SPECIAL ISSUE: REGIONAL DISPARITIES, ECONOMIC ENTITIES AND TERRITORIAL DEVELOPMENT

Contents:

Bosch Diesel and its Impact on the Socioeconomic Development of the Vysočina Region 5

Large Enterprises Impact on Ostrava Agglomeration – Selected Aspects 20

Effects of FDI Regeneration Projects - the Case Study of Prologis Investment in the Post-Industrial Area in Chorzow (Upper Silesian Agglomeration, Poland) 36

Foreign Direct Investors and Economic Territorial Development in East Germany 49

Regional Aspect of Monetary Transmission: The Role of Banks and Firms 63

Spatial Planning and Tourism Development in Portugal 77

Case Study in Intellectual Capital and Territorial Development: Analysing Portuguese Local Governments Web Pages 89

Coefficient of Facilities and its Use in the South Bohemian Region 107
AUTHORS
Václav Toušek, Ondřej Šerý
Lucie Holešinská
Adam Drobníak
Rüdiger Wink
Michal Šulc
Sandra Bailoa, Pedro Cravo
Sandra Bailoa, Paulo Resende da Silva
Jiří Dušek

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Recenzované elektronické periodikum REGIONÁLNÍ DISPARITY
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Dear readers,

this issue of “Regionální disparity” journal contains articles written solely in English. Individual papers are focused on the topics belonging to spatial sciences.

There are no doubts that there exist intense and complex relations among economic entities and territories of different scales. These relations formed substantial themes of the conference on Regional Disparities, Economic Entities and Territorial Development that was organized by the Department of Regional and Environmental Economics at the Faculty of Economics, VSB-Technical University of Ostrava at the end of 2010. During the conference many papers relevant to the subject were gathered. Since the interconnectedness among regional disparities, economic entities and territorial development represents truly an exciting topic, the creation of this special issue of our journal turned out to be a natural step. At the same time, the topic is wide enough to cover the papers of various characters.

While the first paper is devoted to the influence of a large industrial enterprise on the development in Vysočina region, the next one shows the impact of large enterprises on employment in Ostrava agglomeration. The third paper deals with multidimensional assessment of brownfield regeneration projects undertaken by large foreign investors in Poland. Next article investigates the changing role of foreign direct investments for economic development in East German regions by focusing on the role of knowledge seeking investments. The next contribution deals with regional aspects of selected monetary categories. The sixth paper presents the Portuguese territorial management system and its interrelations with tourism development. The next paper shows the importance of intellectual capital for local governments. And the final contribution deals with an analysis of the change of municipal facilities in South Bohemian region.

Last but not least, we hope you enjoy your reading!

Jan Sucháček
Editor-in-Chief

Interested in publishing your article? Contact Ms Martina Krpcová (e-mail: martina.krpcova@vsb.cz).
CONTENTS

Václav Toušek, Ondřej Šerý
BOSCH DIESEL AND ITS IMPACT ON THE SOCIOECONOMIC DEVELOPMENT OF THE VYSOČINA REGION.......................................................... 5

Lucie Holešinská
LARGE ENTERPRISES IMPACT ON OSTRAVA AGGLOMERATION – SELECTED ASPECTS............................................................ 20

Adam Drobniak
EFFECTS OF FDI REGENERATION PROJECTS - THE CASE STUDY OF PROLOGIS INVESTMENT IN THE POST-INDUSTRIAL AREA IN CHORZOW (UPPER SILESIAN AGGLOMERATION, POLAND).......................................................... 36

Rüdiger Wink
FOREIGN DIRECT INVESTORS AND ECONOMIC TERRITORIAL DEVELOPMENT IN EAST GERMANY.................................................. 49

Michal Šulc
REGIONAL ASPECT OF MONETARY TRANSMISSION: THE ROLE OF BANKS AND FIRMS................................................................. 63

Sandra Bailoa, Pedro Cravo
SPATIAL PLANNING AND TOURISM DEVELOPMENT IN PORTUGAL............. 77

Sandra Bailoa, Paulo Resende da Silva
CASE STUDY IN INTELLECTUAL CAPITAL AND TERRITORIAL DEVELOPMENT: ANALYSING PORTUGUESE LOCAL GOVERNMENTS WEB PAGES................................. 89

Jiří Dušek
COEFFICIENT OF FACILITIES AND ITS USE IN THE SOUTH BOHEMIAN REGION..... 107
BOSCH DIESEL AND ITS IMPACT ON THE SOCIOECONOMIC DEVELOPMENT OF THE VÝSOČINA REGION

Václav Toušek, Ondřej Šerý

Department of Geography, Palacký University in Olomouc
tousek@prfnw.upol.cz, sery@prfnw.upol.cz

ABSTRACT

The paper deals with the influence of a large industrial enterprise on regional development. The Robert Bosch Company of Stuttgart was chosen as an example, and the Vysočina Region was selected as a model region. “Bosch” started its business in Jihlava, the capital of the Vysočina Region, in 1993, when it founded the Bosch Diesel Company, specialized in the manufacture of pumps for diesel engines. In Jihlava the company gradually expanded the production in a significant way. The number of employees exceeded 6000 and the company became the largest industrial enterprise in the Czech Republic established by a foreign investor “in the green belt”. The paper also analyzes the influence of Bosch Diesel on the situation in the labour market in the Jihlava District and Vysočina Region; special attention is paid to the period of economic crisis. In addition to the labour market the paper also explores further influence of Bosch Diesel on the socioeconomic development of the Vysočina Region, especially on the sphere of education, health and social care.

KEYS WORDS

Industry, Bosch Diesel, Vysočina Region, socioeconomic development

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INTRODUCTION

The impact of large manufacturing enterprises on the development of a specific region is one of the important topics relating to broad issues of the regional development. In the Czech Republic, however, there are practically no more regions in which just one industrial company would have a dominant influence not only on the employment in these territories, but also on the overall life of the local population. The only exception is the company Škoda Auto, the influence of which on the extensive population in the Mladá Boleslav region is very considerable. Other large industrial companies in the Czech Republic do not influence the development of regions so markedly, but still affect parts of it. Bosch Diesel in Jihlava can be counted as one of them; it has significantly influenced the life of the inhabitants of the town, district as well as the Vysočina Region since early 2000, when the dynamic growth of the number of its employees began. This paper is dedicated to the influence of Bosch Diesel on social and economic development of the Vysočina Region.

The aim of the authors was to objectively assess the operation of this company, especially in the labour market situation of the region under study, from the inception of this company in Jihlava until today. Attention was focused not only on the positive side effects of the company, but also on the negative
aspects associated with the dismissal of workers in times of crisis or with the absence of the company’s own research and development centre. The paper also deals with quite significant sponsoring activities of the company, which are based on the philosophy of the parent company, Robert Bosch, with the head office in Stuttgart. The article is based on the findings acquired in a series of interviews with the representatives of the company management and local governments - both of the town of Jihlava and Vysočina Region, with the employees of the Labour Office in Jihlava and with randomly selected citizens, including the employees of the studied company.

1 INDUSTRIAL ENTERPRISE AND ITS IMPACT ON REGIONAL DEVELOPMENT: A BRIEF SURVEY OF WORKS FOCUSING ON ECONOMIC-GEOGRAPHIC AND REGIONAL ECONOMIC RESEARCH IN OUR COUNTRY

The topic of the analysis of the impact of industrial firms on regional development in transition economies has been relatively neglected in the professional geographic literature in the last twenty years. The causes can be found in the changing political, social and economic conditions after 1989, when the structure of the economy moved away from large enterprises with numerous staff to the economy dominated by small- and medium-sized companies. Another reason was a lack of data, or often reluctance of the companies themselves to provide any information.

The question of the impact of specific industrial plants on the development of the region, however, was not addressed very often even in the past. This was not so much due to possible delays in the development of industry in our country compared with some developed countries in Europe, but to the fact that the economic (or social) geography was relatively underrepresented in academic workplaces. The geography of industry in Czechoslovakia was not long established as a separate scientific discipline of economic geography. In this respect, other economic-geographical disciplines, such as geography of population or geography of settlements, had a far better position. The beginnings of the geography of industry in our country originated in the second half of the fifties of the 20th century. In 1958, K. Ivanička published in Geografický časopis SAV (Journal of Geography, Slovak Academy of Sciences) a fundamental article “Subject, Methods and Developmental Directions of the Geography of Industry”, in which he - among others - also addressed the relationship between industrial enterprises and regional development. A study of Bratislava geographers on Východoslovenské železárny (East-Slovakian Iron Works) (K. Ivanička et al. 1964) can be considered the first major Czechoslovak geographic monograph devoted to the impact of an industrial enterprise on regional development.

Of the Czech economic geographers this issue was mainly addressed by geographer L. Mištera from Pilsen, who in 1979 defended his doctoral dissertation titled “The Geography of Plants”. It deals mainly with Západočeské keramické závody (the West-Bohemian Ceramics Plant) in Horní Bříza, the share of which in the total employment in the Pilsen-North district reached nearly ten per cent (see L. Mištera, 1967). A relatively broad reaction was raised by the study of Prague geographer M. Šťífa of 1968, dealing with the influence of Tatra Kopřivnice on the development of the Nový Jičín region. The knowledge of the impact of large industrial plants on the development of the region in the era of centrally planned economy was generalized by the Ostrava geographer, P. Šindler (1976).

After 1989, the greatest interest not only of economic geographers, but also of regional economists focused on the evaluation of the ongoing process of economic transformation in the Czech Republic. Particular attention was paid to the structurally affected regions such as the Ostrava region and the brown coal mining district in Central Bohemia. Of the many works of both basic and applied research of regional economists at Ostrava VŠB - Technical University we can name the monograph of J. Sucháček
(2005), in which the author focused on the restructuring of traditional industrial regions in transition economies.

Large industrial companies and their influence on regional development have been studied by geographers at Charles University and Masaryk University. The interest of Prague geographers has focused primarily on companies doing business in the automotive industry in Europe (recent works for example include an article by P. Pavlínek and J. Ženka, 2010). Logically, the greatest attention is paid to the role of the Škoda Auto company based in Mladá Boleslav (for example P. Pavlínek, 2003; P. Pavlínek, L. Janák, 2007). In the second half of the nineties Brno geographers were mainly interested in their research concerning the effects of the electrical company AVX Czech Republic (J. Kunc et al., 1998). The American company AVX Corporation created more than 4,000 new jobs in Lanškroun; in terms of the number of the jobs, if we exclude Škoda Auto, it was the biggest investment in the Czech Republic up to 1999. In the current decade, an industrial company that has become a focus of the systematic consideration of geographers from Masaryk University, is the Jihlava company Bosch Diesel (V. Toušek, P. Tonev, 2002; J. Kunc, 2006; V. Novák, 2007; V. Toušek, V. Novák, 2009; O. Šerý, 2010). The issues concerning the impact of not only the headquarters of large industrial companies, but also of banks has recently become the subject of basic research of regional economists from VŠB - Technical University (see J. Sucháček et al., 2007).

Under socialism, the economy was greatly influenced by large industrial manufacturing companies, which often employed thousands of people and were prominent actors of regional development, but in a slightly different sense than at present. Industrial companies often had a decisive influence on housing development in cities and city back areas and financially influenced cultural and sporting events in the region. Sponsorship of activities outside the businesses was practically non-existent. The share of some industrial plants in total employment in the district was more than a quarter, as was the case of Škoda in Pilsen, Poldi in Kladno or the automotive factory in Mladá Boleslav (see Table 1). The survey does not include mining giants such as the state-owned enterprises of the Ostrava-Karviná district and the North Bohemian brown coal district.

### Table 1: Manufacturing enterprises with the greatest shares in total employment within the district in 1989

<table>
<thead>
<tr>
<th>No.</th>
<th>Company name</th>
<th>Number of employees (in thousands)</th>
<th>Percentage share in district total employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Škoda Plzeň</td>
<td>33.4</td>
<td>30.5</td>
</tr>
<tr>
<td>2.</td>
<td>Poldi Kladno</td>
<td>19.0</td>
<td>26.1</td>
</tr>
<tr>
<td>3.</td>
<td>AZNP Mladá Boleslav</td>
<td>14.6</td>
<td>25.4</td>
</tr>
<tr>
<td>4.</td>
<td>Tatra Kopřivnice</td>
<td>15.7</td>
<td>21.9</td>
</tr>
<tr>
<td>5.</td>
<td>ČZ Strakonice</td>
<td>6.9</td>
<td>19.4</td>
</tr>
<tr>
<td>6.</td>
<td>Třinecké železáry</td>
<td>17.8</td>
<td>17.9</td>
</tr>
<tr>
<td>7.</td>
<td>Chemické závody Litvínov</td>
<td>11.1</td>
<td>16.0</td>
</tr>
<tr>
<td>8.</td>
<td>Vítkovické železáry</td>
<td>35.0</td>
<td>15.9</td>
</tr>
<tr>
<td>9.</td>
<td>Svit Zlín</td>
<td>16.9</td>
<td>15.5</td>
</tr>
<tr>
<td>10.</td>
<td>Válcovny trub Chomutov</td>
<td>7.8</td>
<td>13.4</td>
</tr>
</tbody>
</table>

Currently, such high values have been reached only by Škoda Auto in the Mladá Boleslav District, where 21.6 thousand people were employed in mid-2010. This represented the share of 27.6% in total employment of the District, which is the higher proportion than in 1989. Other major industrial firms do not now get over even the limit of 10%. Nevertheless, three exceptions should be noted, which significantly exceed today’s Czech average. The second highest percentage of 8.7% is reached by Bosch Diesel in the Jihlava District, which employs 5.1 thousand people. Bosch Diesel is followed by the Třinecké železárny Steelworks in the Frýdek-Místek District with the employment share of 5.5% and 5.3 thousand people employed, and ArcelorMittal with its share of 4.5% in the Ostrava-město District, employing 6.9 thousand people. At this point, however, it should be stressed that the majority of large industrial employers does not have its head office (parent company) located in the Czech Republic, but abroad.

2 ROBERT BOSCH IN THE WORLD AND IN THE CZECH REPUBLIC

Robert Bosch GmbH was founded in 1886 in Stuttgart, Germany, originally under the name Workshop for Precision Mechanics and Electrical Engineering. Today the company targets are much broader; it is active in many areas: automotive technology, power tools, household appliances, packaging machinery, automation equipment, thermal equipment and security technology. One of the largest industrial companies in Germany has developed from a small workshop; it is active all over the world as well. The products carry the famous names: Bosch, Blaupunkt, Junkers, Buderus, Dremel or Rexroth.

International expansion started as early as 1898, when the first representation of the company outside Germany was established in London. A year later it was followed by Paris. Currently Bosch has 275 manufacturing plants and sales offices in sixty countries (of which 162 are outside Germany); at the beginning of 2010 they employed more than 270 thousand people. In Germany, Bosch had more than 110 thousand employees. More than ten thousand employees worked in the U.S.A. (17.0 thousand persons), India (15.3 thousand persons), Brazil (14.2 thousand persons) and China (12.4 thousand persons). The Czech Republic ranked among the countries in which the number of employees ranged from 7,500 to 10,000 persons (which also applied to France, Japan and Spain).

The company has managed to reach such a successful position also due to its own intensive research and development. Worldwide, more than 20,000 scientists, engineers and technicians are working for Bosch on improving the performance and reliability of existing products and developing new products and systems. Annually Bosch reports from 2,500 to 3,000 new patents. The Bosch Research Centre in North America in Palo Alto, California, closely cooperates with the University of Stanford.

Bosch differs from other companies not only by its versatility and broad range of products, but also by its legal and social structure. Since June 1964 Bosch has belonged among the largest industrial foundations in the Federal Republic of Germany. Currently the Robert Bosch GmbH Foundation owns 92% of the share capital of Robert Bosch GmbH. The basis of the Foundation was constituted by the last will and testament of Robert Bosch (died in 1942). The Foundation manages the assets of the company with regard to social benefits and uses profit contributions from Robert Bosch GmbH for socially beneficial purposes. Areas which the Foundation supports include public health care - for example through medical facilities in Stuttgart (Robert Bosch Hospital, Dr. Margarete Fischer-Bosch Institute of Clinical Pharmacology, and Institute of Medicine History), understanding between peoples, education and training, arts and culture, as well as spiritual, social and natural sciences. Since 1964 up to the
present the Foundation has spent 750 million euros on the above purposes. In recent years, the Robert Bosch Foundation donated around 60 million euros annually for publicly beneficial projects.

Apart from the Robert Bosch Foundation, shares amounting to 7% are owned by the Robert Bosch family, and one percent by the company Robert Bosch GmbH. The vast majority of the voting rights (93%), however, is held by “Robert Bosch Industrietreuehand KG” (Industrial Union of Robert Bosch), a limited partnership composed of former members of management, representatives of the Bosch family and other prominent industrialists. The remaining 7% of votes are directly owned by descendants of Robert Bosch.

