Post-socialist Transition of Traditionally Industrialised Areas in the Czech Republic

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Abstract

The contribution is focused on evaluation of the transition process of the traditionally industrial areas in the Czech Republic after 1989. After a brief introduction with the debate of up to date theoretical approaches discussing evolution of the economic structures and transformation processes relevant in Central Europe is offered the basic categorization of industrial areas in the Czech Republic before 1989. The empirical part of this paper is presenting detailed elaboration of development trajectories of traditionally industrial areas in various phases of the transformation process after 1989. Special attention is paid to the profiled category of old industrial regions. In regional structure of the Czech Republic the areas of Ostrava and Usti nad Labem are ideal examples of old industrial regions and there is the description of basic trends in the development of economic structures and comprehensive evaluation of the success of the their transformation process as a whole.

Key words: transition, industrial region, regional economy

JEL Classification: R580, O018

1 Introduction

At present, the accent to change of post-Fordistic accumulation to a flexible production mode is primarily made within the economically focused thoughts about the transformation processes of territorial units. In detail, we understand the transformation of the territorial units as an attempt for the general change and adaptation of the key economic, social, and physical structures to currently requested parameters for a competitive development. In fact, this is a search for successful position with a certain level of importance in the post-industrial era. The transformation (a general process of change) has the following subcomponents:

• Economic dimension, contents of which are revitalization or conversion of the original economic (industrial) structures.

- Physical and environmental dimensions, where remedy of impaired physical structures and environment occurs through the extensive industrial activities.
- Social dimension, in which change to the social situation and characteristics of the society needs to be made.

The question of the strategic direction or the course of the restructuralization process is important is well. Trippl and Otto (2009) define the following scenarios:

- Progressive fractional changes, innovations oriented on the change to the existing branches this is only respecting of the existing development trajectory, organisational changes or privatisation processes within the existing local big companies, and interaction of foreign capital occur only.
- Support of the diversification. It may have a form of emergence of branches from the sectors not existing there (so-called unrelated diversification (variety)), but it may have a form of expanding of the economic base and companies in the existing industries (related diversification (variety)).
- Radical changes, emergence of new branches (competitive, high-tech) this is a principal change to the development trajectory where it is possible to tie on the local rooted sources, competences, and experience.

The economic restructuralization understood as an economic dimension of the transformation (regeneration) of the old industrial regions plays of fundamental role within the processes of the general change because it significantly determines the possibilities of changes both in the physical form of the regions as well as their social characteristics. Despite that, the theme is not processed in detail in the bibliography (especially Czech one). Sucháček (2005) defines the restructuralization as a long term process of transformation of the economic and institutional structure of the region to achieve goals, for example of the economic growth of the region, improving competitiveness of the region, and improvement of the conditions and social environment. Cooke (1995), while accepting the restructuralization as a dynamic process, in which it is necessary to surmount the inertia and resistance of the existing structures and institutions, defines 2 basic forms of the restructuralization:

- Noisy restructuring, when there is a strong institutional resistance to the change processes and there is a strong will to preserve the original conditions and structures or to modernize the existing production facilities only.
- Quiet restructuring, when there is a weak institutional resistance to change processes and there is space for emergence of new branches that only partially tie on the existing ones.

2 Transformation of Traditionally Industrial Areas, Forming of Old Industrial Regions

Within the discussion of the transformation development of their traditionally industrial areas in the Czech Republic after 1989, it should be - in addition to the development of own parameters of the industrial production - necessary to monitor in the general position of the regional economies within the country, in practical with in relation to the evaluation of success of the transformation processes after 1989. There are many options and a wide spectrum of indicators applicable to such evaluations. It is ideal to consider the approaches, which synthetize multiple factors of the

regional competitiveness and are able to express more complex picture of the position of the regional economy. In this regard, the most suitable and best supported from the methodical and empiric point of view is the general evaluation of the regional competitiveness based on the level attained in the field of quality of business environment, use of human resources, and innovation potential of the companies. The regional analyses with that focus are on long term run processed by the research team led by Viturka (for more details about methodology and detail parameters of the competitiveness of specific territories of the Czech Republic, see especially Viturka (2007, 2010).

