sup>th</sup> century Brno was one of the most important industrial centres in the Austro-Hungarian monarchy and the industrial development became the dominant factor influencing the spatial and economic structure of the city. The intensive industrialization stimulated the development of other sectors as well – the university education system was reinforced, the textile industry and later engineering and electrotechnical industry were sources of new technologies and innovations. The foundation of Brno Exhibition Ground was the indicators of the economic growth of the city strengthening of its commercial potential.

The post-war industrialization ran in accordance with the scheme typical for other socialistic cities. The centrally planned economy and orientation towards sectors of the heavy industry highlighted the industrial role of city at the expense of other functions. Relatively weakly diversified production was concentrated into the large units of machine tool or electrotechnical production where the majority of the disposable labour force was employed – the four biggest industrial companies employed more than one third of the industrial workers in Brno. At the end of 60ties of 20<sup>th</sup> century Brno together with Prague and Ostrava belonged to the one of the biggest industrial centres with 300 jobpositions per 1,000 inhabitants in the centrally controlled industry (Škvařil, 1969). The local industry was rather specialized – the companies, as for example Zetor (the producer of tractors) or Zbrojovka, were monopolistic manufacturers within many production programs of the socialistic industry. The analysis of changes taking place in the transition post-socialistic period is the subject of this paper.

As for the branch structure, the textile industry was the trigger of the classical industrial era of the city, which lasted almost without interruptions until the 90ties of the 20<sup>th</sup> century. In 1900 almost 13,000 workers were employed in the textile industry, which was approximately one third of the industrial employees in Brno. During the 20<sup>th</sup> century the engineering took the lead – after 1918 the number of engineering workers exceeded the number of employees in the textile industry and by the end of the 80ties the engineering became the dominant sector within the Brno industry with more than 50,000 workers. Moreover in the 80ties the electrical industry became a relatively strong sector (Kunc, 1999).

There are several important facts to understand correctly the city development during the transition period in the 90ties. Brno never belonged to the category of the so called single resource industrial towns. That is why the development trajectory of the city is slightly different from that of demographically comparable city of Ostrava for example. Of course the city development policy used to be affected by the needs of the industry. However the influence of "industrial paternalism" (Illner, 1992) – it means the interconnections between decisive and production spheres – was not so visible comparing with other Czech industrial cities. The industry of socialist times was supported by quality research and development base, which extent was dramatically reduced during the nineties.

At the end of 1989 the secondary sector was the leading one in Brno as for the number of employees (124,000 workers – almost 50% of all workers in Brno). Soon, in 1991 the tertiary sector became dominant with more than half share in the total employment. The "slimming" of the industrial companies was under way in two rounds and only part of the released workers moved to non-production sectors. At the end of 1996 only 60,000 workers were employed in the industrial sector (86,000 in the secondary sector), while the number of workers in the tertiary sector came almost to 170,000. At the end of 2000 the non-production sector was keeping 70% of the labour force in Brno.

Table 1. Branch structure of the employment in Brno and the Czech industry (31.12.1989)

INDUSTRY	NUMBER OF EMPLOYEES				INDEX OF SPECIALISATION
	BRNO		CZECH REPUBLIC		
	TOTAL	%	TOTAL	%	
fuel	941	0.4	204,978	3.9	0.10
energetics	3,335	1.3	57,470	1.1	1.22
metallurgic	158	0.1	145,733	2.8	0.02
chemical and rubber-making	2,911	1.2	118,971	2.3	0.51
engineering	53,464	21.4	601,907	11.5	1.86
electrical	9,928	4.0	140,881	2.7	1.48
glass and construction materials	1,607	0.6	128,003	2.4	0.26
wood and furniture	1,483	0.6	76,837	1.5	0.41
metalworking	2,199	0.9	112,622	2.2	0.41
paper-making	2,430	1.0	28,865	0.6	1.77
textile, clothing, tanning	9,360	3.8	278,149	5.4	0.70
printing	1,180	0.5	17,077	0.3	1.45
food-processing	4,967	2.0	74,223	1.4	1.40
other industrial production	3,457	1.4	58,464	1.1	1.24
Industry total	97,420	39.1	2,114,882	40.4	0.97
Economy total	249,453	100.0	5,236,908	100.0	

Source: Workers and wage-funds in the socialist sector of national economy in the regions and districts by branches of national economy of CSR in 1989, Czech Statistical Office, 1990

The combined influence of the industrialization, socio-economic, resp. ideological organization of society and the way of production on (urban) processes shaping the socialist cities is a subject of study for many urban geographers (e.g. Szelenyi, 1996).