Ninety-six percent of the company’s net profit is re-invested into its development. Nine percent of the profit is invested in research and development of the company’s core business activities, namely the automotive industry; this amount is double of what is usual in this field. The production of technologies, parts and accessories for the automotive industry accounts for more than 50% of the Robert Bosch worldwide annual turnover. The company is the world’s largest supplier in this field. The division of household appliances and power tools accounts for almost 24% of the company’s total turnover. With regard to turnover this division is followed by the division of packaging technology, which primarily includes the manufacture and installation of packaging lines for manufacturers of food products. In this field, Bosch is also the world’s largest supplier.

The maximal turnover was reached by Robert Bosch in 2007, when it exceeded - for the first time - 45 billion euros (exactly 46.320 billion euros). The net profit for this year amounted to 2.850 billion euros. The decline of sales in the third and especially in the fourth quarter of 2008 was reflected in the 2008 business income. The turnover fell to 45.127 billion euros. The decline of global automobile production in 2009 caused the fall of the turnover in 2009 to 38.174 billion euros and after a very long time the company experienced an annual loss of 1.214 billion euros. The company was forced to lay off workers. The annual decrease was about 8,000 employees. During this year another approximately 100,000 workers worked under short-time working conditions. A slight increase in sales was already evident in the fourth quarter of 2009. The company management expects that 2010 will again show profit.

Bosch had already operated in the Czech territory since 1899, when it began to supply the Mladá Boleslav Laurin & Klement Company (predecessor of the current company Škoda Auto) with components for the manufacture of motorcycles and subsequently automobiles. Dealership was established in Prague in 1920; even a new building was built for the purpose five years later. After the Second World War the company had to leave Czechoslovakia; it came back again only in 1991.

At present, several plants of the Bosch Group can be found in the Czech Republic: Robert Bosch, spol. s r. o., Bosch Diesel, s.r.o., Bosch Rexroth, s.r.o., and Bosch Termotechnika, s.r.o.

The Robert Bosch plant was founded in 1992 in České Budějovice in the form of joint venture with the Czech firm Motor Jikov. In 1995, the Bosch Group became its sole owner. Approximately two thousand employees have been involved in the production and development of components for passenger cars with petrol engines. The main production program consists of tank fuel pump modules, intake modules, cylinder head covers and electronic accelerator pedals.

Bosch Diesel was established in Jihlava in 1993, again as a joint venture, this time with the engineering firm Mororpaal Jihlava. Three years later, even in this case Bosch Diesel became the sole owner. The company is engaged in the manufacture of components for automotive engineering - for diesel engines; as mentioned above, it employs more than 5,000 people.
In 2001, the Robert Bosch company took over the representation of the German company Mannesmann Rexroth in Brno (which had operated in the Czech market since 1990). From the subsequent year this company began using the name Bosch Rexroth. Today there are about 200 employees, and the production is focused primarily on hydraulic systems.

In 2003 Bosch took over the German company Buderus Heiztechnik, by which it also acquired a majority share of the traditional Czech manufacturer of hot-water boilers Dakon (founded in 1949). Company headquarters moved to Prague; the production plants remained in Krnov and Město Albrechtice and employ about 400 people. Even though the company began using a new name Bosch Termotechnika, it continues to deliver products to the Czech market under the traditional brand Dakon.

3 THE BEGINNINGS AND HISTORY OF BOSCH IN JIHLAVA

A key factor for the decision of Robert Bosch GmbH to develop its activities in Jihlava was the presence of the basic plant and management of the company Motorpal - a well-known manufacturer of systems and components for fuel injection in diesel engines. Following the decision of the Czechoslovak government to industrialize the Českomoravská vysočina Highlands, the foundations were laid in 1946 of a new engineering company in Jihlava, the national company Pal Jihlava, as a branch plant of the company of the same name headquartered in České Budějovice and later in Prague. By the decision of the Ministry of Industry of the Czechoslovak Republic of 26 July 1949, the Jihlava plant became independent and in early 1950 changed its name to Motorpal Jihlava, the national company with the production program already at that time focused on the production of injection equipment for diesel engines. At a later time the new company integrated some other engineering plants, mainly in the Českomoravská vysočina Highlands, so in the late 80s of the 20th century it employed more than 5.3 thousand employees. In Jihlava alone 2.7 thousand people were employed; in other plants of the Vysočina Region it was more than 2.2 thousand people (Telč, Batelov, Havlíčkův Brod, Jemnice, Velké Meziříčí), and about 400 more employees worked in the South Moravian town of Znojmo.

As mentioned above, Bosch Diesel was established in Jihlava in early 1993 as a joint venture with Motorpal Jihlava, on the premises of which a new hall was built. Motorpal contributed land and a hall under construction to the joint venture, Bosch placed at its disposal its technology and machinery and finished the construction (today’s Plant I - Humpolecká). A majority stake (76%) was allotted to Bosch, which bought the remaining minority stake from Motorpal in October 1996. Bosch thus became the sole owner of the company, but this fact in no way disturbed the subsequent cooperation. Motorpal is still one of the largest suppliers of Bosch. An important role in the decision of the Stuttgart company to invest in the Vysočina Region was certainly played by a favorable geographic location of the town of Jihlava, which lies by the D1 motorway between two major conurbations in the Czech Republic - Prague and Brno.

Since the beginning of its activities in Jihlava, Bosch Diesel has also focused on the production of components for automotive diesel engines; the production program, however, has been gradually varied. The initial production of single cylinder pumps was completely moved to Turkey and replaced by the production of components of the Common Rail system. The principal product was a pump CP3. But already in the second half of the 90s of the 20th century the original plant on the premises of Motorpal no longer sufficed to the gradual expansion of the company. In 1999, Bosch Diesel grew up by renting Alfatex, the former Jihlava textile factory (today’s Plant II - Na Dolech), and by constructing the first hall of the new Plant III at Pávov. A joint venture of Robert Bosch GmbH and the Italian Magneti Marelli
S.p.A. Group was also built in 1997 in Pávov; it was named Automotive Lighting and has been engaged in the production of automotive lighting technology. In 1999 it came under a one-hundred percent control of Italians.

A significant milestone in further development of the company was the year 2001. Under the influence of the growing demand for cars with diesel engines, Bosch decided to significantly increase the production and began the building of another hall for the production of high-pressure pumps. This step became one of the largest investment projects in 2001 in the Czech Republic and Bosch received investment incentives for it in the form of income tax relief and exemptions from import duties. Moreover, Bosch committed itself to invest 8.5 billion Czech crowns by 2003. While previously the parent company perceived the České Budějovice plant as a major business enterprise in the Czech Republic, after the investments around 2001 the focus of interest of the company moved to Jihlava. In the same year, Bosch Diesel replaced the Žďas engineering company based in Žďár nad Sázavou on the site of the largest industrial enterprise in the Vysočina Region.

The production focus of all three Bosch Diesel plants gradually evolved into the following form. Plant I is responsible for series repairs of diesel pumps. Technicians in this plant, inter alia, determine what can be repaired and what needs to be replaced. This procedure helps Bosch to protect the environment and conserve natural resources. Plant II deals with the production of high-pressure containers, called rails, through which fuel is injected into the engine. Plant III produces high-pressure diesel pumps. A pump of the CP3 series is produced within the whole Robert Bosch Company only in Jihlava. Since 2008, a pump CP4 has been also produced in Jihlava; CP4 is the most modern Bosch pump, after which the market demand keeps increasing.

4 INFLUENCE OF BOSCH DIESEL ON THE LABOUR MARKET SITUATION IN THE VYSOČINA REGION

For the duration of its operation in Jihlava, Bosch Diesel has become a major player in the labour market of the Vysočina Region. It is the company the size and economic performance of which exceeds other industrial enterprises in the Region. The development of the numbers of employees at Bosch Diesel in the period from the founding of the company until the end of 2007 is shown in Picture 1. During the 90s of the 20th century the number of workers grew slowly. With the start of production in Plants II and III at the beginning of this decade the employment grew from nearly 800 people to more than 4,100 people during the two years 2000 and 2001. In subsequent years, similar growth never took place, although over the years 2004 and 2005 the number of workers increased by more than 1500.
The offer of a high number of jobs in Bosch led to stabilization of the labour market in the Region. Before the end of 1997 the unemployment rate in the Jihlava District and Vysočina Region had been above the national average. Particularly thanks to Bosch this situation changed. And it was not only about those employed at Bosch Diesel. As mentioned above, the parent company played an important role in the establishment of the Automotive Lighting Company, which in 1999 employed 450 people. At the end of 2000, the number of its employees exceeded the level of 800 and at the end of 2007 it was employing nearly 1800 workers.

Bosch Diesel also had had indirect effects on employment: providing they met specified conditions, Bosch has always preferred Czech companies as subcontractors. It should be noted, however, that many Czech suppliers are unable to meet the established criteria. The exceptions in the Vysočina Region are already mentioned Motorpal Jihlava (dealing with unit injectors) and Mars Svratka (galvanic surface treatment). Bosch also had a decisive influence on the expansion of the transport company Jipocar Transport, s.r.o., which is now one of the major transporters in the Czech Republic. In 2001 – 2008, Jipocar Transport built a new headquarters and logistics centre of six halls at the 112th kilometre of motorway D1 in the territory of the Střítež village not far from Plant III in Pávov and from the Automotive Lighting Company. In two halls assembling and shipping takes place only for Bosch Diesel (other two halls are at the disposal of Automotive Lighting).

Picture 2 best shows the influence of Bosch Diesel in the labour market situation in the Jihlava District and throughout the Vysočina Region; it illustrates the evolution of unemployment in both analyzed spatial units and in the Czech Republic even in the period before the beginning of the economic crisis. At the end of 1997 the unemployment rate in the Jihlava District was the 33rd highest in the group of 77 districts of the Czech Republic, and the Vysočina Region had the fifth highest unemployment rate of the 14 regions of the CR. The extraordinary increase in the number of employees in Bosch in 2000 and 2001 meant that the unemployment rate in the Jihlava District at the end of 2001 was the 19th lowest among the CR districts and in the Vysočina Region the 6th lowest among the CR regions. Even in subsequent years until the end of 2007, the Jihlava District kept its position among the one third of the districts with the lowest unemployment rate in the Czech Republic.
The increased importance of the work-related function of the town of Jihlava at the end of the 1991-2001 intercession period was also shown by the data on commuting to work acquired during the last census in 2001. Thanks to Bosch, Jihlava ranked among the towns in the Czech Republic with the greatest increase of the number of commuters. While in 1991, 8.3 thousand people commuted to work from other municipalities, it was already 11.5 thousand people in 2001. The number of commuters to Jihlava increased by 38.7%. A more significant relative increase in the nineties of the 20th century in the Czech Republic took place only in the towns of Mladá Boleslav, Liberec and Prague. In the ranking of towns in the CR according to the number of commuters Jihlava moved from the 27th place to the 12th place within ten years (1991 - 2001). About one third of employees had their permanent residence in Jihlava itself. The remaining two thirds commuted - not only from the district of Jihlava, but also from more distant villages around Třebíč and Havlíčkův Brod. Especially important seems to be the commuting to work from the Třebíč District, which belongs among the territories with the biggest problems in the labour market (higher rates of unemployment, lack of vacancies). Picture 3 shows that already at the beginning of this decade Jihlava belonged among the regional towns which positively affected the unemployment rate in many municipalities throughout the Region.
Picture 3: Share of Bosch Diesel employees in the total number of employees in the municipalities of the Vysočina Region as at 30 April 2006


Bosch Diesel experienced the first signs of the economic crisis in April 2008 when some customers from the U.S.A. renounced their contracts; this was followed by first shutdowns in the production. At that time the company had the most employees since its arrival in Jihlava: 6,347 people. The situation kept worsening in July and August 2008. There was no work for some employees, so they had to stay home for 80% of salary. Another reason contributing to this situation was that also other customers reduced the number of items shortly before their delivery. With few exceptions the company ceased to extend temporary contracts. Bosch was also harmed by the unfavourable exchange rate (its influence caused price increases of products abroad and undermined the competitiveness) and by expensive oil. In spite of this the company began the production of new pumps, CP4, and intended to increase the annual production volume (although estimates had been reduced).

In September 2008 the first two shifts were shut down, with the compensation of salaries in the amount of 60%. In late October, first dismissals took place due to the low yield (the company did not want to create stock). Workers were informed two months in advance; the final number of redundancies was modified in September according to orders received from customers. Finally, this measure affected 29 assembly workers. Bosch still considered this situation as normal variations in the automotive market.
From 27 October to 29 October, the operation of the whole plant was halted. The number of negotiated contracts for the first quarter of 2009 kept decreasing, and a decision was made to start a second wave of layoffs. This time it affected 125 blue-collar workers, who left at the end of November. The employees dismissed in the first phase of redundancies worked for another two months - for the duration of the notice period; in the second phase the layoffs were paid for this period straight away without going to work. Both groups were also entitled to compensation according to the number of years worked for the company (from the statutory triple to the sextuple of the average wage). Shifts started to be planned one month in advance; the production which used to be continuous showed more and more irregularities. However, the economic crisis kept deepening, and the third wave of layoffs was announced; at the end of 2008, 343 employees received a notice.

Picture 4: The numbers of Bosch Diesel employees during the global economy crises

As shown in Picture 4, the number of employees of Bosch Jihlava decreased by 500 in 2008 - to 5.7 thousand people. But from the point of view of personnel, a much worse situation was yet to occur in the subsequent year. During the first half of 2009, the number of workers declined by about 1,000 compared to the beginning of 2009, and in the second half by additional 500. The introduction of scrappage in many European countries helped more to the Robert Bosch plant in České Budějovice, which focused on making components for petrol engines. The impact on the Jihlava manufacturer of injection pumps for diesel engines was minimal (only German scrappage contributed to a partial recovery after the summer holidays of 2009). In addition to the releasing of staff, the company management had to also address the issues of the declining number of contracts and shortening of working hours. Only in the autumn of 2009, some plants began returning to a five-day working week. In the last months of 2009 the number of orders increased so much that a part of the production was in operation even over the Christmas holidays. The decline in the number of employees also stopped. The number of employees reached its minimum at the end of December 2009: 4,180. Since then, Bosch has received the employees back (see the picture above).
The dismissal of employees in connection with the global economic crisis in a number of industrial enterprises significantly influenced the increase of unemployment in the whole of the Czech Republic. Although the crisis had a rather flat character and contributed more to the balancing of regional disparities in the territory of the Czech Republic, there were regions with a high unemployment growth. While unemployment in the Czech Republic during the period from September 2008 to December 2009 increased by 3.9 percentage points, in the Vysočina Region this increase was 5.1 points (from 5.2% to 10.3%). In the 14 regions of the Czech Republic, higher increase in unemployment during this period was recorded only by the Moravian regions of Olomouc and Zlín. A similar increase as the Vysočina Region was experienced also by the Jihlava District (see Picture 5).

**Picture 5: Trend of unemployment rate in the Jihlava District, Vysočina Region and Czech Republic in the period from 31 December 2007 to 30 September 2010 (at the end of each quarter)**

![Unemployment rate graph](image)

*Source: Ministry of Labour and Industry of the Czech Republic – Portál zaměstnanosti (Employment Portal), 2010*

Even at the end of 2007, the rate of unemployment in the Jihlava District reached the value of 5.0% (in the whole of the CR it was 6.0%), and in mid-2008 even decreased to 4.1%. The dismissal of 500 workers from Bosch Diesel in the last quarter of 2008 was also reflected in the fact that at the end of 2008, Jihlava showed the unemployment rate already of 6.0%, which was the same figure as the country value of this indicator. In the subsequent months the Jihlava District had a higher unemployment rate than the CR. At the end of 2009, its unemployment rate approached the limit of 10% (Jihlava District - 9.9%, CR - 9.2%). Although in the first quarter of 2010, Bosch began slowly recruiting new employees, the unemployment rates in the Jihlava District increased to 10.2% due to other employers. In mid-2010 the rate is already lower in Jihlava (7.8%) than in the Czech Republic (8.5%). However, the entire Vysočina Region has not yet reached the level of unemployment of the whole country; this fact applies even at the end of September 2010. The above data confirm quite a strong dependence of the labour market situation in the Vysočina Region on the development of employment in the Region’s largest industrial concern, Bosch Diesel. The above-average salary levels in this company (wages are about one third higher than the regional average) have, among others, a direct effect on increasing the wage level of the population of the whole Region.
5 NON-INDUSTRIAL ACTIVITIES OF BOSCH DIESEL

The management of Bosch Diesel pays particular attention to education of the company’s workers. The educational level of employed population in the Vysočina Region is lower than the average of the whole country. In 1999, i.e. prior to the dynamic growth of the number of employees of the company monitored, the share of employed persons with secondary education with the General Certificate of Secondary Education or university education in the Vysočina Region was 41.3% (in the Czech Republic it was 46.4%). Ten years later, this share in the Vysočina Region for the first time exceeded the level of 50% and reached a value of 51.5%. This has brought the Region significantly closer to the nationwide average value, which was 55.2% in 2009. Bosch Diesel has partly contributed to this situation as it has become attractive not only for the local population but also for people with higher education from other regions of the Czech Republic.