While striving to categorize the traditionally industrial areas in the Czech Republic, we can use comparison with the other territories with current or former tradition of the industrial production, but of which default situation, general conditions, or resulting form of the transformation differ. Tödtling and Trippl (2005) define in this regard and based on Austrian and experience two more categories of regions with tradition of the industrial production in addition to the old industrial regions. We understand the fragmented urban regions as larger towns and their background with a strong tradition of the industrial activities, which, however, underwent successful processes of the transformation and form the performance base of the economy. The peripheral regions represent locations with the tradition of the industrial production out of the main residential concentration sites. Their success is highly individual in the transformation era.

	Fragmented urban regions in the Czech Republic	Old industrial regions in the Czech Republic	Peripheral locations in the Czech Republic
Example	Brno, Plzeň	Moravia-Silesia Region, Usti Region	Semily, Jeseník
The effects of agglomeration	Positive	Negative	Weak or none
Companies and branches	Many companies and branches (industry and services), knowledge- oriented in extraordinary cases	Superiority of big companies Specialisation on life- cycle end branch	Small and medium-sized companies, absence or poor development level of the clusters
Innovation activities	Presence of research and development in larger and high-tech companies, product innovations	Technological underdevelopment, domination of incremental and processes innovations	Poor level of the research and development, poor product innovations, superiority of the incremental and process innovations
Creating and distribution of knowledge (universities, research organisations)	Many and quality, deeper relations with industrial production absent	Poor or focus on traditional branches prevails	None or poor quality
Education	A wide range of schools and education organisations Use of the highest qualifications	Emphasis on technical knowledge, currently demanded qualifications and management skills missing	Emphasis on low or secondary qualification
Transfer of knowledge	High density of specialized production	Organisations specializing for transfer	Poor presence of specialized services, poor

Tab. 1 Categorization of the territories with the tradition of industrial production and specifics of the old industrial regions in the Czech Republic

	services, commercialization of knowledge	existing, poor coordination Poor orientation on demand	orientation on demand
Networks	Market-oriented, often several clusters and	Characterized by technological and	Only a few thanks to poor interconnection of
Intervolks	innovation-oriented networks	political lock in and rigidity	companies and sparse institutional density

Source: adapted from F.Tödtling, M.Trippl (2005)

We say based on the things mentioned above that in the Czech Republic, specific categories of regions were profiled up during the transformation area and we can call them the old industrial regions. Their basic (economic) characteristics include:

- Localisation of the industrial branches or structures operating since the beginning of industrialisation of the Bohemian territory. These branches came to the final phase of their life cycle and their physical structures lost most of useable value (mining industry, metallurgy or infrastructure not used for current production in any branch).
- Quantitative growth and preference of non-promising industrial branches up to the final era
 of socialism regardless of the trends in the developed countries and to without innovations of
 the production processes and technologies.
- A significant absolute and relative drop of workers in the industry during the transformation (under the conditions of the Czech Republic, this is tens of thousands in absolute numbers and more than 30 per-cent in relative numbers).
- Problematic transformation characterised by generally poor position of the regional competitiveness symbolised especially by high unemployment level (under the conditions of the Czech Republic, the value exceeds 10%).
- General disruption of the environment symbolised by low quality of environment and aesthetic conditions and the below-than-average social situation.

At the same time, they should be heavily urbanized territories with strong concentration of stakeholders and processes, however, where the existing strong specialisation on traditional industrial branches, obsolete technological equipment, overall rigidity of the environment, and problematic social composition bring about the negative orientation of the agglomeration effects. The ideal examples of all industry are regions are in the Czech Republic the Ostrava area (especially the districts Ostrava-město, Karviná) and the Usti area (districts Most, Teplice, Chomutov, Děčín, and Usti nad Labem).

3 Development Processes and Changes in Industrial Regions

The course of development trajectory and regional development processes in transforming economies is much significant because it is still considered as an indicator of success of the economic transformation, especially when compared to other countries of the former Eastern Bloc. Similarly to the national transient economies, which underwent economic transformation in the 1990s, different development trajectories at the level of individual regions can be seen (Koutský, 2011). Many indicators could be used for the area of the macroeconomic data; first and foremost especially from the gross domestic product and its difference between the beginning and the end of the monitored period of 2001 - 2010. For review of the development trajectories, GDP

development analysis per capita in the monitored period provides rather representative view on monitoring of the economic development of the region.