## INDUSTRIAL CHANGES IN A WIDER CONTEXT OF THE CITY

As Musil (1992) pointed out, post communist societies go under dual transformation – political and technological. Not only in the case of Brno the industrial restructuring is a good illustration of the dual character of the social transformation. The decline of the importance of the industry for the life of the city, it means a process what took several decades in West-European cities (Le Gales, 2002, Pacione, 2001) is very fast in the milieu of a former socialistic towns.

If we consider the city as a whole with distinct history and collectively formed knowledge, the crisis of the city identity can be mentioned as one of the results of the changes in the industrial structure of Brno. The city identity is (apart from others) based on export successful function, which creates multiplicative effects also in other sectors – the industrial production played this role in Brno until the 90ties. The identity crisis is also closely connected with the death of the collective city concept (Short in Bridge, Watson, 2000). A collective city is specific by its clearly defined role in the centrally controlled national economy, only few tools of autonomous development, big proportion of public services and investments, large sharing of public goods and collective consumption of space. In accordance with Harloe (1996) we can see that the relations between the worker and the particular company weakened in post-socialist cities. This company used to be a supplier of many collective and individual sources (housing, recreation, medical care, education, etc.). This development determines the role of the local government as the provider of these services and removes policy from economic processes. In connection with the new international division of labour and the new organization of the companies internal hierarchy the apparent geographic ties between the city and the particular company are diminishing.

The transitional development brought changes in the form of city corporatism. The position of representatives of traditional industrial sectors in the interest groups influencing city decision-making is gradually weakened in favour of the new actors. The partners of the local government, e.g. developers or lobbyist groups, become the more visible actors of economic transformation within the processes of public-private partnership. In spite of that the influence of industry-related structures is still strong, stronger than the importance of the declining traditional industry should be. The concept of industrial production as a driving engine of the city economy seemed to be a thesis with strong inertia during

the transformation period with deep influence on the public attitudes and activities of political representation of the city.

### CITY ECONOMIC POLICY

Globalization and economic internalisation impact especially the medium sized European cities which economic foundations are based on traditional industrial activities. Relative autonomy and competition of the cities, it means phenomena linked mainly to the process of European integration, occur nowadays on national level. In the space of (central) European cities the processes of territorial competition can be observed. Groups bounded to the economy of certain territory/city try to build the economic strategy not only on the base of indigenous factors but also with respect to the activities of principle competitors.

Together with the decline of traditional industrial sectors, with the downfall of centrally controlled industry and with the collapse of the biggest industrial firms in Brno the city (city council) starts to play a new role of agent fully responsible for the economic development. From the 90ties the city is conceptualised as a form of enterprise that can be successful under the condition that the comparative advantages and inner reserves are mobilized (Amin in Bridge, Watson, 2000). The entrepreneurial concept of the city strongly influenced the attempts to define its new role in the changing economic environment and to stress the priorities of the economic policy. Limited competences of the city in the sphere of fiscal policy reduce the economic strategy of the city to the infrastructure construction and marketing activities. On the other hand we should realize, that the concept of territorial competitiveness is rather controversial – according to many authors (Budd, 1998, Begg, 1999) there is no competition between cities but between particular companies localized within the cities. The task of the city is then to ensure appropriate conditions guarantying the higher level of competitiveness for the firms.

The restructuralization of the city economy was logically most visible through the changes on the labour market. The increasing level of (long-term) unemployment strongly influenced the approach of local government toward the issue of Brno industry transition. The economic strategy of the city is, from the short-term point of view, focused to solve the problems of the labour market, while the technological and structural change is the goal in the long-term horizon. Politically motivated actions mitigating the impacts of transition however very often prevail the strategic modernisation of the local economy.