Previously, Bosch did not focus so much on the quality of education of employees and more or less accepted everyone. Today it has a plant school on its premises where the employees can study for three semesters (1.5 years); no employee may proceed to a better position without the graduation from this school (alternatively, he or she must demonstrate an equivalent level of education). Bosch cooperates with the Jihlava Secondary Technical School. The first foundations of cooperation were laid in 2002. Students carry out their practical exercises in the plant school. In addition, they have an opportunity to receive a scholarship from the company, but must commit themselves to work in the company for a number of years.

However, Bosch Diesel did not succeed in full implementation of all projects in the field of education. Bosch was involved in the formation of the College of Polytechnics Jihlava, which was established in Jihlava in 2004. Under an agreement signed in 2005, the College has cooperated with Bosch Diesel in the sphere of education, training and research; the company has also given the students an opportunity to perform their compulsory school practice there. Under this practice, the students of Applied Computer Science and Computer Systems prepare their theses, thus becoming involved in the addressing of partial research challenges of the company and of the College. Bosch has also cooperated with the College on the implementation of the bachelor’s study program “Engineering”, which was carried out at the College in cooperation with the Technical University of Liberec and Brno University of Technology. This program was implemented, but only in the period 2005-2008.

Despite some of those positives, however, a problem still remains that about 55% of company workers do not own the General Certificate of Secondary Education (in other larger engineering firms in the Region this proportion is lower). Moreover, in the Vysočina Region there is a general shortage of university graduates in engineering fields. This situation had demonstrated itself significantly when in 2005 and 2006 the management of the company considered the construction of a development centre in Jihlava, which was supposed to employ about one hundred of highly qualified workers. Given that such a number of candidates (who would meet the requirements) could not be found on the Czech market, the plan was dropped and the development centre was established in Abstatt in the central part of Germany.

Besides the sphere of education, the Jihlava pump manufacturer is significantly involved also in health and social care sectors. Bosch has long cooperated particularly with the Jihlava hospital. Among other things, the company recently helped the hospital with financing the purchase of new equipment for monitoring the respiratory function of newborn babies. This device is supposed to prevent the sudden
infant death syndrome. By purchasing the equipment Bosch sponsors not only the hospital in Jihlava, but also other hospitals in the Vysočina Region. In the field of social care, a civic association Život 90 (Life 90), seeking to improve the lives of seniors and disabled, enjoys the support of the Jihlava company. As to the company’s other activities in the Vysočina Region, we may name but a few: the support of the Gravid Centre (help to pregnant women), the support of the subsidized organization Sociální služby města Havlíčkův Brod (the Havlíčkův Brod Social Services) or - outside the Region - the support of the civic association Jasněnka in Uničov (dealing with complex care for disabled children and adults). The company also promotes culture and sport. Bosch Diesel has certainly contributed to the strengthening of the Jihlava status as the centre of the Vysočina Highlands.

CONCLUSION

During the economic crisis, the concerns about the possible departure of Bosch Diesel from Jihlava intensified. The company resolutely rejects such considerations. By moving, the company could take advantage of cheaper labour, but relatively unskilled. Currently, a crucial element of decision-making is also a proximity to customers, logistics and road infrastructure; and these are the aspects which the countries lying east of the Czech Republic are still unable to offer. Customers also require comprehensive services (the company must often produce what is not financially attractive for it). The management also claims that the company has invested a large sum of money in the Jihlava plant, which has made it one of the most important and most modern plants for the manufacture of pumps for diesel engines in the world. However, over two-thousand workforce reduction during 2008 and 2009 was one of the largest declines in employment in manufacturing factories of the Robert Bosch automotive division. Nevertheless, the reduction of the demand for pump CP4 was never reflected in the decline of the number of employees in Feuerbach, Germany, which - beside Jihlava - produces the latest generation of pumps. Was the existence of the Robert Bosch headquarters in Germany the crucial aspect in deciding in which of the two modern factories to cut the production?

In the future (the next few years) Bosch Diesel plans to stabilize the number of employees to about 5,000 people (of whom 10-15% will be on temporary contracts, which will make it easier to cope with minor recessions). It considers this state as optimal. Originally it built a factory for 9000 workers, but was unable to find them. In Jihlava there is strong competition; in the most distinct form it includes the companies Automotive Lighting, Motorpal and Moravské kovárny (Moravian Smithy). In addition, with the modernization of pumps (the transition from an older version of CP3 to higher class CP4), advancing automation and robotization, the demand for labour work decreases and the growing importance of the skills increases.

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LARGE ENTERPRISES IMPACT ON OSTRAVA AGGLOMERATION – SELECTED ASPECTS

Lucie Holešinská
VSB – Technical University Ostrava,
lucie.holesinska@vsb.cz

ABSTRACT

The report addresses the impact of large enterprises on employment in the urban agglomeration of Ostrava. It also touches upon several other selected aspects. After defining the terminology, the report discusses allocation and share of the large enterprises for a given labour market. Furthermore, two short case studies are included – a traditional industrial business and a unique foreign greenfield investment. On these two examples, the impact on employment is elaborated and some distinctions of these significant regional agents are stated as well.

KEY WORDS

Economic crisis, employment, investment, large industrial enterprises, manufacturing industry and mining, Ostrava agglomeration

INTRODUCTION

The urban agglomeration of Ostrava is an old industrial region whose direction was given by abundant mineral reserves, especially the anthracite. It has belonged among the most important industrial regions of Central Europe since the 19th century. The region has undergone significant restructuring of its economic base and its effects have been very dramatic due to the sectorial structure of the economy. Due to intense restrictions on coal mining and the heavy industry, the unemployment rate started to grow notably; to this day, the region thus belongs to the structurally most damaged regions in the Czech Republic, struggling with one of the highest unemployment rates.

However, it should be emphasized that, within Central Europe, Ostrava agglomeration still belongs among the most important industrial areas with a significant share of the heavy industry (metallurgy, heavy engineering and mining). In recent years, the automotive industry has been developing dynamically there. Light engineering, the electro-technical and food industries, construction and plastics production are also of significance.

The large industrial enterprises have a strong tradition there and their impact on economic, social and environmental development is clear and fully apparent. As it would be very complex to discuss all of the effects without generalisation, the report concentrates on impacts related to the labour market.

The aim of the report is therefore an evaluation of the large enterprises’ impact on employment in Ostrava agglomeration on the basis of two examples of entirely different significant industrial companies – a traditional firm and a direct foreign greenfield investment. Subsequently, some fundamental differences between the two agents are noted in relation to regional development.
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1 FUNDAMENTAL TERMINOLOGY

In the introduction, there appear terms that need to be defined in order to clearly specify their usage – “Ostrava agglomeration” and “a large enterprise – significant company”. These terms are explained further.

1.1 Ostrava agglomeration

Generally, agglomeration can be defined as a specific grouping of mutually close inhabitations with some common existential attributes (close position, sectorial specialisation, common public transport etc.).

Should one of possible definitions be used, it can be stated that an agglomeration is “a geographic concentration of inhabitants and economic, social and other activities. It is a form of territorial concentration which connects established residencies into a single internally functional whole with strong interlinks, with which the needs of agglomeration elements and features are met and satisfied by relocating mass, information and energy. It is a socially and economically interconnected area whose residents are employed mostly in non-agricultural occupations. Agglomeration consists of a hierarchically higher core and its base” (Malinovsky, Suchacek, 2006: 25).

In relation to Ostrava agglomeration, there may exist more definitions of its territorial expression; it depends on the author (from Ostrava-Karvina basin to inclusion of the entire area of the Moravian-Silesian region – more detail in e.g. Suchacek, 2005). According to Malinovsky, the term “Ostrava agglomeration” can be seen in three levels – core, functionally-administrative and statistically-district (Malinovsky in Klasik, 2009). In the narrowest definition, Ostrava agglomeration can thus be specified only by eleven cities located in five districts of the Moravian-Silesian region¹. This definition thus presents agglomeration as towns that do not have to be imminently geographically linked, which is usually the case. Therefore, they are “specific disconnected town cores” (Malinovsky in Klasik, 2009: 198).

Should the functionally-administrative viewpoint be incorporated in the definition of Ostrava agglomeration, 127 communities can be included, out of which 11 consist of the aforementioned town cores that are responsible for carrying out the state administration in their respective areas. In this case, this means eleven administrative communities with extended powers.

The largest level (statistically-district) usually includes the areas of five districts in which the towns are located, specifically the district areas of Ostrava-mesto, Karvina, Frydek-Mistek, Novy Jicin and Opava. This last purpose-based definition of agglomeration is the basis for this study, mainly due to the availability and comparability of statistical data.

¹ In the Ostrava-mesto district, it means the regional capital Ostrava, in the Karvina district it, means the towns Karvina, Havírov, Cesky Tesin, Bohumin and Orlova, the Frydek-Mistek district then includes the towns Frydek-Mistek and Trinec. In the district area of Novy Jicin, the towns Bilovec and Koprivnice are considered the core towns of the agglomeration, and in the Opava district, Hlucin is considered so.
1.2 Large enterprise – significant company

According to the Czech Statistical Office (CSO) methodology, companies can be divided into micro-companies (1-9 employees), small companies (10-49 employees), medium companies (50-249 employees) and large companies (250+ employees). The same methodology is recommended by the International Labour Organisation (ILO), except for one difference – it does not distinguish micro-companies and thus determines only a three-level scale, where small companies have 1-49 employees.

It is clear from the secondary law of the European Union\(^2\) that a micro, small or medium company is any business that employs less than 250 employees and its yearly turnover does not exceed 50 million EUR, or its yearly balance sum does not exceed 43 million EUR. The sales quantity or balance sheets results are just as important but these figures are not normally accessible and to aggregate them at the district level would be very difficult.

On the basis of the aim of this report, the number of employees is established as the criteria of a company’s significance. According to the methodologies for categorisation of economic subjects, a significant company in terms of employment is a company which has 250+ employees, i.e. a large company.

2 THE LARGE COMPANIES ON THE LABOUR MARKET IN OSTRAVA AGGLOMERATION

Sectorial structure of the agglomeration economy corresponds to the character of the developed regions in which the services have the largest share of the economy structure. In 2009, there were 73.7 % of registered economic subjects in the tertiary sector, ‘only’ 23.6 % subjects in the secondary sector and the remaining 2.7 % fell into the primary sector (CSO, database KROK, 2010). In terms of employment, the ratio is not as distinct by any means. Construction is also placed in the secondary sector, but if we concentrate just on industry, we can talk about a 50 % employment on average, which internally fluctuates, dependent on district specialisation. For example, the share of employment in industry in the Nový Jičín district is 58.9 % while the services account just for 35.6 %. An entirely opposite trend can be seen in the Ostrava district where 36.5 % of residents work in industry and 58.1 % in the services. However, Ostrava is the regional capital where most of the tertiary operations are concentrated.

Therefore, the character of the labour market of Ostrava agglomeration is strongly influenced by the sectorial structure, then by the company size and the type of work in these companies. It was predominantly the earlier extensive development of the heavy industry that led to the growth of the employment share of this sector, and the creation of a specialised workforce, specific value visions and organisational forms, thanks to which the aforementioned restructuring was exceptionally difficult (Maier, Tödling, 1998). The influence of the large enterprises is continuously substantial.

2.1 Territorial configuration and the large enterprises share in employment

Territorial concentration of the large enterprises is defined by the character of location conditions of a specific region. Their existence is a reflexion of the primary commodities variety, sectorial and commercial relationships, availability of workforce etc. Figure 1 shows the number of registered economic subjects in the districts of the agglomeration with 250+ employees.

\(^2\) The Committee action (ES) no. 800/2008.
To 31st December 2008, there were 217 large enterprises registered in Ostrava agglomeration; the number dropped down to 210 as a result of the economy crisis in 2009. Their activity falls typically into the secondary sector.

If the situation is compared district to district, the graph shows the dominance of the large enterprises in the Ostrava region (45.1 % from the overall number of the large enterprises in the agglomeration). This region is also characterised by a many times higher number of companies with 1000+ employees if compared to the other districts. The large companies are further concentrated in the following districts: Frydek-Mistek (15.7 %) and Karvina (15.7 %), Novy Jicin (12.9 %) and the least in Opava (10.6 %).

To the same date, these large companies employed 53 % of all employed people (Employment Agencies in Moravian-Silesian region, 2010) in Ostrava agglomeration, which is a very significant share. If employment is compared within the scope of the aforementioned company categories (small, medium, large), it can be said that the large companies clearly achieve the highest share of the overall employment in the agglomeration, with the exception of the Opava district where the medium companies share is slightly bigger – see Figure 2. In district division, the large companies’ share of employment constitutes, for example, 55.6 % in the Ostrava-mesto district, the largest numbers being achieved by the firms with 1000+ employees. This means that ‘just’ 98 companies (see Figure 1) give work to more than half of all employees in the specified district. From the employment chart pie at map figure, the large enterprises form 48 % of employment in the Frydek-Mistek district, 42 % in the Karvina district, 38 % in the Novy Jicin district and 39.2 % in the Opava district, where the employment in the medium companies exceeds by less than 3 %.

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3 Data of firms with 26+ employees registered only.
Figure 2: Share of employees according to company categories (small, medium, large) in districts of Ostrava agglomeration (to 31st December 2009)

Source: Employment Agencies in Moravian-Silesian region, 2010

2.2 The large enterprises in manufacture

The largest employers in the agglomeration are manufacturing firms, particularly the ones in the sectors of the base metals production, metallurgic processing of metals, production of metal constructions and fabricated-metal products, and also in the production of motor vehicles and other transport means and components. In 2008, employment in manufacturing reached 39.8 %, 37.2 % in 2009 respectively, which is also the highest share in employment as classified by CZ-NACE\(^4\).

Among the most significant employers in manufacturing belong Arcelor Mittal Steel Ostrava, a.s. (metallurgic primary production, production of metallurgic final products and mechanical engineering production), Trinecke zleznarny, a.s. (metallurgic production), Pegatron Czech, s.r.o. (originally ASUS Czech, s.r.o., production, installation and repairs of electronic equipment), Visteon-Autopal Services, s.r.o. (development and production of automotive components), Hyundai Motor Manufacturing Czech, s.r.o. (production of automobiles), ZDB Group, a.s. (metallurgic processing of iron, steel and fero-alloys), Continental Automotive Systems Czech Republic s.r.o. (electronical and mechanical components of the automotive technology), Tatra, a.s. (development and production of trucks), Vitkovice Heavy Machinery,

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\(^4\) The total employment of the agglomeration in all sectors of the economy was 290,689 people in 2008; in 2009, it declined to 272,184 people (Employment Agencies of Moravian-Silesian region, 2010).
a.s. (mechanical engineering and metallurgic production, wholesale), Sungwoo Hitech, s.r.o. (automobile bodies production), Evraz Vitkovice Steel, a.s. (metal production, metallurgic processing of metals), and others.

**Figure 3: Employment share of the most significant firms in manufacturing to 31st December 2009**

![Pie chart showing employment share of firms]

Source: City Ostrava 2010, Employment Agencies, annual company reports

Despite not being immediately obvious, Figure 3 shows that the share of the abovementioned firms in employment in manufacturing is truly substantial. In order to strengthen this finding, it can be said that the displayed companies represented just 0.04% of the overall number of the 29,255 economic subjects registered in manufacturing in 31st December 2009; nevertheless, they were employing 28% of the total number of workers in this industrial sector at the same time, which means filling 30,440 workplaces.

However, an adverse side of the excessive dominance of the large companies in the region is a strong negative impact in case of problems or unfavourable economic development. This was demonstrated also in Ostrava agglomeration in line with the previous economic recession; its effect was mostly felt in the firms of the manufacturing sector, especially in the metallurgic and automotive sectors to which many suppliers are connected. For example in the Novy Jicin district, where many significant companies of the automotive industry are based, the impact of the economic recession was multiplied when the large companies such as Visteon-Autopal Services, Tatra, Continental Automotive Systems etc. started to discharge their employees en masse. During 2009, there was a decrease of 2,022 people (Employment Agencies Moravian-Silesian region, 2010). But the opposite situation can occur when a large enterprise stifles the negative effects on the regional employment, such as in the case of the automobile company Hyundai Motor Manufacturing Czech in the Frydek-Mistek district, which bolstered also the employment of its suppliers by increasing its production capacity.
The situation was also dramatic in the case of the metallurgy companies. Discharging was unavoidable in all of the abovementioned enterprises of this specialisation (Arcelor Mittal Steel, ZDB, Vitkovice Heavy Machinery, Evraz Vitkovice Steel) and many others. The employment suffered the worst in the district of Ostrava-mesto (-2,731 people), Novy Jicin (-1,629 people), Frydek-Mistek (-1,311 people) and Karvina (-1,156 people). However, other sectors of the manufacturing industry such as the production of electric equipment, the textile industry etc. were also affected (Employment Agencies in Moravian-Silesian region, 2010).

Since the manufacturing industry is the most significant sector of the agglomeration economy, a representative of a significant enterprise of the sector was elected in order to have impacts of its activities on employment analysed. Specifically, it will be an investment by Hyundai Motor Manufacturing Czech, s.r.o.