	2001		2012			
	per capita (CZK)	ČR=100%	per capita (CZK)	ČR=100%		
Moravia-Silesia Region	176 377	83,7	297 177	87,7		
Usti Region	167 727	81,3	299 435	80,7		
Czech Republic	211 051	100,0	365 955	100,0		

Tab. 2 Gross domestic product per capita in the years 2001-2012

Source: own processing based on data from Czech Statistical Office

Since 1990s, the Czech economy has been showing a wide range of structural problems associated for example with bad industrial composition and low competitiveness of the Czech companies. The Usti Region and Moravia-Silesia Region, which belong amongst the structurallyimpaired regions, do not show under the average results when compared to the other regions of the Czech Republic despite a wide range of social-economic and environmental problems. However, the different processes are differentiated; in the Usti Region, there is lower GDP growth rate and on the contrary, the Moravia-Silesia Region saw higher growth of the GDP between 2001 and 2012. These development processes point out to continuing divergence processes between the regions, despite these are typologically close areas.

		2001			201	12
	in mil. EUR	per capita (EUR)	ČR (100%)	in mil. EUR	per capita (EUR)	ČR (100%)
Moravia-Silesia Region	1559,6	1 227	71,0	3 620	2 937	82,2
Usti Region	1347,7	1 640	94,9	3 266	3 942	110,3
Czech Republic	17705,2	1 728	100,0	37 520	3 575	100,0

Source: own processing based on data from Czech Statistical Office

From the point of view of development of gross fixed capital per capita, long-term growth of the gross fixed capital is seen between the monitored years 2001 and 2012. There are differences between the regions all around the monitored period. The table presents data for mention years only; however, it could be said that throughout the monitored period, the Usti Region was relatively more attractive than the Moravia-Silesia Region. Despite higher volumes of growing investments in the Usti Region on long-term basis, even compared with the other regions, the region lags behind in many different macro economical indicators, especially in the field of employment and quality of human resources.

Passing the act on investment incentives, which defined the basic mechanism of support of the foreigner investments from the legislation point of view, significantly contributed to the inflow of foreign investments to the regions of the Czech Republic, including the Moravia-Silesia Region and Usti Region. Late in the 1990s and after 2000, following the period of long-term growth of foreign direct investments, and thanks to new legislation, the inflow has reached records for over the last 20 years. Compared this to the other regions, the position of the Moravia-Silesia Region and Usti Region is more likely higher than average, and when calculating the value of the foreign direct investment to a single job, they belong among more successful regions. The higher inflow

of the foreign direct investments to the Moravia-Silesia Region and Usti Region has been caused by the inflow of investments into already existing industrial companies as well as significant support within the system of the investment incentives, so-called incentive investors.

Tub. 4 Quantity of foreign uncer investment per workforee to 2012								
	FDI/1EA (in 1000 CZK)	CR (100%)						
Moravia-Silesia Region	220,4	60,9						
Frýdek-Místek	134,3	37,1						
Karviná	45,2	12,5						
Ostrava-město	590,4	163,2						
Usti Region	147,1	40,7						
Chomutov	118,8	32,8						
Most	331,7	91,7						
Teplice	141,7	39,2						
Usti nad Labem	166,6	46,0						
Czech Republic	361,8	100,0						

Tab. 4 Quantity of foreign dir	ect investment per wo	orkforce to 2012

Source: own processing based on data from Czech Statistical Office

The deployment of the foreign direct investments within the regions shows rather high regional disproportions (see table). From the long-term point of view, the highest inflow of the foreign direct investments has been associated with important regional centres of districts Ostrava-město, Most, and Usti nad Labem, followed by the other industrially focused districts Frýdek-Místek, Chomutov, and Opava as well. Despite the Most district (Hlaváček, 2009) is characterized by a wide range of social economic indicators, which ranks the district among the less attractive ones in the Usti Region, the higher level of the foreign direct investments points out to the other factors that influence decisions about location. The political interests of the country in retaining of the social coherence of the territory are subsequently reflected into giving the priorities of the district and the regions especially with higher unemployment level.