In Brno, like in other Czech cities, great attention was paid to attract foreign investments. The project of Technology Park, very ambitious at the time, was launched as the public-private partnership project between the City, the technological university and a private developer in the beginning of the 90ties, long

time before the introduction of the incentive scheme in Czech Republic. The Park was oriented to technological firms and strategic services, but due to lack of possibilities to stimulate the investors by incentives it was disadvantaged towards similar projects in Hungary or Poland. In the view of rising unemployment rate the project loose its prior position within the economic policy of the city. The activities of the municipality were re-oriented to fight the growing (political) problem of rapidly increasing unemployment. This course of policy corresponds with the preparation of a strategic industrial zone (prepared in 2000) and with economic marketing focused on investors able to bring a large number of jobs, no matter of what quality.

The first "large-scale" investor was the US company Flextronics International entering the industrial zone with the promise to create about 3000 work place in assembly of electronic parts. The activities of Flextronics in Brno, including the closure and removal of its production in 2002, are good examples of risks resulting from orientation to branch-plant investments type (Knox, 1994). Other threats were for example the use of cheap labour force, the big share of non-local or foreign workers, no links with local companies, the high mobility of production or the excessive opening of local economy towards the fluctuation of global market.

After some time the concept of Technology Park based on the use of qualified labour force seems to be more viable scenario of local economy restructuring. As the stable structure of companies based in the Technology Park shows the investments in modern technologies and high-skilled labour force within light industrial production or strategic services bring more long-term effects. Establishing of IBM client service centre in 2001 or takeover of Flextronics production facilities by Honeywell (automation and control solutions) in 2003 are the examples of new quality investments which help, besides other, to create the post-industrial image of the city. The "demonstration effect" is also very important promoting the inflow of other similar investments.

The current direction of the city economic policy heads toward the reinforcement of the technological and innovation capacity of the industry through the improvement of the institutional environment. The regional innovation strategy of South Moravia was prepared containing experience from the regions of Limburg (Netherlands) and Saxony-Anhalt (Germany) – both regions went under deep structural changes. The strategic document outlines concrete measures concerning mostly the improvement of the so-called "soft" factors. These are e.g. better communication between academic, commercial and R&D sectors, creation of conditions for branch clustering or support of technological start-ups. According to Amin (Amin in Bridge, Watson, 2000) the city is a source of non-economic interdependencies based on the closeness of relations and personal ties. The informal networks between particular urban actors create a better innovative environment than directive, institutionalised relations – the expansion of

Brno IT companies could be a good example of a sector which dynamic was originally launched on informal base.

The example of Brno shows the limited possibilities of the city economic policy. The investments of the international technologically based firms mentioned above can be understood firstly in the context of localisation economy (use of cheap but qualified labour force, the cheap realities respectively). Decentralization effects taking place on the level of big metropolis enhance this process. The R&D activities, client services and back-offices are under the pressure of high costs and move to the medium sized cities. Many authors work with the concept of "gateway cities", it means cities playing the role of starting point for investing in the new territory. In the Czech Republic, Prague is the only city of this category. Brno however can aspire to be a so called "bridge city" – a city with position between production centres and the regions of consumption. Such a city plays the role of distribution node and the place of final assembly of the products. The rising area of logistic parks in the close vicinity of the city is a partial symptom of this kind of development.

### SPATIAL IMPACTS OF THE INDUSTRIAL RESTRUCTURING

As Pacione declares (2001) the post-industrial urban development is characterised by the fragmentation of the traditional urban form. The contemporary changes in Brno industrial production have a great impact to the functional structure of the city and they are sure to influence substantially the morphostructure of the city in the long-term horizon.