3 FIRST CASE STUDY – HYUNDAI MOTOR MANUFACTURING CZECH, S.R.O.

The reason behind the selection of this company was, despite a strong role of the traditional enterprises in this sector, its uniqueness as the biggest industrial investment in the region since 1989. It is therefore a suitable example and also an excellent opportunity to point out associated multiplication effects. First, let’s introduce the Hyundai (HMMC) investment.

3.1 Brief description of the investment

Decision-making about location of this investment was primarily influenced by the convenience of the sister enterprise KIA in Zilina in Slovakia. Having chosen the Czech Republic, the firm Hyundai was deciding between two regions of Ostrava agglomeration, Nosovice and Mosnov, and the town Holesov in the Zlinsky region. In 2005, Nosovice was selected and by 2006, the investment realisation contract, for which the company received investment incentives, was signed in Soul, South Korea.

Schedule for the investment realisation was divided into two phases. In the first one, the factory construction was begun (specifically in April 2007). By 2008, trial production was launched and in November of the same year, serial production was started. The only Hyundai automobile production concern in Europe is thus located in the industrial zone of 200 hectares, Nosovice, and it is also considered the most advanced factory in Europe. The construction alone and technological equipment are expected to incur 34,428.9 billion CZK by 2011. The national GDP growth due to the investment is estimated at approximately 1% per annum.

In the first phase of the investment realisation, Hyundai planned to create 2,700 new positions at a yearly production of 200,000 automobiles. In the second phase, i.e. at the full production of 300,000 automobiles per year, it aspires to increase the number of positions to approximately 3,500, which should be reached in 2011. The latest available total employees figure indicated over 2,200 filled jobs (Hyundai, in 1st September 2009), out of which 95% were taken up by Czech personnel.

The main factory elements are a stamping shop, welding shop, paint shop, assembly hall and transmission production. However, development and research are concentrated outside the region in Rüsselheim, Germany.
3.2 The multiplication investment effect on employment

Interest of investors from the automobile and related sectors in other industrial zones, especially the ones in Ostrava – Hrabova and Mosnov, increased considerably already before the factory construction. Consequently, their development has continued. Additionally to the construction of the Hyundai factory, a temporary positive effect linked with the increase of orders for local design and engineering companies was also construction of suppliers’ factories. This was associated with investments into the necessary infrastructure, which are still being realised. Nevertheless, the chief contractor of the Hyundai factory construction was its long-term partner, Takenaka from Japan; therefore, the effect of the local firms’ engagement was not as substantial. Furthermore, many Koreans and also Slovaks, who were sent out there contractually and returned home after concluding their tasks, participated in the construction and provision of technical operations of the factory.

The main space for action for the local firms arose primarily in the tertiary sector, particularly in interpreting, law, human resources and accountancy, and further in accommodation, food services, housekeeping, security etc.

But the most substantial multiplication investment effect can be deemed the arrival of the supply firms, both the direct suppliers of the first category and the foreign subsuppliers of lower levels, with the option of the local companies’ engagement. For the direct deliveries, Hyundai chose South Korean companies of which there are about ten in the region. Three of them are located directly in the industrial zone Nosovice (Mobis Automotive Czech s.r.o., Dymos Czech Republic s.r.o., Hysco Czech s.r.o.), the others reside in the industrial zones nearby.

The overall investment of the South Korean suppliers coming into the region as a result of the Hyundai investment amounts to 9,400.89 billion CZK. In addition, the number of the new jobs exceeds the Hyundai plan as it offers 3,800 new positions. The shares of the separate suppliers on the new vacancies can be seen in Figure 4.

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5 The direct suppliers deliver main components for the automobile production in the Hyundai concern (car bodies, plastics interior parts etc.) in the form of ‘just in time’ deliveries. These direct suppliers also have their own contractors – therefore, from the Hyundai perspective, they figure as subsuppliers.
The highest number of jobs is generated by the following companies: Sungwoo Hitech s.r.o. (industrial zone Ostrava-Hrabova), Mobis Automotive Czech s.r.o. (Nosovice), Plakor Czech s.r.o. (Mosnov) and Dymos Czech Republic s.r.o. (Nosovice).

The sum of the new jobs at the full operation of the Hyundai factory totals about 7,300 just in the regional Korean firms. A Hyundai brochure called ‘Hyundai, your good neighbour’ states that there can be up to 12,000 jobs associated with the HMMC investment. ‘Study of Hyundai investment effects on the Moravian-Silesian region’ from 2007 shows that the associated investment should create up to 8,000 new work positions. According to calculations in this study, the number of vacancies in 2011 generated as a result of the multiplication effect should reach 10,400 in the realistic scenario, and up to 13,200 in the optimistic scenario (more details about the methodology of the calculations are available in the aforementioned study, Regional Development Agency Ostrava, BermanGroup).

Figure 5 offers an opportunity to study the significance of the Hyundai investment from another viewpoint, namely in the scope of all realised investments in Ostrava agglomeration from 1998 to 2009 for which foreign investors had investment incentives granted.
15,993 new jobs were created as a result of the investment incentives during the illustrated twelve-year period. But as the graph clearly shows, the Korean investments made up 46% of them. If, for example, the subsuppliers from the Mosnov industrial zone are added, over half of the total jobs associated with this investment is reached. This is an example of other subsuppliers’ engagement.

3.3 Hyundai and the economic crisis

As mentioned before, the serial production and automobile expedition began in November 2008. However, the Nosovice automotive enterprise was not spared by the decline in demand and in January 2009, the production had to be lowered and the operation was shortened to just one working shift. Employee intake for the second shift was already restarted in March because the demand for new vehicles had grown. In November 2009, a new vehicle was introduced into the production and the production capacity increased to 200,000 automobiles per annum.

This development had a positive impact on both the suppliers and subsuppliers, so HMMC thus attenuated the crisis effects on the automotive industry. In fact, employment in this sector increased by 460 people in the Frydek-Mistek district, while the growth was milder in the district of Ostrava-mesto, approximately 117 people (Employment Agencies in Moravian-Silesian region, 2010). In 2009, the Frydek-Mistek district showed the lowest unemployment rate in the agglomeration only thanks to the concern in Nosovice.

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6 Behr Ostrava s.r.o. – air conditioning and refrigerator production (Germany), Cromodora Wheels – production of cast wheels (Italy).
4 SECOND CASE STUDY – OKD, A.S., TRADITIONAL ENTERPRISE

OKD, a.s., one of the biggest economic subjects in the region was selected as the second example of a significant enterprise. The company is the absolute largest regional employer and the third biggest private employer in the Czech Republic. Its main activity does not belong into the manufacturing industry but into mining and extracting.

4.1 Brief enterprise description

Historical development of this mining company was affected by merging of smaller firms, post-war nationalisation and many other changes and reorganisation. Long-term excess mining requirements and insufficient development investments resulted in substantial restructuring needed during the transition to free market economy. The state enterprise was discontinued at the end of 1990 and a new company called ‘Ostravsko-karvinske doly’ was created. The state still retained exclusive capital holding in the company. Mining in 14 extracting areas was terminated by 2001 which understandably led to extensive reductions of the number of employees (see further, Figure 6). In 1998, the owner structure underwent several changes and the state progressively lost its entire shareholding. Several new companies were created after the enterprise had been divided in 2005, whereas the main activity went over to the successor company OKD, a.s. The only shareholder is a holding company New World Resources N. V. from the Netherlands (OKD, 2010).

The main activities of OKD, a.s. are locating, mining, treatment, refinement and sale of the black coal and products associated with its production. Being the only producer of anthracite in the Czech Republic, it produces approximately 11 million tons per year, out of which over 40 % are exported mostly to Slovakia and Austria. Important customers are also local firms such as ArcelorMittal Steel, Trinecke zelezarny, Dalkia or CEZ, who use coal as the main fuel source. Currently, there are three mining concerns operating in the Karvina district and one in the Frydek-Mistek district. In 2007-2009, the enterprise made significant investments into innovation of the mining and stamping technologies. OKD also invests substantial funds into recultivating the landscape damaged by mining.

4.2 OKD and its impact on employment

Although OKD, a.s. has its residence in Ostrava, active mines are located in the districts Karvina and Frydek-Mistek. The company thus influences employment primarily in these areas. Its share of the total employment in Ostrava agglomeration amounts to approximately 5 % (2009). The share of employment in mining and extraction makes 89 % in the scope of 82 registered economic subjects (2009). The average wage in OKD is 50 % higher than the average wage in the region; however, this is related to the risky and unattractive nature of mining activities.

Figure 6 displays the development of employment in the enterprise from 1995 to 2009. The number of employees decreased by 54.9 % since 1995, which is a reflection of the mining restructuring, and the attenuation and liquidation of ineffective mine parts. However, the drop in employment in 2009 was also caused by the decrease in orders associated with the economic crisis and consequent sales problems.
Despite the strong reduction in the number of employees, OKD is the only company in the region employing more than 10,000 employees. In 2009, it employed 9,912 workers in the mines, 2,626 workers on the surface and 1,794 technical and economic employees. Apart from the company personnel, another 3,100 employees from contracting companies worked in the mining concerns; nevertheless, they were mostly foreign workers from Poland.

4.3 OKD in the mining sector and extracting and economic crisis

As can be seen in the previous graph, the year to year decrease of employees reached 4.7 % to the end of the period. Annual mining quantities in the year to year comparison dropped by 1,577,000 tons (OKD, 2010). However, the reason behind the employment drop was not only the decline in the production and revenues, but also transitions of the surface workers to the subsidiary company of OKD, the Centre of Services.

Decrease was registered also by some contracting companies of OKD and other subjects in the mining and extracting sector. Some firms were forced to announce bankruptcy, others had to make collective redundancies. Between the years 2008-2009, the sectorial employment decreased by 1,086 people (6.3 %); the biggest loss was noted in the Karvina district (56 % of the total decline) mainly in the OKD, a.s. mining concerns. In this first half of 2009, the sectorial employment also declined in the Frydek-Mistek district (30 % of the total decline).

5 HYUNDAI X OKD

If the two analysed case studies of significant enterprises and their impact on the region are compared, many common elements as well as differences can be found. Although OKD, a.s. is a traditional enterprise with a long history, it can be deemed a foreign subject nowadays as its 100 % capital shareholding comes from the Netherlands. On the other hand, the Hyundai automotive factory is a completely new greenfield subject. However, both subjects can be considered as very important employers either by their own number of personnel or by multiplication. In both cases, specifically
qualified workforce and specialisation in particular sectors of the labour market are created. The investments of substantial financial funds into the use of modern technologies and production also need to be mentioned.

Differences can be found in the job attraction itself. Mining is demanding, ‘dirty’ and dangerous, while the modern and clean working environment of a fully automated automobile concern offers a more pleasant option of better earnings. Nevertheless, the effects on the region cannot be limited only to employment. In fact, such significant companies influence everyday life, the environment or the social, technical and cultural development of the region.

More fundamental differences can be seen in the areas of development and scientific and research activities. Although both companies invest significant funds, the resultant benefit for the region is not equal. OKD, a.s. cooperates with a regional university and other subjects in science and research, and these activities are thus executed within the region. Hyundai spends millions of dollars on science and research but these activities are realised on a separate basis by the only R&D centre in Europe – the aforementioned Rüsselheim in Germany. In Nosovice, only the production and assembling operations, that have lower added value generated in order to grow competitiveness of the agglomeration firms, are concentrated. Cooperation of the car factory with a university at a higher level is almost non-existent so far and is rather a wish of institutions. The research activities are centred in Korea and the suppliers’ interest is associated with the Hyundai operations; therefore, no more extensive cooperation can be expected in this area either.

The location of the enterprises’ headquarters is also different. This is important in terms of interest in the regional development and life of local residents, which is related to the aforementioned science and research activities. OKD is aware of its status of a significant player in the field of the regional development and is an important agent in the field of donation and sponsoring. The OKD Trust established two years ago has supported a number of projects in the health system and social care, education, culture and sport, environmental protection and regional development. It also subsidises removal of flood consequences.

Hyundai contributes to the regional development in a different way. The realisation of its investment resulted in a number of other investments such as in infrastructure, especially in highway construction and expressways reconstruction. However, it is worth noting that their construction does not proceed fast enough, and many towns and communities suffer from substantial transport problems due to the ‘just in time’ delivery system. In Nosovice, modernisation of the security forces, establishment of the Integrated Rescue Station, restructuring of the local railway connection and construction of an industrial track took place. The investment has a positive impact on the image of the region. By its language requirements on their job candidates, it can also assist in improving language education in the grammar and vocational schools, where talented students are selected for training and admission to work.

Undoubtedly, the list of the diverse effects is not complete. However, this report is primarily aimed at the effects on employment. Other aspects of this old industrial region, such as the environment, would take up an entire book. For this reason, several selected incentives for further analysis have been indicated.
CONCLUSION

The large industrial enterprises strongly influence the regional employment, also by the significant concentration of specific sectors of the manufacturing industry. The combinations of these forms of arrangement multiply the effects on the regional economy, particularly in the times of economic depression as was seen during the global financial and economic crisis. The main reason for this is that the majority of the large firms operate in the most affected metallurgic and manufacturing industries. The decline in commissions led to the reduction of costs and, in many cases, to collective redundancies as well. To be complete, the development in employment rate in the individual districts of the agglomeration is included in the Appendix. The development in the Nový Jicin and Frydek-Mistek districts should be especially noted (see also Chapter 2.2).

The large enterprises also have significant positive effects. New investors in particular create new positions, assist in diversification of the sectorial structure and further specialisation of the local economy. They often struggle with insufficiently qualified workforce but they can partly diminish the problem through their training programmes, which further contributes to reaching the balance on the job market. The traditional large companies can offer strong background of established firms, good working conditions and a number of employee benefits. They also possess own funds for introducing new technologies, modernisation and improving workers' qualifications, which is almost impossible in small firms.

Other areas of the large enterprises impact on the regional character have also been noted here marginally. It is evident that by sponsoring, donation activities or simply by their existence itself the large enterprises can interfere with all areas of everyday life.

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OTHER REFERENCES

15) ČESKÝ STATISTICKÝ ÚRAD (CZECH STATISTICAL OFFICE). Database KROK.
Appendix

Figure: Unemployment rate in districts of Ostrava agglomeration from January 2008 to September 2009

Source: MPSV, 2010
EFFECTS OF FDI REGENERATION PROJECTS - THE CASE STUDY OF PROLOGIS INVESTMENT IN THE POST-INDUSTRIAL AREA IN CHORZOW (UPPER SILESIAN AGGLOMERATION, POLAND)

Adam Drobnia

University of Economics in Katowice,
adr@ae.katowice.pl

ABSTRACT

The paper is devoted to the multidimensional assessment of brownfield regeneration projects undertaken by large foreign investors. In this framework, the assessment of impacts of the distribution center project, in one of the towns of the Silesian Agglomeration (Poland) made by the world largest leader in logistics industry (i.e. the ProLogis company), was presented. Described regeneration of the post-industrial area, which involves the introduction of a logistic function is associated with a number of benefits in the form of new jobs, redevelopment of the plot, the execution of a large capital expenditures. However, the project also features socio-economic and environmental costs mainly associated with increased noise and traffic, creating jobs for people with low skills, jobs offering low wages, and the limited number of jobs in relation to the size of the area where the project was carried out.

In addition, the implemented new function of storage of goods contributes in an average extend to the development of a new economy in the analysed post-industrial town.

KEYS WORDS

Foreign direct investment, regeneration projects, impact assessment, post-industrial city, post-industrial area regeneration.

INTRODUCTION - THEORETICAL BACKGROUND OF FDI PROJECTS

Foreign direct investments (FDI) are commonly perceived as external source of capital for regions and cities of their location. These kinds of financial flows are particularly important when experiencing a shortage of finance capital, which undoubtly exists especially in the post-industrial cities and regions, which cope with issues of a structural change of their economic base. Foreign direct investments are often defined differently, for example, as "making an independent economic activity abroad, or taking over management of existing businesses"\(^1\), or as "a form of capital investment in a foreign company in order to achieve a lasting impact on the management of activities and achieving of the profits "\(^2\). A similar approach is also presented in the definition of foreign direct investment proposed by M. Guzek\(^3\). Closer to the reflections undertaken in the paper is the definition of P. Krugman

\(^2\) CZERWIENIEC, E. (1990: 9).
and M. Obstfeld who, foreign direct investment consider as "international transfer of capital to establish a branch in another country and to exercise control over".  

The literature and research relating to foreign direct investment is also disseminated the OECD approach, the so-called: benchmark definition of foreign direct investment. According this FDI is perceived as the investments undertaken in order to achieve a lasting impact on the business enterprise located in another country and to achieve long-term benefits of this title.

The issue of foreign direct investment also waited a number of approaches and theoretical concepts on the basis of economics. In this regard, it may be mentioned: the theory of the ownership advantages of S. Hymer and C.P. Kindleberger, theory of international product life cycle of R. Veron, theory of oligopolistic behaviour of parallel E.M. Graham and F.T. Knickerbocker, theory of localization in terms of international approach, and finally the theory of internalization of R. Coase.