Within the area of an evaluation of the R&D potential of the regions, changes to the area of human resources have been analysed; it means number of researchers and expenditures for research and development, whereas this data was converted per workforce.

Tuble Development in a number of researchers										
2001	2002	2003	2004	2005	2006					
3 687	3 345	3 667	3 831	3 886	4 496					
1 018	916	800	1 046	957	1 155					
51 939	53 695	55 699	60 148	65 379	69 162					
2007	2008	2009	2010	2011	11/01 (%)					
5 336	2 931	3 191	3 459	4 742	28,6					
1 360	798	736	769	856	-15,9					
73 081	50 808	50 961	52 290	55 697	7,2					
	2001 3 687 1 018 51 939 2007 5 336 1 360 73 081	2001 2002 3 687 3 345 1 018 916 51 939 53 695 2007 2008 5 336 2 931 1 360 798 73 081 50 808	2001 2002 2003 3 687 3 345 3 667 1 018 916 800 51 939 53 695 55 699 2007 2008 2009 5 336 2 931 3 191 1 360 798 736 73 081 50 808 50 961	2001 2002 2003 2004 3 687 3 345 3 667 3 831 1 018 916 800 1 046 51 939 53 695 55 699 60 148 2007 2008 2009 2010 5 336 2 931 3 191 3 459 1 360 798 736 769 73 081 50 808 50 961 52 290	2001 2002 2003 2004 2005 3 687 3 345 3 667 3 831 3 886 1 018 916 800 1 046 957 51 939 53 695 55 699 60 148 65 379 2007 2008 2009 2010 2011 5 336 2 931 3 191 3 459 4 742 1 360 798 736 769 856 73 081 50 808 50 961 52 290 55 697					

 Tab. 5 Development in a number of researchers

Source: own processing based on data from Czech Statistical Office

Should we monitor changes to the number of researchers between years 2001 and 2011, we can see 7.2% increases in the Czech Republic. In Moravia-Silesia Region, the number of researchers has increased by one quarter in the monitored period. On the contrary, the situation in the Usti Region deteriorated because 15.6% drop from 1,018 to 856 researches was reported. This development points out to successful transformation processes of the Moravia-Silesia Region in the R&D activities, which contributes to the reorganisation of the regional economy, labour market, and growth of the competitiveness of the region. On the other side, the situation in the Usti Region is alarming because the region, despite its strong industrial tradition and relative potential, is not able to positively transform and develop its research and development potential. Share of people with university degree in the population indirectly confirms the weak position of the region in this area. The lowest growth of university-degree people in the Czech Republic is typical to the Usti Region.

Another indicator, which monitored the growth of expenses for research and development, is shown in Graph 1. The graph shows total expenses for research and development recalculated to workforce, and they are shown in the form of calculation of three-year running average to compensate annual fluctuations. The long-term growth of these expenses at the national level has been in fact continuous; in the Moravia-Silesia Region, despite strong all year-to-year differences, the growth of the expenses is obvious. In the Usti Region, the growth of expenses for research and development activities has been stagnating, as directly confirmed by the absence of growth in the number of researchers.



Graph 1 R&D expenses per workforce in CZK (3-year running averages, CZK) Source: own processing based on data from Czech Statistical Office

The development of the average wages in 2001 and 2011 shows positive increases each year. Since 2001, the average wages has been continuously increasing by the end of the monitored period. Comparing the growth of wages between individual regions of the Czech Republic, it is obvious that the average ranges increased most between 2001 and 2011 in the South Moravia Region by 59% and in Vysočina, where higher increase is influenced by the lowest wage level.

Tab. 6 Development of gross average wage between 2001-2012 in CZK									
	20	001	20						
	abs. (in CZK)	ČR= 100%	abs. (in CZK)	ČR=100%	Rozdíl 01-12				
Moravia-Silesia Region	13 553	-3,2	21 327	-9,8	7 774				
Usti Region	14 049	0,4	22 111	-6,4	8 062				
Czech Republic	13 996	100,0	23 634	100,0	9 638				

Source: own processing based on data from Czech Statistical Office

In the 1990s, the employment and unemployment underwent the development that signalised the changes to the structure of activities of workforce after 2000. In 1995, long-term growth of the unemployment level in the Czech Republic, and increased growth rate in the Usti Region began. From early 1990s to 1995, the highest unemployment level in the Usti Region was reported in the Louny district, because high number of employees worked in the farming industry, which underwent a radical change early in the 1990s, including dissolution of state farms and united agricultural cooperatives, that resulted in high decrease in the jobs.