In the contemporary spatial structure of the city we can still find urban patterns coming from the early (and only little coordinated spatially) phase of the industrialization in the second half of the 19th century. In the first stages of the industrialization the spatial needs of industry were determined by the dependency of the textile or engineering industry on water (necessary for steam engines operations). That is why the oldest industrial grounds are linearly concentrated within the structure of the to-day's city in spite of the unregulated and additive way of construction that time. The structure established in this way was not significantly modified at the times of socialist industrialization – the post-war industrial development went on mostly through thickening of the plants in their original localities (Kuča, 2002). Decentralization of the industry – a process running in Western Europe from the seventies – started in the Czech cities during the transition period of the nineties. Changes in the spatial structure of the industrial production are the results of many mutually interacting processes.

The disfunctional real estate market deformed the land use in the socialist city (Sýkora, 2001). The liberalization of the real estate market caused a finer

differentiation of values of particular plots with respect to their position within the city, accessibility and image of the city district.

The declination and rationalisation of the production in the industrial plants including the reduction of the over-employment or use of external services (catering, security) together with the modernization result in less intensive use of many traditional industrial plants.

We can say with some simplification that the polarity between the dynamic secondary sectors and the declining traditional branches imprints into the spatial structure of the city. The centrally localised industrial plots are left behind while the (suburban) development zones attract new investments (Muliček, Olšová, 2002). The location of new investments is nowadays much more determined by outstanding road accessibility, quality of the working environment and the legal status of the particular plot (ownership, rent conditions, etc.).

The present foundation way of many industrial plants is called "controlled" by town-planners. Quite large plots are possessed by one owner or developer that apart from other activities defines the functional use of the plots and also the price depending on the demand. There are some examples of this approach – Brno Technology Park (area of 60 ha, run by a specialized joint-stock company), the commercial logistic park (area of 30 ha, private developer) or the industrial zone (area of 180 ha, managed by the City of Brno). If we speak about the spatial deconcentration of the industry in Brno, it is necessary to realise that the trend on the micro level is concentrative. Particular firms form clusters in the polyfunctional zones, often linked by supplier-client chain. This can be illustrated on the example of the logistic park, where the production firms are attracted by the presence of credible logistic company.

The relatively dynamic development of green-field type zones in the fringe positions contrasts with the functional changes in the traditional industrial districts in Brno. In Brno, as well as in the whole Czech republic, there is significant imbalance between a large supply of (old) production estates and a weak demand for this kind of industrial properties. The offer of old-fashioned and low-quality plants prevails. The options of their further development can be described by only few examples. The successful revitalization or change of the function of the old industrial property is an optimum solution. Anyway the revitalization plan has to correspond with the location and state of the estate. The former foundry (with an outstanding position near the highway) converted to the modern logistic centre is a good example of a well-done regeneration. In many cases the old industrial plants are exploited in the way, which is not sustainable from the viewpoint of spatial economy and seek only for immediate profit. This is the case of industrial plants in the central parts of the city, which are occupied by wholesales and discount sales, cheap office spaces or stores. This mode of use is characteristic by minimal maintenance of the estate, unclear splitting of property between numerous owners or tenants and by their frequent fluctuation



(the number of tenants varies from 20 to 100 depending on the attractiveness of the real estate). It has of course negative impacts to the real market in the vicinity of the estate. Moreover, there are many industrial plots in the area of Brno without any use. The rough estimation of real and potential industrial brown-fields in Brno varies about 140 hectares.

The low attractiveness of old industrial properties is caused the high costs necessary for their successful regeneration (demolitions, ecological recovery). The standardised costs of the construction of an industrial plant are four times higher in the case of a brown-field site comparing with the green-field construction (Jackson, 2002). If we take in account the low willingness of the local developers to invest in real estates and the poor attractiveness of non-Prague localities for foreign developers we can see that the solution of the brown-fields issue is a matter of long-term development and massive public support.

## CONCLUSIONS

The post-socialist development of the industry Brno has deep impacts to the various sectors of the city life. As Sýkora (2001) points out, while deindustrialization affects most of the big cities in the developed countries, only a few of them are able to reach new functions within the global economy. The embedness level of the traditional industry into the social and physical structures of the city deepens the problems of restructuring. The city was perceived primarily as a place of production under the socialist regime, but there is an uncertainty how to conceptualise the city nowadays. The identity crisis is obvious especially in the rank of medium sized cities trying to modify their resources with respect to the new economic logic.

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