In addition, to explain the mechanisms involved in making decisions about foreign direct investments, it is also another important issue referring to their assessment of created results within a country, region, or city host. The theoretical work often calls attention to the benefits herein relating to:

- transfer of new technologies,
- transfer of modern management methods,
- changes in economic structure by introducing new products and services,
- employment growth,
- professional qualifications,
- improving the international attractiveness of a country, region, city,
- creation of international links and globalisation of a local economy.

In addition to the list of benefits, foreign direct investments may also be related to costs in the form of: eliminating of local competitors, decrease of employment, lack of interest in developing linkages with the local business sector, the behaviour of "nomadic" lifting the FDI and move to another country in case of adverse price of production factors, offering low-wage jobs, excessive promotion of cultural patterns. From the standpoint of the economic transformation of former industrial cities, foreign direct investments are seen as primarily an opportunity for rapid restructuring of a local economy and combat unemployment problems. These investments are seen widely as a factor reducing local and regional disparities, preventing degradation of social and economic interests of cities and regions. Particularly interesting from a research point of view is an evaluation of the effects of foreign direct investments in the towns, which are implemented in the ongoing economic transition of former industrial areas, that are brownfields. Since this type of FDI is expected to not only change an

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10 Ibid., p. 31.
economic structure of the city, but also to revive neglected neighbourhoods and abandoned areas (derelict lands), which in the past have been extensively used in industrial function.

1 THE PROJECT CONTEXT - IN BRIEF

1.1 Silesia region, the Upper Silesia Agglomeration and Chorzów town

Chorzów is located in Silesia (southern Poland’s region), the region bordering on the south with the Czech Republic and Slovakia. Importantly, Chorzów is one of 14 cities of more than 2-million inhabitants of the Silesian Agglomeration, i.e., the largest system of urban across the country. According to the research conducted by the Institute for Market Economics and the Polish Information and Foreign Investment Office\(^\text{13}\), Silesia region is one of the most attractive areas for investments in Poland. The high attractiveness of the region is a consequence of a good assessment of the use of:

- resources and labour costs - a very large labour force (employed, unemployed, graduates), a strong and varied research facilities (more than 30 universities, numerous R&D institutions, 200 thousands of students),
- transport accessibility - proximity to the western border (Germany), the immediate vicinity of the southern border (the Czech Republic, Slovakia), the course of the A4 and A1 (partly under construction), a large number of international flight connections, a good level of development of tourism and logistics,
- the size of a market - a large market capacity in terms of number of residents and their income, the largest in scale of Polish population density, high purchasing power of companies,
- the level of economic infrastructure - well-developed R&D sector, large reserves of developable land in the special economic zone (SEZ).

However, there are poorly evaluated such factors of the Silesia investment attractiveness as:

- promotion activity of authorities focused on investors - it is still small international activity in trade fairs of investment areas,
- structure of the economy - still a relatively large share of industries related to traditional industrial sectors as mining, metallurgy, and the presence of significant amounts of land and structures that require redevelopment,
- the level of public safety - generally considered to be low due to the accumulation of issues associated with crime and social pathology.

In the region there are 392 FDI which exceed of US$ 1 million each, coming from 22 countries. The most represented countries are such as Germany, USA, Italy, Netherlands, France\(^\text{14}\). Brownfields are an important challenge for further development of the Silesian region, especially its central part, i.e. the Silesian Agglomeration (including the Chorzów town). Their high number and size are associated with the history of the region’s economic development, which for the most part in the past had been associated with traditional industrial sectors as mining and metallurgy. The issue of brownfield sites due to their massive nature, and their location - found mostly in potentially valuable areas such as city

\(^{13}\) KALINOWSKI, T. (2008: 40).

\(^{14}\) www.silesia-region.pl/gosp_5php?kat=0_07_08_05&katrodzic=0_07_08 (2010.10.27)
centres, centres of districts, near the main transport routes. In the Silesia region devastated and degraded areas occupy a total of 4.584 hectares\textsuperscript{15}.

Chorzów is 113.2 thousand inhabitants town, which constitutes about 5.6% of the population of the Silesian Agglomeration. The number of its inhabitants - as in almost every post-industrial city - declined in the last 10 years, i.e. during the period 2000-2009 by 12.5 thousands (from 125.7 to 113.2 thousands). Thus, in the analysed period, the city has lost nearly 10% of its human potential.

What is important, in the period 2005-2009 the number of enterprises in the town increased slightly from 10 803 to 11 213, i.e. around 3.8% in relation to 2005. The number of companies with foreign capital also increased from 129 (2005 onwards) to 146 (2009 onwards), i.e. by 13.2% in relation to 2005. Despite the stabilization of a free market economy still over 94% of Chorzów’s companies are micro-enterprises, although it is also seen an increase in medium-sized firms, which employ from 50 to 249 employees (see Table 1).

Table 1: The size of companies in terms of number of employees in Chorzów during 2005-2009

<table>
<thead>
<tr>
<th>Category</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of companies</td>
<td>10 803</td>
<td>10 887</td>
<td>10 965</td>
<td>11 072</td>
<td>11 213</td>
</tr>
<tr>
<td>number of employees: 1-9</td>
<td>10 203</td>
<td>10 278</td>
<td>10 350</td>
<td>10 444</td>
<td>10 583</td>
</tr>
<tr>
<td>number of employees: 10-49</td>
<td>490</td>
<td>501</td>
<td>508</td>
<td>515</td>
<td>508</td>
</tr>
<tr>
<td>number of employees: 50-249</td>
<td>90</td>
<td>87</td>
<td>85</td>
<td>95</td>
<td>107</td>
</tr>
<tr>
<td>number of employees: 250-999</td>
<td>19</td>
<td>20</td>
<td>20</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>number of employees: more than 1000</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: www.stat.gov.pl

The number of jobs in the years 2005-2009 increased slightly from 25 130 to 25 971. What is important, in 2008 in Chorzów were 27 050 jobs, and as a result of the crisis their number decreased in only one year by more than 1,000. Most jobs: 39.1% are created by market services, followed by 34.8% in industry and non-market services 25.7%\textsuperscript{16}. It should be noted that in connection with the ongoing processes of restructuring of heavy industry in Chorzów, in particular the mining sector (now no longer operates any mine), and iron and steel industry, the number of jobs analysed in the long run i.e. from 1995 to 2009 fell by more than 10 thousands, i.e., from 36.1 to 25.9 thousands. The fall in employment

\textsuperscript{15} OCHRONA ŚRODOWISKA 2008 (2008: 120)

was associated with the change of the sectoral structure of employment. For example, in 1995: 50% of jobs in Chorzów were associated with the industry and market services respectively: 30.1%.

The size of unemployment in the last 5-year period has been significantly reduced. The unemployment rate decreased by about half, i.e. from 22.3% (9 899 persons) in 2005 to 11.1% (4 627 people) in 2009. The biggest group of the unemployed is those including persons between 24 and 35 years old (1247 persons).

Attractiveness of investment in Chorzów is determined mainly by the very high value of density index of the road network, and additionally by the fact that by its area in the district Batory A4 motorway runs, providing access to major transportation routes in Poland and Western Europe countries. In addition, in the town runs expressway (known as Diametric Road) linking the main urban centres cores of the Silesian Agglomeration. The attractiveness of Chorzów is also related to the direct neighbourhood of Katowice, which offers well-prepared and educated staff, offering education in diverse disciplines, both in secondary and tertiary education. 10 tertiary educational institutions are located in Katowice, which educate about 80 thousands of students. What is important - the number of students in the past five years (2004-2008) increased by around 70%. The attractiveness of investment locations in Chorzów is also influenced by proximity to existing foreign direct investors, mainly in the transport industry (i.e., ALSTOM) and chemical (Vernis CLASSES). The town has numerous brownfields (approximately 10% of the total town area), which are now lost their former function. Areas of this type are characterised by relatively well-infrastructure equipment and good location close to the main routes. Revitalisation of Chorzów’s brownfields is a key element of the town’s development, in particular the transformation of its economic base in the direction of knowledge-based economy and innovation. The town authorities, as an instrument to attract investors, have set up a brownfield tax exemption for business which localise their activities in that kind of areas. Investment incentives include the 3 groups of sites, named: the central zone (area where the operation of the Kościuszko Steelworks and the Polska Mine were closed - within the town’s centre), the southern zone (the area where part of the operation of Steelworks Batory were closed - the southern part of the town) and northern zone (sites released by the Nitrogen Plant - the northern part of the city ). The size of investment incentives are the following in period of 2006-2010: 100% (2006), 50% (2007), 50% (2008), and 25% (2009-2010).

Among the additional incentives for investors one also should list those offer by District Labour Office in Chorzów. They are mainly refunds of costs of employing a worker associated with: reimbursement for employment in the intervention works, refund of social insurance in case of an unemployment of a person by investor, refund the cost of retrofitting the job for an unemployed, reimbursement of the costs of employment of young workers.

1.2 The brownfield

The investment area covered 31 hectares of brownfield in Chorzów’s Batory district - called southern zone covered by the investment tax exemptions linked with the property tax. Analysed brownfield was once heap of Batory Steelworks. The plot is located in the direct neighbourhood of the border of Katowice (capital of the region) and close to the A4 motorway about 500 meters). Industrial waste was stored on the plot from 60s. of the twentieth century. In that period other structures were build on the plot like technical buildings and facilities, railway sidings. The Batory Steelworks adjacent to the landfill for industrial waste (the plot), has been operating since about 1873. Before the project of ProLogis Park
Chorzow, this area was not cultivated, and the existing on-site metallurgical waste dump, in the period 1996-2003 was closed and removed. After 2003, in this area there were still so called "wild" landfills.

The main advantage of the plot is fast and direct access to the A4 motorway running from east to west (which links out of Krakow - Katowice - Wroclaw - Dresden), and to the A1 motorway - which is already under the construction and in the future gives further assess to Czech Republic, Slovakia, Hungary, Austria and Northern Poland.

1.3  The investor

ProLogis was founded in 1991 and is the world's largest owner, manager and developer of distribution facilities with the function of the total area of approximately 51 million square meters. It operates in 110 markets in North America, Europe and Asia\textsuperscript{17}. ProLogis clients are mainly manufacturing companies, companies engaged in retail trade, transport companies, logistics providers, as well as local entrepreneurs operating on a large scale distribution.

ProLogis is listed on the Fortune 500’s list and it is listed on the stock exchange, including into S&P 500 index on the New York Stock Exchange (New York Stock Exchange and NASDAQ\textsuperscript{18}). The company has created the world's first international network of distribution facilities that enables customers to efficiently manage operations relevant to the supply chain. The company's strategy is visible actions to protect the environment. ProLogis in 2007 became the first American developer of distribution facilities, which has prepared "Sustainability Report" in accordance with the standards set by the Global Reporting Initiative, an organisation sponsored by the United Nations Environment Programme. As a priority aspect of sustainable development activities, the company considers investing in a brownfield area. In Europe, ProLogis has logistics facilities at 53 markets, including Poland, i.e. in Gdansk, Warsaw, Poznan, Szczecin. In the Silesian Agglomeration ProLogis has a warehouse in Dąbrowa Górnicza, Sosnowiec and Będzin.

2  THE PROLOGIS PARK CHORZÓW PROJECT

ProLogis Park Chorzów was opened in October 2006. It is one of the largest and most modern investment of the company in Poland, while the largest logistics centre in the Silesia region. ProLogis Park Chorzów includes seven buildings with a total area of 149 thousands of square meters (sqm) space. Warehouses are designed for the needs of large tenants in logistics and distribution.

The project was implemented in two stages. The first phase of construction included three warehouses with a total area of about 87 thousands of sqm and it was completed in 2006. At this stage, office building and road infrastructure facilities, which provide ProLogis Park Chorzów communicated with the local communication system, primarily from the A4 motorway, were build.

In 2007 the second phase of the project was completed includes four buildings with an area of over 62 thousands sqm. Storage space buildings was very popular. Even before the end of the first stage of the project, it was 85% leased. Finally the buildings of ProLogis Park Chorzów are leased by 9 companies, including:

\textsuperscript{17} www.prologiseurope.com (2010.10.27)
\textsuperscript{18} S&P 500 includes the company with the largest capitalisation.
• FM Polska Sp. z o.o. (logistics),
• Grupa Raben & Raben Polska (transportation),
• Grupa Raben CJ International (transportation)
• Reporter S.A. (manufacture of wearing)
• Karmann Sp. z o.o. (business services, construction office)
• C. Hartwig Gdynia (transportation),
• Kuehne & Nagel (logistics),
• CRS Polska Sp. z o.o. (control of components used in automotive industry).

Warehouses were built in the high rack system and shipping of industrial products, or to rent space for entrepreneurs seeking production of straightforward environmentally sounds industry (like: light industry, packaging, electronics). ProLogis Park Chorzów works 7 days a week in a two-shift system. Goods are delivered to the ProLogis Park by road transport. Using the same mode of transport for their further distribution. Ultimately handling capacity ProLogis Park Chorzów is approximately 2,500 trucks daily. The project of building the ProLogis Park Chorzów was associated with the revitalisation activities of post-industrial area, mainly in the dimension of the rehabilitation of contaminated subsoil and the introduction of a new logistic function in former industrial site.

It is also worth mentioning that in 2008 the total amount of warehouse space in Poland has exceeded 4 million square meters, of which only in 2008 was put to use 400 thousands of sqm. The modern warehouse space sector is essentially dominated by two companies i.e. Panattonii and ProLogis. They both have nearly 60% of this type of market in Poland.

3 THE PROJECT IMPACT

3.1 Remarks on methodology

Preliminary analysis of the impact of the project was carried out to focus on the identification of the nature and scale of effects in the context of local ex-post approach. The following evaluation approaches were used in the process of identifying the effects of the project:

• environmental impact assessment,
• economic impact assessment,
• social impact assessment.

In the case of measuring the social impacts of the project, additionally surveyed research were used.

3.2 Environmental effects

For the project an environmental impact assessment was conducted. Mainly because its implementation was associated with the impacts of the various components on the environment through emissions to air, wastes and noise. The transformation has also been subjected to much of the existing ground surface. Environmental effects of the project are as follows:

• water - the project’s water intake is from the municipal water supply system, as well as sewage disposal and rain water (discharged into the municipal sewerage system). Partly, it is rain water retention within the investment area. Rain water from parking areas and driveways prior to entering the receiver is treated in highly efficient separator hydrocarbons (neutral impact),
• waste management - waste arising in the ProLogis Park are stored in designated areas. The Park implemented a system of selective waste collection, allowing the collection of waste at
source, i.e. in places where they occur. All waste shall be provided to eligible entities for reuse or disposal (neutral impact),

- influence on the noise - the investment is combined with an increase in the level of noise from trucks operated by ProLogis Park - to 2,500 trucks daily. At the moment, in the direct neighbourhood of the park a housing development is not located. However, realisation of the project means that the land lying in her neighbourhood has lost substantially more attractive housing function (negative),

- impact on ambient air - ProLogis Park project does not cause major changes in climate. Heating warehouses is performed using the most organic heating medium in the form of natural gas. Much more adverse impact on the protection of air is generated by the movement of trucks as a result of combustion of liquid fuels (negative impact),

- impact on people - in line with the Environmental Impact Report\textsuperscript{19}, the project does not cause adverse effects on human health and life, in particular with regard to working conditions (neutral impact),

- impact on soil, flora and fauna - within the land covered by the project, soil profile was demoted in previous years results from post-industrial landfill. However, within the project site 1768 trees an 349 shrubs were removed. The compensation of 341 pieces of trees was realised. The size of the biologically active area is currently 25% (neutral impact),

- impact on the earth's surface - the impact of the project on the surface of the earth was to change the current morphology of the terrain. Surface was levelled and cleaned up, and closed down illegal dumping of rubbish. Area has been managed by objects (buildings), passageways, and green (positive impact),

- impact on the landscape - the implementation of ProLogis Park has introduced new elements in the landscape of south district of Chorzów, which do not collide with the environment (neutral impact).

3.3 Economic effects

Initial economic effects of the project have been identified in the dimensions relating to: the size of the employment generated by companies located in the ProLogis Park Chorzów, the size of salary, assistance with courses offered by District Employment Office in Chorzów, vocational training offered to entrepreneurs for start-ups in the Park and the volume of investment outlays.

In terms of direct employment generated, the ProLogis Park helped to create about 200 jobs. Importantly, companies located in the Park offer a low-qualified jobs, which does not require professional qualifications or higher education. This applies mainly to the professions such as warehouse workers, forklift driver, an administrative worker. The creation of jobs, which do not require substantial professional qualifications, are also associated with the low level of remuneration to staff of the Park. For example, for the production and storage positions the wage is close to the lowest wages in Poland, i.e. the national minimum salary: 1317 PLN.

Among the effects of employment generated by the Park, the effects of a shift (displacement), i.e. the reallocation of existing employment from Katowice to Chorzów are also visible. Detailed volume forecast and real employment generated by the companies located in the Park is presented in table 2.