The more intensive growth of the unemployment level in the Moravia-Silesia Region and Usti Region since half of the 1990s to the present day, points out to a stronger influence of the economic transformation on traditional industrial regions. The unemployment growth rate in the region is also negatively influenced by the entry of population-strong years from the 1970s on the labour market, unfavourable education structure, and other social economic problems of the districts in the Moravia-Silesia Region and Usti Region. A certain stabilisation and unemployment level decrease in the period before the economic crisis in 2008 was a reflection of the economic rehabilitation of both regions.

										\ \	/		
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	12-01
Chomutov	16,4	17,7	18,7	17,5	15,5	12,3	9,7	9,9	13,2	13,3	13,2	15,1	-1,3
Most	21,3	21,7	23,5	23,8	21,2	19,5	15,5	13,1	16,4	16,5	15,6	16	-5,3
Teplice	16,6	18,2	19,9	17,4	16,8	15,7	11,7	10,6	13,8	14	12,3	13	-3,6
Usti n. L.	14,1	15,3	14,8	13,2	13,4	13,3	11,3	10	13,4	13,7	13,1	14,1	0,0
Frýdek-Místek	14,1	14,7	15,2	15,3	12,1	10,5	7,9	5,9	9,8	9,5	8,1	9,3	-4,8
Karviná	18,0	19,6	20,4	20,2	18,6	16,9	13,4	11,5	14,4	14,3	13,1	14,4	-3,6
Ostrava - město	16,2	16,7	17,9	17,2	14,5	12,9	9,4	8,4	11,3	12	11,4	12,8	-3,4
Moravia-Silesia Reg.	15,1	15,9	16,8	15,7	14,2	12,6	9,6	8,5	12,1	12,4	11,2	12,3	-2,8
Usti Region	15,8	17,1	17,9	15,9	15,4	13,8	11	10,3	13,6	13,9	12,9	14	-1,8
Czech Republic	8,9	9,8	10,3	10,3	8,9	7,7	6,0	6,0	9,2	9,6	8,6	9,4	+0,5

Tab. 7 Development of unemployment rate in the years 2001-2012 (%)

Source: own processing based on data from Czech Statistical Office

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3 Conclusions

Under the conditions of the Czech Republic, the old industrial regions are the Ostrava area and a major part of the Usti Region (districts Most, Chomutov, Teplice, Usti nad Labem, Děčín). These territories crystallised into the form of the old industrial regions in the context of the long-term development of the Czech industry. Their current position is defined especially by the regional consequences of the industrial development early during the industrialisation in the area of the Austro-Hungarian Empire, dynamic era between the wars, during the WWII, in the socialistic extensive stage, and especially in the transformation era after 1989. The main factors of forming of the old Czech industrial regions include localisation of the industrial branches from the first phases of the industrialisation of the countries of Bohemia, their quantitative growth and preferences until the final era of socialism regardless the trends in the developed countries and technological development, significant absolute as well as relative drop of workforce in the industry during the transformation after 1989, and generally problematic course of the transformation.

The assessment of the basic macro indicators of the Moravia-Silesia Region and Usti Region indicates the development processes in which differentiating and relative developments changes are reflected at a different level. From the general point of view, both regions and their industrial centres undergo an important de-industrialization, which is to a certain level replaced by tertiary sphere and development of new branches associated with foreign investments. Despite long-term run-down processes in the heavy industry and mining, they for example still keeps rather good level of the gross wages. In closer look, especially from the point of view of growth of competitiveness, there are more significant differences between the regions. Institutions and companies in the Moravia-Silesia Region are much more successful in development of the research and development activities, the number of their R&D staff increases as well as expenses for these activities. On the contrary, the Usti Region sees stagnation the field of research and development processes in the Czech Republic. The economic restructuralization in the cooperation of the public resources should help especially in the Usti Region, in the development of the innovation potential and knowledge economy.

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