Table 2: The size of the projected and actual employment generated by the ProLogis Park Chorzów

<table>
<thead>
<tr>
<th>Name of the company located in the Park</th>
<th>The size of the projected employment by the District Labour Office</th>
<th>Actual employment in the Park</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM Polska Sp. z o.o.</td>
<td>70</td>
<td>52</td>
<td>Production workers</td>
</tr>
<tr>
<td>Grupa Raben &amp; Raben Polska</td>
<td>38</td>
<td>20</td>
<td>Warehouse, a forklift driver, office worker</td>
</tr>
<tr>
<td>Karmann Sp. z o.o.</td>
<td>40</td>
<td>6</td>
<td>Machinist, welder, machine operator, senior technical</td>
</tr>
<tr>
<td>Grupa Raben CJ International</td>
<td>10</td>
<td>10</td>
<td>Warehouse, customer service representative</td>
</tr>
<tr>
<td>C. Hartwig Gdynia</td>
<td>n.a.              ^20</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Ponetex Logistic Sp. z o.o.</td>
<td>n.a</td>
<td>n.a</td>
<td>The company moved its headquarters from Katowice, together with the existing employment</td>
</tr>
<tr>
<td>Reporter S.A.</td>
<td>n.a</td>
<td>n.a</td>
<td>The company did not disclose information on employment</td>
</tr>
<tr>
<td>Kuehne &amp; Nagel</td>
<td>89</td>
<td>74</td>
<td>Warehouseman, forklift operator, freight forwarder, an administrative worker</td>
</tr>
<tr>
<td>CRS Polska Sp. z o.o.</td>
<td>20</td>
<td>17</td>
<td>Quality Controller</td>
</tr>
<tr>
<td>Total employment</td>
<td>267</td>
<td>179</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: based on information of District Labour Office in Chorzów (2009).

The number of jobs created (about 200) in the whole potential of jobs in Chorzów in 2009 (25,971) can be considered small: 0.8%, particularly in relation to financial and spatial scale of the project. What is important - in creating jobs active role was played by District Labour Office in Chorzów, mainly in the form of employment services (for example, about 1,300 CVs were submitted by the Office to companies located in the Park) and the financing of vocational training.

Much more spectacular are the economic effects linked to the project included in the form of investment. The estimated cost of the project of creating the ProLogis Park Chorzów was about 360 m PLN. The scale of the expenditure incurred in 2005-2007 is particularly evident in relation to the total expenditure budget of the town. It is up to: 46.5% of the value of Chorzów’s budget. Moreover, investment in ProLogis Park is approximately 4-times higher than the investment that the town was incurring during this period. Detailed data about the investment outlays are presented in the table 3.

^20 n.a. - non available
Table 3: Capital expenditure associated with the creation of ProLogis Park Chorzów in relation to capital expenditure of the city [m PLN]

<table>
<thead>
<tr>
<th>Category</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total expenditure of the town budget</td>
<td>260,8</td>
<td>305,1</td>
<td>322,1</td>
</tr>
<tr>
<td>Capital expenditure of the town budget</td>
<td>17,1</td>
<td>36,0</td>
<td>36,7</td>
</tr>
<tr>
<td>Capital expenditure associated with the creation of ProLogis Park Chorzów</td>
<td>78,8</td>
<td>131,4</td>
<td>149,8</td>
</tr>
<tr>
<td>Capital expenditure associated with the creation of ProLogis Park Chorzów as % of city budget</td>
<td>30,2%</td>
<td>43,1%</td>
<td>46,5%</td>
</tr>
<tr>
<td>Capital expenditure associated with the creation of ProLogis Park Chorzów as multiples of the city's budget investment expenditure</td>
<td>4,6</td>
<td>3,7</td>
<td>4,1</td>
</tr>
</tbody>
</table>

Source: based on data www.stat.gov.pl

The scale of capital expenditures connected with the ProLogis Park Chorzów is also visible in relation to capital expenditure incurred by all companies operating in Chorzów in 2005-2007. As the table below shows, the capital expenditures associated with the project under consideration was about 50% of all such expenses incurred by business in Chorzów.

Table 4: Capital expenditure associated with the creation of ProLogis Park Chorzów in relation to the investment expenditure of enterprises operating in Chorzów [m PLN]

<table>
<thead>
<tr>
<th>Category</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment outlays in enterprises in total, including:</td>
<td>147,7</td>
<td>212,1</td>
<td>327,3</td>
</tr>
<tr>
<td>• capital expenditure associated with the creation of ProLogis Park Chorzów</td>
<td>78,8</td>
<td>131,4</td>
<td>149,8</td>
</tr>
<tr>
<td>• capital expenditure associated with the creation of ProLogis Park Chorzów as % of capital expenditure incurred by companies in Chorzów</td>
<td>53,4%</td>
<td>62,0%</td>
<td>45,8%</td>
</tr>
</tbody>
</table>

Source: based on data www.stat.gov.pl

3.4 Social effects

Social impact assessment of the project was conducted among two groups, i.e. the group that are targeted directly by project’s results21, and the group that resides in the direct neighbourhood of the Park. In order to assess the social impact of the project, interview techniques and questionnaires were used22, and also a structured interview was conducted with the employee of the ProLogis Park Chorzów. The aim of this study was to determine:

- the degree of recognition of the ProLogis Park’s project by locals,
- the positive and negative benefits of the project,
- the interest of employment in the Park,

22 Preliminary assessment of social impact has been performed on a group of 50 respondents, including 22 men, 28 women. Consisted of 12 people ages 18 to 25 years, 9 people from 26 to 35 years, 15 people between the ages of 36-55 years, 10 people aged from 56 to 65 years and 4 people over 65 years of age. Among the others, 29 persons had the status of the employed, 2 unemployed, 9 students and 10 pensioners.
• the project's impact on the development of Chorzow in the opinion of the Chorzów’s inhabitants, in particularly those from Batory district.

ProLogis Park project is well recognized among the respondents of the survey. 88% of them have heard about the Park. The remaining respondents have heard about this project for the first time. This group constitutes mostly people who live away from the location of the project. They also stated that the project not effected them at all.

Another aspect of the survey concerned the indications of positive and negative effects of the ProLogis Park’s project. All of those familiar with the project, as the most recognised in his favour noticed: jobs created (100% response), then a new land use of former brownfield (73% response), decrease in unemployment in the Batory district (70%) and the recovery of Batory district arising from the location of new economic activities (57% response rate). Other important benefits were: increasing the competitiveness of the town (36%) and an increase in quality of life (27% response rate). In turn, the greatest costs associated with the completed project were: to increase the traffic of trucks (82%), and more noise created by increasing the volume of traffic (68% response rate). The “marginal” cost was the deterioration of the local roads (3% response rate). Only 2% of the respondents pointed out that the project does not involve any negative effects.

The results of the survey questioned the interest to work at the ProLogis Park are very interesting. Almost majority of respondents, i.e. 93% not having worked in the Park. The remaining group of persons was or is associated with the work at ProLogis Park. Of these, some people are no longer employed there. The reasons for the resignation of the work were: low wage, and a 12-hour mode work. The main motive for work in the Park was the unemployment.

Respondents who have not worked at ProLogis Park were asked to indicate the level of interest in working in the Park. The majority, i.e. 80% were not interested in this kind of work. Only one on five was interested in working in the Park. Also, a small number of respondents know around themselves people who work in the Park. The project will have helped to create jobs primarily in the area of Batory district in Chorzów, however, as study shows people are not interested in taking a job there, mainly because of low wages and 12 hour mode. This trend shows a mismatch between the needs of the employer to the expectations of local residents.

Evaluation of the impact of the project on the development of Chorzów - in the opinion of the town’s residents, in a particular Batory district - clearly indicates that respondents perceive this kind of interaction as positive. All of the respondents considered that the project of ProLogis Park is a good investment for Batory district and Chorzów. In spite of the negative effects, their nature and the scale - according to the respondents - are less than the nature and scale of the project’s benefits. Respondents also pointed to the other positive actions initiated by ProLogis company in Batory district. This concerns in particular the participation of the President of the company’s in a local event as well as funding a sports facility (playing field) by the ProLogis.

CONCLUSIONS

Chorzów is still struggling with the problems of transforming the economic base toward the knowledge-based economy. Processes of changes are accompanied for more than a decade with negative migration trends and continuing persistently high levels of unemployment. Chorzów as a former industrial town of the Silesian Agglomeration with a high degree of urbanization does not have a large number of
greenfield sites. This means that the socio-economic development of the town - in the spatial dimension - should be done through the generation of new functions within the existing brownfield areas. One from such areas is the brownfield of the former industrial waste landfill of Batory Steelworks. It has a very advantageous location to the A4 motorway (one of the best in Silesian Agglomeration), giving access to main roads in Poland and abroad.

Implementation of FDI in the form of a project of the largest logistics company in the world - ProLogis - involving the creation of a logistics centre, in former industrial areas of Batory Steelworks landfill, initially appears as a good solution, aiming to re-use of such plot. But making a more detailed assessment of this project shows that besides the benefits perceived mainly in a financial sense and restoration of a spatial order, the ProLogis Park Chorzów will not generate significant effects considered the economic base of Chorzów allowing to create an attractive city-based new economy industries.

One of the benefits of the project are created jobs, but their scale (about 200) in relation to scale of a land used for the project and in relation to the existing number of jobs in Chorzów can not be regarded as significant. In addition, the jobs created in the Park mainly refer to production workers, warehousemen, whose practice is not associated with high qualifications and appropriate remuneration. This is confirmed by interviews with residents of Chorzów. Most of whom consider the project successful, but they are not interested in working in companies located there.

The modern transformation of urban redevelopment should rather aims at towards creating the economic base of the city based on activities of new knowledge-based economy and culture. This direction is also feasible in the case of Chorzów, given a prime location plot (which was the ProLogis Park Chorzów), and access to qualified human resources as well as R&D institutions and culture located in the Silesian Agglomeration. It means that the implementation of the classic function of warehousing and logistics will bring relatively high financial performance for the initiators of the ProLogis Park, but rather a small socio-economic efficiency in terms of Chorzów transformation. In an overall assessment of the effects of this project should also be pointed out at the economic cost associated with the inability to use - such an attractive situated - the site in a very near future for the functions related to more advanced activities.

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FOREIGN DIRECT INVESTORS AND ECONOMIC TERRITORIAL DEVELOPMENT IN EAST GERMANY

Rüdiger Wink
HTWK Leipzig,
wink@wiwi.htwk-leipzig.de

ABSTRACT

The paper investigates the changing role of foreign direct investments for economic development in East German regions by focusing on the role of knowledge seeking investments. The analysis shows that in particular in Southern regions of East Germany a mutually supportive interplay between FDI and improvement of regional production factors could be achieved and that the affected sectors are mainly those, which were hitherto not the growth engines in West Germany. The case of the photovoltaic industry illustrates these general observations.

KEYWORDS

Foreign Direct Investments, innovation systems, market-seeking investments, resource-seeking investments, photovoltaic industry

INTRODUCTION

The acquisition of foreign capital is generally assessed as an important source for economic growth, as it provides the preconditions for increased labour productivity and knowledge spill-overs (EBRD, 2009). The central and Eastern European countries became the destination of foreign investors in particular after the decision towards EU enlargement (UNCTAD, 2005). Industrial investors looked primarily for regions with low factor costs, industrial history and qualified workforce to achieve fast efficiency and productivity effects. The case of East Germany, however, was different from the beginning, as the accession to West Germany led to early access to transfer payments from West to East Germany, but also migration of highly qualified workforce from East to West Germany and a fast increase of labour costs in East Germany limiting the attractiveness as investment location. The following paper provides an overview to the changing pattern of foreign direct investments in East Germany during the past two decades and the potential for these regions to enhance competitiveness by attracting further investments. The paper is organised as follows. After an introduction to the theoretical context of linkages between FDI and regional development and the role of knowledge spillovers, the specific situation in East Germany is described to explain the structural challenges and differences between East Germany and most Central and Eastern European countries. This leads to an overview to the current pattern of FDI to East Germany and the specific sources of and targets for knowledge-driven FDI. Finally, a special focus on the solar industry will underline the specific challenges and opportunities in East Germany, if a successful interplay between improved knowledge infrastructure, FDI and network emergence can be achieved.
1 THEORETICAL CONTEXT

Two main lines of arguments fuel the expectation of positive effects caused by FDI. The neoclassical growth models assume that convergence between developed and less developed regions will almost automatically be achieved, as capital accumulation leads to decreased marginal profits in the developed regions (Hirschman, 1958; Solow, 1957; Wang, 1990 integrating spillover effects into the models). Hence, investors expect higher marginal profits in less developed regions at least, if necessary infrastructures are given, and these investments cause increased competitiveness in the host regions. Unfortunately, the empirical evidence of this convergence process was missing (Kaldor, 1970; Dupont; Martin, 2006).

The second line of argumentation was developed by the theory of endogenous growth (Lucas, 1988; Romer, 1990). Here, capital accumulation causes increasing scale economies through knowledge spillover effects and human capital formation, which explains the barriers to convergence (Coe; Helpman, 1995). Development policy, however, can enhance catch-up processes in less developed regions, if necessary preconditions for endogenous growth are provided, which attract investments from developed regions and cause positive scale economies. Necessary preconditions include absorptive capacities to understand and transfer knowledge from more developed to less developed regions (Lane et al., 2001; Andersson et al., 2002). These absorptive capacities include high qualifications of the workforce and continuous integration into communities of practice, for example by integration into transnational value chains with gatekeepers between developed and less developed regions (Wink, 2010). Subsidiaries of transnational corporations are often seen as gatekeepers to less developed regions, as they use leading technologies within their production processes and might collaborate with suppliers in the host regions or provide experienced human capital for the regional labour market via fluctuation (Wink, 2008).

Empirical studies for Central and Eastern Europe underline the positive impact of FDI on convergence processes (Sapienza, 2009; Bijsterbosch; Kolasa, 2009; Nath, 2005; however Aitken; Harrison, 1999, on problems of identifying positive effects). Absorptive capacities were identified as important preconditions to attract investments in manufacturing sectors, while qualified human capital is particularly important for service investors. The Baltic economies were recognised as a prominent example for these pull-factors to attract FDI as growth engines. When looking at total numbers, spatial concentration of FDI in CEE countries was observed with Poland, the Czech Republic and Hungary as the main hosts since the 1990s (Damijan; Rojec, 2007), but increasing attractiveness for the latest EU members Romania and Bulgaria after their accession (Sapienza, 2009; Konings, 2001; Sohinger, 2005). Many transnational manufacturing corporations served as gatekeepers to new regional clusters, as they forced their system suppliers to follow them to their new production sites opening up new opportunities for regional firms to get access to the value chain systems as third or fourth tier suppliers and improving the qualifications of the regional human capital by vocational training.

Theoretical explanations for the selection of regions as hosts for foreign direct investments reflect the eclectic approach by Dunning including market seeking argumentations of new or extended sales markets, resource seeking motivations driven by the access to superior or rare production factors and efficiency seeking motivations considering the influence of subsidies and trade policies but also the impact of geographical proximity and the opportunities to exploit economies of scale and scope (Dunnings; Wymbs, 1999; Frost, 2001). In the CEE countries, the big countries like Poland and latest candidate and accession countries like Croatia, Romania and Bulgaria are recognised as host countries.
due to market seeking motives in the consumer goods sectors. The latter two countries also profited from their status as low cost countries with abundant labour to satisfy resource-seeking investors. Efficiency seeking investors include activities in the Czech Republic, Slovakia, Poland and Hungary due to the geographical proximity to incumbent EU markets and the expectation to exploit economies of scale and scope by building up efficient transboundary value chains. As a consequence, single regions in Central and Eastern Europe achieved fast convergence to the incumbent EU regions (Borensztein et al., 1998), while disparities between rural areas and developed areas in CEE countries increased (European Commission, 2009). In general, it is assumed by theory that the more the investors are looking for augmenting their competencies the more they will be interested in technology spillovers between home and host region, while competence exploitation mainly stands for the use of investments to extend the sales markets (Frost, 2001). The latter activities, however, can also be related to close linkages with suppliers in the host region, if the host sales markets are sufficiently big and important so that customisation has to be considered (Cantwell; Mudambi, 2005).

During the last years, several empirical studies stressed the observation of positive impact by FDI in CEE countries as a general phenomenon (UNCTAD, 2010, on the challenges to attract FDI in times of economic crisis). However, at least three questions still remain open:

- How can differences in the performance between host regions be explained, and what is the role of regional governance factors in this context?
- How can the positive impact by FDI be made resilient against sectorial or technological shocks to avoid path-dependencies within structural adjustment processes?
- How can spillover effects from successful to less successful areas be achieved?

Contributions to answer these questions require a deeper understanding of the interplay between investor’s motivations, their involvement in regional economic processes and their linkages to other actors within the regions. The following sections aim to provide some insights on this interplay for East German regions. Before this, however, some information on the specificities of the starting conditions in East Germany after 1989 are given to explain some differences to the experiences in the CEE countries.

2 SPECIFIC STRUCTURAL CHALLENGES IN EAST GERMANY

With German unification, the East German regions had to face a completely new economic environment (Brück; Peters, 2009; Blum et al., 2010). While the former GDR was oriented almost completely to the integrated East European and socialist markets, the East German industry lost its export markets. Furthermore, the direct competition with the West European industry as one of the most competitive global export industries made most of the East German industrial facilities obsolete. Only few specialised small and medium-sized firms survived this collapse at the beginning of the 1990s. As the wage level in the East German industry was relatively quickly adjusted to West German standards as well as all other standards for the industry (taxes, local planning, environmental regulation etc.), the East German regions could never develop an image as a low-cost location for foreign investors. Accordingly, the primary motivation for investments during this period was rooted in market seeking arguments, in particular for service companies, to have access to a sales market with a backlog demand (Gauselmann; Jindra, 2010). Besides, government subsidies encouraged capital-intensive production investments along extended workbenches.
As a consequence, the firm structure in East Germany was and still is characterised by small and medium-sized regional firms and subsidiaries of transnational corporations, which were mainly focused on their role as extended workbenches. Only few firms have formal R&D departments, as R&D had been outsourced to specialized corporations for applied research during GDR times and these corporations were transferred into R&D service providers after the unification (Günther et al., 2010). The foreign investors were not interested in building up R&D facilities or to relocate headquarter services to East Germany, as they missed suitable collaboration partners. This lack of R&D activities and attractive jobs limited the attractiveness for qualified human capital, and a high share of young qualified, especially female, workers migrated to West Germany and other West European regions (Blum et al., 2010; Fritsch; Stützer, 2007).

This first period lasted until 1995. At the end of this period, the incumbent industrial structure was almost completely eliminated, and the construction sector was the only sector with growth rates due to huge investments in public and private infrastructure. As the public budget deficits grew in Germany, however, this investment boom was also stopped after 1995. Instead, first successes in attracting industrial investors from West Germany, the US and other EU countries were achieved in the Southern regions of East Germany, mainly in Saxony and Thuringia. Leading sectors for these investments were the automotive sector (Volkswagen in Saxony, General Motors in Thuringia, later BMW and Porsche in Saxony and Mercedes in Brandenburg) and the IT sector in Dresden (Siemens, AMD), while Jena in Thuringia revived its tradition as location for the optics industry. Still, most of the investments were focused on standardised production, but oriented to the existing historical experiences in the regional industries. Simultaneously, the German government extended its investments into the public R&D infrastructure by building up new Max Planck and Fraunhofer Institutes and modernising the universities. The main structural challenges, however, remained in connecting all the different pieces towards a successful industrial and innovative system (Gehrke et al., 2010; Günther et al., 2010):

- building up collaborative structures between industry, transnational and regional firms as well as public research institutes and private R&D providers
- building up export industries with sufficient marketing expertise and a reputation as industrial and innovative location
- building up features to prevent further brain drain to West German regions and to attract private R&D investments

In the last decade, statistics still showed that East German firms might be similarly engaged in R&D activities and in the development of new products, but less efficient than their West German counterparts due to limitations in resources and network connections. Furthermore, collaboration structures were still less intense in East Germany than in West Germany. Due to the superior network structures, reputation and experiences of West German firms, in particular in medium high technology sectors like automotive, machinery and chemical sector, most private and public organisations in East Germany strived for connections to West Germany than for interactions within the region. This lack of intra-regional connections, however, almost inevitably restricts the potential to build up absorptive capacities and to exploit knowledge spillovers.
The most recent data on foreign investments in East Germany were provided by a study for the German Federal government looking for the structures of FDI to East Germany between 2003 and the end of 2008 and for the image of East Germany in international media and international organisations (PM & Partner, 2010). A total of 513 projects were considered, while those projects dealing solely with acquisitions, commercial real estate, retail and infrastructure were excluded. Most of the investments came from the United States and the incumbent EU-15 countries (see Chart 1). According to the challenges mentioned above, knowledge-driven investments searching for knowledge, scientific contacts and experts are even more important for the regional development, as they create employment, which could support knowledge spillover effects. Within this category, US investors are again the most important group, and the investors from US, UK, Japan, France and Switzerland represent 90 per cent of employment caused by knowledge-driven investments (see Chart 2). The share of employment from knowledge-driven investments within total employment from FDI of a specific country, however, shows that for investors in Denmark, Finland, Korea and Hong Kong the access to knowledge seems to be particularly important (see Chart 3).
The most important sectors, when considering employment effects from FDI, are IT and electronics, automotive and aerospace, tourism, health and clean industries, in particular renewable energies (see Chart 4). From the perspective of technology spillovers and their role in economic development, health and tourism investments are less important, as tourism investments were characterised by few large investment projects around the German capital Berlin and investments in the health sector mainly referred to standardized services like care for the elderly and contract research organisations. Investments in IT and electronics are particularly spatially concentrated in the Southern regions of East Germany with lighthouse investments in Dresden (“Silicon Saxony” with AMD and Infineon) and Halle.
(Dell). Aerospace investments are particularly driven by several investments of Rolls Royce, and the automotive industry gained importance by several investments from West German OEM causing international system suppliers to look for geographical proximity. The fastest growth rates in investments can be observed in the clean industry segment, as the renewable energy sector became a dominating industry with solar industry being heavily represented in Saxony, Thuringia and Saxony-Anhalt and several projects in bio-fuels and wind energy in the Northern East German parts of Mecklenburg Pommerania (see Chart 5 and also Ragnitz et al., 2009).

**Chart 4: New employment due to FDI to East Germany, 2003-2008 (PM & Partner, 2010)**

- Chemical Sector
- B2B/Creative
- Machinery
- Tourism
- Health
- Env./Ren. Energ.
- Autom/Aerosp
- IT Electronics

**Chart 5: Development of new employment due to FDI in East Germany (PM & Partner, 2010)**

- Chemical Sector
- B2B/Creative
- Machinery
- Tourism
- Health
- Env./Ren. Energ.
- Autom/Aerosp
- IT Electronics
These observations correspond with the results of other studies on FDI in East Germany and the emergence of innovation systems in East Germany (Günther et al., 2007; Günther et al., 2010; Gauselmann; Jindra, 2010; Thum et al., 2009). Due to the structural deficits, innovation output in general is lower in East Germany than in West Germany. Remarkable differences refer to those technology segments, where West Germany is relatively weak or the industry was developed only recently (Gehrke et al., 2010). Typical examples for this are high technology segments as IT and electronics and clean industries as renewable energies. Here, the competition by West German regions is less strong and investors face less path-dependencies from existing linkages to the West German innovation system (Boschma, 2007, on the relevance of path-dependencies in this context). On the contrary, aerospace and automotive grew in East Germany fuelled by investments from West Germany and foreign countries (Gebhardt; Bochow, 2007). In this sector, however, the R&D activities in East Germany are still limited, as most activities refer to assemblies and implementation of standardised production developed outside East Germany.

Studies on subsidiaries of foreign investors in East Germany revealed that these firms show a higher share of formal R&D investments and a higher share of product and process investments (Günther et al., 2007; Günther; Gebhardt, 2005). According to theory, competence-augmenting investors actually seek collaborations with scientific organisations and local knowledge-intensive firms, and the availability of human capital was assessed as a major location factor. For competence-exploiting firms, sales markets are more important motives, although linkages to local customers also led to technology spillovers. Correspondingly, the ranking of motivations for investors to East Germany, which was dominated during the first period after unification until 1995 from access to sales markets, cheap production factors and economies of scale, was shifted during the last fifteen years to access to sales markets, diversification of products and access to regionally bounded technology and knowledge (Gauselmann; Jindra, 2010).

A crucial factor for the recognition of East German is information. The recent study of FDI to East Germany between 2003 and 2008 showed that international investors often feel too weakly informed about the location factors in East Germany to include the region into investment decisions (PM & Partner, 2010). For those investors seeking to improve their technological knowledge and access to scientific organisations, however, the assessment of the availability of human capital, access to regional R&D collaborations as well as the soft factors as culture, urban living and childcare and education was always above average for East Germany (Gauselmann; Jindra, 2010 in contrast to Thum et al., 2009). This underlines the need for East Germany to overcome barriers to recognition by international investors and to offer opportunities for investors to gain experiences. Major deficits are still observed in the internationalisation of the regions with only low shares of foreign students and xeno-phobic attitudes in particular in rural areas.

As already mentioned, renewable energies and clean energies are a major hope for the economic development in East Germany. The next section will underline this by referring to the emerging network structures and the increased structural impact by solar industry activities in Saxony and Saxony Anhalt.

4 SOLAR VALLEY – A CASE OF VIRTUAL CIRCLES WITH DOMESTIC AND FOREIGN INVESTMENTS?

With increasing awareness on climate change and increasing scarcity of fossil fuel resources, the promotion of renewable energies became a popular political topic in many countries. Germany was one of the first countries to implement an effective feed-in tariff system in 2000 to generate reliable incentives by guaranteed minimum prices and demand. Simultaneously, subsidies for private
households to install solar plants on the roofs led to a sharp increase of demand for suitable equipment (Jacobsson et al., 2004). In West Germany, first research in photovoltaic technology started already in 1958, but never got out of a niche status, and many German firms relocated their sites in foreign countries. Hence, sufficient production facilities and research networks were missing in West Germany, when the Federal government increased the subsidisation. For East Germany, this created a “window of locational opportunity” (Scott; Storper, 1987; Klepper, 2007, on general arguments on the “window of locational opportunity”). First investments started in the 1990s in the Southern parts of East Germany, where former industrial experiences in using silicon and industrial infrastructures already existed and qualified human capital was available due to the collapse of industries after reunification. Furthermore, the subsidisation scheme for investors in East Germany helped the emergence of photovoltaic industry, as it was focused on capital-intensive production. These first investments in the 1990s, however, were not locally concentrated and had only weak employment effects (Brachert; Hornych, 2009).

Since 2001, the feed-in tariffs and other subsidies led to a sharp increase of photovoltaic turnover (EuPD Research, 2010). The turnover in the photovoltaic industry increased from 201 million Euro in 2001 to 8.6 billion Euro in 2009 (Bundesverband Solarwirtschaft, 2010) and employment from approximately 4,000 in 2001 to 80,000 in 2009 (see Chart 6).

![Chart 6: Employment in the German photovoltaic industry, 2000-2010 (EuPD Research, 2010)](image)

For East Germany, this increase corresponded to corporate strategies, which relied on the idea of building up a locally concentrated integrated value chain (Borchert; Hornych, 2009). Two examples for this vertical integration are Solarworld in Freiberg (Saxony) and Ersol in Erfurt (Thuringia), which caused an increased regional concentration of the industry. Similar effects were caused by the international investor Q-Cells in Thalheim (Saxony-Anhalt), which strived to limit technological risks by founding locally concentrated subsidiaries with different technological focus and achieving a diversified technological portfolio. As a result, employment in the East German photovoltaic industry in 2008 was mainly concentrated on four areas with Bitterfeld-Wolfen-Thalheim representing more than 25%, Freiberg more than 15%, Dresden more than 14% and Erfurt nearly 14% of employment in the East
German photovoltaic industry. Solarworld was founded in 1989 in Bonn (West Germany) and built its most important production site in Saxony. Ersol was founded in 1997 in Erfurt, listed on the German stock exchange in 2005 and transformed into Bosch Solar Energy after the West German corporation Bosch became major shareholder in 2008. The headquarters, however, are still in Erfurt (Thuringia). Q-Cells was founded in Berlin in 1999, listed in the German stock exchange in 2005 and has its headquarters in Thalheim (Saxony-Anhalt). Consequently, the photovoltaic industry is one of the few industries in East Germany with major players having their headquarters in the region and connecting the corporate strategy closely to the region.

Along with the growth of the photovoltaic industry in East Germany and the initial public offerings of the leading firms in 2005, the awareness by international investors increased. Correspondingly, the number of FDI projects in the renewable energy sector – and the photovoltaic industry specifically – increased sharply between 2006 and 2008 (PM & Partner, 2010, and Chart 5). Suppliers were particularly located in Saxony, where traditions in working with silicon and engineering skills from electronic and machinery engineering were available. Saxony Anhalt did not profit from this boom in the supplying industry, as its focus was more on basic research and the integrated production in Thalheim.

Simultaneously to this boom, several activities for cluster formation were intensified (Hornych; Schwartz, 2009 on the regional concentration of innovative activities in East Germany). Several regional universities in Saxony, Saxony Anhalt and Thuringia started to offer specialised engineering study programs on photovoltaic. An important stepping stone in the research system was implemented by the Fraunhofer Centre for Silicon Photovoltaics in Halle (Saxony Anhalt), which combines competencies from two Fraunhofer institutes in Halle and Freiburg (West Germany). The latest proof for the successful formal clustering process was the nomination of the “Solar Valley Mitteldeutschland” by the Federal German government as one of five clusters of excellence.

Besides these formal activities, a network analysis of the German photovoltaic industry actually underlines the high density of network connections between the firms (Hornych; Brachert, 2010). Based on investigations on four types of linkages – patents, supply chain linkages, capital flows and informal cooperation – in 2008, network linkages between the firms affect nearly 90% of the German industry. The network density was 0.066, which is remarkably higher than the results for the automotive, pharmaceutical or chemical industry, where the density was lower than 0.03 (Gilsing et al., 2008). Other remarkable results of this analysis include the high level of inclusion with two firms of the same components needing only two intermediaries in the average to be connected and the central position of integrated suppliers of solar cells and modules within the networks (Hornych; Brachert, 2008). Hence, there is a high probability of intensive knowledge flows through the photovoltaic network, as the main motivation for the high network density is seen in strategies to cope with political uncertainties (the level of subsidisation in Germany and other countries) and technological uncertainties on the dominating technology in the future. The central role for the integrated suppliers means that they are at the core of knowledge flows in Germany. As these integrated suppliers are in East Germany, the strong role of East German regions in developing this industry at least for Germany and the German exports should be maintained in the future. The main future challenge will lie in the development of a sustainable export model exploiting low factor costs by outsourcing to emerging countries but maintaining technological leadership within the local clusters.
CONCLUSION

For more than a decade after the unification, East Germany was assessed as a region, where FDI would play only a minor role in regional development, as the investments were targeted on sales markets and extended workbenches. But below this surface, a change of the potentials took place, as the preconditions for basic and applied research were improved and the availability of human capital with engineering skills and experiences increased the attractiveness for knowledge-driven FDI. These investments particularly affected the Southern parts of East Germany with a long industrial tradition and those sectors, where path dependencies in West German innovation systems did not restrict the willingness to build up new structures in East Germany. The photovoltaic industry is a perfect example, how East German regions used the “window of locational opportunity” to their favour. The near future will show whether this success story really turns into a sustainable innovation system, when the industry, which benefitted heavily from domestic subsidies, will demonstrate its competitiveness in increasing global markets.

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REGIONAL ASPECT OF MONETARY TRANSMISSION: THE ROLE OF BANKS AND FIRMS

Michal Šulc
michalio@seznam.cz

ABSTRACT

This paper deals with the role of banks and firms in the monetary transmission from the regional point of view. In the first part, structural factors of asymmetric monetary policy impacts are classified. These factors are the size of firms, type of ownership, industry capital intensity, type of production, degree of regional economy openness and the structure of portfolios. The second part concerns financial factors that play an important role in the monetary transmission through the supply side of the credit channel. These are spatial availability of the alternative financial sources, banks monitoring costs and health, ownership and size of banks in the regions. In the third part, the alternative endogenous money theory is shortly introduced. This approach considers regional money supply to be endogenous and adaptive to the regional money demand. The crucial role is played by the liquidity preference both at the supply and demand side of the credit market and by the stage of banking development at the supply side of the credit market. For particular topics the selected empirical evidence is cited and illustrative data for the Czech Republic and Czech regions are added in some cases.

KEY WORDS

Monetary transmission, regional finance, money, regions, firms, banks

INTRODUCTION

There has not been paid much attention to the regional dimension of financial-monetary problems (or rather to the “financial-monetary dimension of regional problems”) in the Czech Republic in the regional research yet. It could probably be due to the potential lack of regional monetary data, the possible fundamental conviction of Czech regional researchers of money neutrality, the previous and present quite positive trends of monetary development or simply the sufficient number and urgency of other theoretical and practical regional topics.

On the other hand, the amount of the theoretical and empirical foreign literature on this topic explicitly shows the fact that the influence of financial-monetary factors needs to be reflected in the regional development assessment. Most of the literature concerns the European Monetary Union and dates from the last two decades, for as Rodriguez-Fuentes (2006:5) points out, “when countries become regions, monetary policy suddenly matters again”. To a certain extent, this literature is seen to be concentrated on two very closely linked groups. The first one deals with the influence of monetary shocks on the regional economies based on the different regional economy/industrial mix. The second
group of regional financial-monetary literature is more concerned with money itself and is interested in the financial sector, especially in its structure, behaviour and role in the monetary transmission.  

In Šulc (2010) attention was primarily paid to the first topic mentioned above. The subject matter was the impact of monetary policy (MP) on the real economy, whereas the impact on the regional price and wage levels hasn’t been touched so far. This type of regional impact of MP assessment must be based on the second stage of the monetary transmission mechanism, which is the interaction between the financial quantities and the real economy through the transmission channels. The classification of the monetary channels is not unified and there are many methods of the classification in the topical research papers. The interest rate channel, credit channel, expectation channel, asset-price channel and exchange rate channel were specified.

Whereas there was an emphasis placed on the function of transmission channels itself in the mentioned article, the aim of this paper is to some extent different. It is intended to make a more detailed analysis of the role of banks and firms in the monetary transmission viewed regionally. As part of it, the regional aspects of an integral and integrative role of the credit channel and the financial sector were investigated and systemized. From the methodological point of view, relevant facts were generalized both from the theoretical and empirical literature and both at the national and regional level. The paper focuses as much as possible on the Czech conditions and sources, and that is why illustrative data for the Czech Republic were added in some cases.

The paper is organized in the following way. A role of firms in the transmission channels is described in the first part and thus the demand side of credit emission is in fact characterized. The second part is related to the supply side of credit emission, regional financial system and to the role of banks in the broad credit channel. The third part is devoted to the alternative Post Keynesian money theory and its regional treatment in principle. Finally, the conclusion mentions some implications for regional development.

1 CREDIT DEMAND, STRUCTURAL FACTORS AND THE ROLE OF FIRMS

The transmission channels do not work strictly separately but they mutually strengthen or weaken their impacts. The same mutuality is typical for the following characteristics of the regional economy/industry mix, for some of them can fulfill the function of more than one channel and even in the reverse direction.

The size of firms is the most frequently mentioned factor in assessing the asymmetric MP impacts on the regions. The larger the company is the more easily it can obtain an alternative source of finance in case

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1 Dow and Rodríguez-Fuentes (1997) made a broad regional financial literature survey. They classified each of the mentioned groups into three parts: the first one into reduced form models, large regional macro models and diffusion of open market operations; the second one into regional monetary multipliers, interregional financial flow of funds and regional financial markets (the last one is further grouped into interest rate differentials and regional credit availability). In Rodríguez-Fuentes and Dow (2003) there is a classification of the literature related to the different single monetary policy impacts to the EMU countries and regions added.

2 The impact on the regional price and wage levels is traditionally assessed via the Phillips curve apparatus (Dow and Montagnoli, 2007).
the interest rate (IR) and the credit costs rise. In other words, large companies can afford additional costs for the bonds emission or stock entry. Consequently, the more big companies reside in the region, the more resistant to the MP restriction the region is and the less IR-sensitive the credit demand is.

Nevertheless, not only the bonds or stocks represent alternative sources of financing. The foreign company can gain funds from its foreign owner or headquarters when its credit costs are lower than in the resident country. It is also possible that a crucial state firm could be funded by its owner in case of liquidity problems. Therefore, there is another structural variable: the type of ownership.

Picture 1 shows the share of the small and medium enterprises (SMEs) on the employment in the Czech regions and the regional distribution of Czech Top 100 non-financial companies.

**Picture 1:** [A] The share of SMEs on the employment in the Czech regions (2008, %) and [B] the regional distribution of Czech top 100 non-financial companies (2009)

*Source: [A] Czech Statistical Office, [B] CZECH TOP100. Where: PHA/Praha, ZLN/Zlínský kraj, JHM/Jihomoravský kraj, LIB/Liberecký kraj, KHK/Královhradecký kraj, OLO/Olomoucký kraj, STC/Středočeský kraj, KRV/Karlovarský kraj, JHC/Jihočeský kraj, VYS/Vysočina, PAR/Pardubický kraj, PLZ/Plzeňský kraj, UST/Ústecký kraj, MSK/Moravskoslezský kraj. Horizontal line in [A] means the Czech Republic value. In [B] two companies are missig for not being regionally located (Bosch Group and Siemens Group) and Prague with 47 companies is omitted for not clear number of just headquarters.

The industry capital intensity is an important factor of a potential asymmetric MP impact. The capital intensive industries, such as manufacturing or raw material mining, are more IR-sensitive for the higher share of the credit costs on the total costs, as most empirical assessments shows. Thus, the more of these industries form the regional economy the more the economy is IR-sensitive. Picture 2 shows the share of bank loans on the assets of Czech industries in 2009. The high bank loan share in manufacturing and mining is evident, as well as the higher share in domestic Czech businesses and very low share in state companies.
The share of bank loans on the assets of industries (%, 2009, CZ-NACE classification)

Source: Ministry of Industry and Trade of the Czech Republic. Where: B/ Mining and quarrying, C/ Manufacturing, D/ Electricity and gas supply, E/ Water, F/ Construction

Furthermore, the regions with the higher share of industries producing investment and durable goods are more IR-sensitive than others. The IR increasing raises the investments’ price and accordingly the less profitable investments are not realized. This implies that for instance constructing or electronics industries can be more affected than agriculture or services. Therefore, the type of production has to be considered when assessing the regional impact of MP. Picture 3/A shows the share of construction and services on the gross value added in the Czech regions in 2008.

The intensity of exchange rate movement effect in the regions is proportional to the degree of regional economy openness. Moreover, a different impact can be assumed for different industries. The domestic production industries will be less affected than export industries and the regions with higher share of export industries will be more IR-sensitive. The regional share of Czech regional goods export on the GDP is shown in the picture 3/B.

Picture 3: [A] The share of construction and services on regional gross value added (%, 2008) and [B] the share of regional goods export on the GDP (%, 2008)

Source: Czech Statistical Office
The asset price transmission channel influences the relative prices of assets. The IR rise can for example lead to the stock price decrease that can worsen the firms’ access to the credit. It could be also mixed with the exchange rate channel and with the currency structure of portfolios. Hence, the structure of firm portfolios has to be considered when assessing the regional MP impact.

Šmídková (2002) mentioned some other factors that condition the proper function of the monetary transmission mechanism. These factors are important especially at the national level, but at the same time have to be considered in the cross-country regional analyses. They are the country general framework made by its economic policy, the standard and size of capital markets and the stage of country development.

No empirical evidence of asymmetric MP impact on the Czech regions has been found. Šulc (2010) created an aggregate composite index to show the possible differences of the sensitivity of Czech regions to the monetary policy changes. Some industrial-mix factors mentioned above were included. The results show the possible differences in the intensity of impacts of MP on the Czech regions.

Relatively more attention is paid to the Optimum Currency Area (OCA) theory in relation to the Czech Republic, which is a similar problem from many points of view. For example, Komárek, Čech and Horváth (2003) assessed the costs and benefits of euro adoption in the Czech Republic. “The results suggest that the costs of adopting the common currency are comparable to the EU peripheral countries from the viewpoint of OCA theory, because there is sufficient trade integration, openness, symmetry of shock and structural similarity of exports between the Czech economy and the EU. ... By a slightly different method we compare the structural similarity of the Czech Republic and Portugal to the German economy and find that the Czech economy is closer.”

Table 1 shows selected foreign empirical evidence on the structural factors mentioned above.

**Table 1: The empirical evidence on the role of the regional industry-mix in the monetary transmission**

<table>
<thead>
<tr>
<th>paper</th>
<th>dataset</th>
<th>spatial level</th>
<th>results /what matters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedola and Lippi (2000)</td>
<td>21 manufacturing industries in 5 OECD Countries</td>
<td>national</td>
<td>type of output, capital intensity, firm size, interest rate burden</td>
</tr>
<tr>
<td>Arnold and Vrugt (2002)</td>
<td>12 industries in the Netherlands</td>
<td>regional</td>
<td>industry type, interest coefficients</td>
</tr>
<tr>
<td>Owyang and Wall (2006)</td>
<td>18 US regions in 1960-02</td>
<td>regional/sub regional</td>
<td>manufacturing sample period, firm size</td>
</tr>
<tr>
<td>Ganley and Salmon (1997)</td>
<td>24 sectors in the UK</td>
<td>national</td>
<td>industry type, firm size</td>
</tr>
<tr>
<td>Carlino and DeFina (1998)</td>
<td>US regions</td>
<td>regional</td>
<td>industry type</td>
</tr>
</tbody>
</table>

Source: author, selected papers

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3 It is worth reminding that the OCA theory assumes i.a. the diversification of production and export structure (see e.g. Mandel and Tomšík, 2008).
To sum up the structural approach, this type of analysis shows the possible different MP impacts on the regions. There are no market imperfections assumed and the money supply and IR are exogenously defined. In the traditional IS-LM model, the region within the country or the country within the OCA has a horizontal LM curve and the impact of IR increasing depends on the elasticity/slope of the IS curve. “... The different effect of monetary policy is explained by the asymmetric impact of national monetary shocks on regions having structural differences with respect to the national average. ... These contributions are based on the Optimum Currency Area approach or orthodox monetary theory more generally.” (Rodríguez-Fuentes and Dow, 2003:972)

2 BROAD CREDIT CHANNEL, FINANCIAL FACTORS AND THE ROLE OF BANKS

In this part, attention is paid to the credit channel and the structure of the financial sector. This approach assumes the existence of market failures, especially the asymmetric information, that play an important role in the regional MP impacts.

The credit channel is often described as a kind of “meta” channel or the channel that works through the rest of the stated channels, sometimes called traditional channels. It is very often subdivided into two channels according to what side of credit market is influenced. The “borrowing channel” concerns the demand side of credit and the “lending channel” or “broad credit channel” concerns the supply side of credit. Using the Dow a Montagnoli (2007) approach in principle, the borrowing channel was described in the first part of this paper. Nevertheless, at least one note has to be added to that first part. When considering the size of a firm and the possibility to reach alternative financial sources the spatial availability has to be taken into account. In a case when the alternative source is not spatially available the monetary restriction is more effective and the region is more IR-sensitive.

The primary role in the broad credit channel has to be ascribed to the structure of financial sector or particularly to the type of banking sector. Porteous (1995) distinguishes a centralized, decentralized and mixed banking system. The foundation-stone of his theory is the distance between the lender and borrower that causes the information asymmetry. There are two types of this distance: “the spatial distance” and “the informational distance”. The latter predominates in the age of information technology and causes the “cost of monitoring”.

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4 The author summarizes his findings in this way (1995:208):

1. When the costs of monitoring increase with distance between a bank and its borrowers, spatial credit rationing may result.

2. When banks do not compete on price terms and when the market potential is uneven, then banks may choose to agglomerate at the point of highest potential.

3. By allowing perfect diversification of a bank lending portfolio in the face of a counter-cyclical aggregate shock, a branch banking system will dominate other forms of inter-regional lending, namely direct or correspondent lending.

4. However, under certain assumptions, a branch banking system may result in the regional drainage of funds, in the sense that deposit resources from one region may be used disproportionately to finance borrowers in another region who are the same as borrowers in the first region, except that they are nearer to the branch bank headoffices.
In case of decentralized banking system there are small distances between the lender and borrower. The smaller the distances, the smaller the bank can be and the better the bank can satisfy the regional borrower’s requirements. On the other hand, the small (regional) banks can face deeper liquidity problems that influence the asset side of banks’ balance sheets. “Thus the bigger the impact of restriction to the credit is the more different is the finding of sources for which the reserves are not created. These are e.g. the sources in the form of deposit certificates, bonds or inter-bank market loans. The decrease of the credit volume consequently influences the real economic activity whereas the bigger the final effect is the worse is the finding of non-banking alternative financial sources. The intensity of credit channel is then dependent on the financial structure of the economy.” (Kotlán a Macháček, 2000)

Even in case of centralized banking system the bank behaviour can play regionally an important role. The rating of peripheral clients can be done in a very difficult and expensive way or it is not possible to be done at all. The insufficient regional credit supply can lead to financial problems of firms in the regions and consequently to an uneven regional development. Porteous (1995) concludes that the free interregional capital movement and financial unification lead to the centralization of financial markets which further deepens the uneven core and periphery development. The centralized banking/financial system backs the efflux of capital from the periphery to the core and thus increases regional disparities. This is a concept of so called “regional drainage” described by Gunnar Myrdal earlier (see e.g. Blažek, 1997). Nevertheless, the regional drainage is not a product of information asymmetry, but it is an effect of typical market behaviour of the banks. In the core region with positive investment climate and high growth dynamics the economic bodies accept the higher IR for the investments here are more profitable. In case of perfect interregional capital mobility, the capital flows to the core region.

Analogous to the influence of the ownership of firms for their IR-sensitivity, the banks behaviour can be affected by the type of ownership. “Affiliates in host countries with tight financing constraints (high money market rates, tough competition for deposits, etc.) may take recourse to funds from the parent. Conversely, affiliates with an overhang of free liquidity may receive incentives from the parent to divert funds from local lending to preferential alternatives abroad with a higher yield (including lending to the parent itself up to the standing regulatory limit).” (Derviz and Raková, 2009:2)

Foreign empirical evidence on the credit channel is shown in table 2 and Czech empirical evidence is illustrated below.

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5. If large banks incur large fixed costs in making and monitoring loans, then small businesses may be rationed out of credit by them; small banks, which are closer to their clients, may have lower fixed costs and therefore be able to serve better small businesses.

When small banks face high costs of obtaining loanable funds because of their small (and therefore less diversified) size, a system of inter-bank borrowing, whereby the small banks contract with the large, may result in greater credit flow to small businesses.
Table 2: The foreign empirical evidence on the broad credit channel

<table>
<thead>
<tr>
<th>paper</th>
<th>dataset</th>
<th>spatial level</th>
<th>results /what matters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>bank size just in the large bank segment</td>
</tr>
<tr>
<td>Owyang and Wall (2006)</td>
<td>18 US regions in 1960-02</td>
<td>regional/sub</td>
<td>bank size and concentration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regional</td>
<td>MP propagation mechanism</td>
</tr>
<tr>
<td>Kayshyap and Stein (1997)</td>
<td>US banks</td>
<td>national</td>
<td>bank size and health availability of non-bank sources</td>
</tr>
<tr>
<td>Ehrmann et al. (2001)</td>
<td>Euro Area</td>
<td>national</td>
<td>liquidity of individual banks</td>
</tr>
</tbody>
</table>

Source: author, selected papers

Pruteanu (2004) investigates the influence of MP on the credit supply in the Czech Republic in the years 1996-2001. She finds the MP shocks response in the credit supply caused by the liquidity and capitalization of the banks in the period 1996-1998. She also notices the differences in the credit supply in the period 1999-2001, but this time caused by a different bank size and a different share of classified loans in bank portfolios.

Blažek (1997, 2002) focuses on the development of the banking sector in the Czech Republic in 1990-2000. After the early period of transformation when the uncontrolled development occurred, the Czech banking sector has been dramatically centralized and concentrated. Whereas the number of banks (without foreign banks affiliates) had risen to 48 in 1994, from that year the number has been permanently decreasing to 29 in 2000 and 16 in 2009. The same trend is visible in the regional distribution of banks headquarters. There were 13 towns with the bank headquarters in 1994 and 4 towns in 2000 and 4 towns (Praha, Jindřichův Hradec, Cheb, České Budějovice) in 2009 in the Czech Republic.

Table 3 shows the regional structure of selected types of financial subjects on 31.12.2009. According to the table, just three banks have not their headquarters in Prague. Nevertheless, according to the Oberbank (JHC, České Budějovice) website (www.oberbank.cz, cit. 29.9.2010) it has real headquarters in Prague and national territorial scope. On the contrary, Waldviertler Sparkasse von 1842 AG (JHC, Jindřichův Hradec) and Raiffeisenbank im Stiftland (KRV, Cheb) can be considered as typical regional banks. The former has its affiliates in Jindřichův Hradec, Dačice, Moravské Budějovice, Pelhřimov, Třebíč and Třeboň, the latter in Cheb, Planá and Plzeň.
Table 3: Regional structure of selected types of financial subjects (31.12.2009)

<table>
<thead>
<tr>
<th>region</th>
<th>banks (^1)</th>
<th>cooperative banks</th>
<th>insurance companies (^2)</th>
<th>foreign banks representations</th>
<th>total</th>
<th>total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
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<td>17</td>
<td>53</td>
<td>25</td>
<td>134</td>
<td>100,0</td>
</tr>
<tr>
<td>PHA</td>
<td>36</td>
<td>13</td>
<td>47</td>
<td>23</td>
<td>119</td>
<td>88,8</td>
</tr>
<tr>
<td>JHC</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
<td>1,5</td>
<td></td>
</tr>
<tr>
<td>JHM</td>
<td>1</td>
<td>2</td>
<td></td>
<td>3</td>
<td>2,2</td>
<td></td>
</tr>
<tr>
<td>KHK</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>0,7</td>
<td></td>
</tr>
<tr>
<td>KRV</td>
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<td></td>
<td></td>
<td>1</td>
<td>0,7</td>
<td></td>
</tr>
<tr>
<td>LIB</td>
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<td>2</td>
<td>1,5</td>
<td></td>
</tr>
<tr>
<td>MSK</td>
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<td>1</td>
<td></td>
<td>2</td>
<td>1,5</td>
<td></td>
</tr>
<tr>
<td>OLO</td>
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<td>0,0</td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td>2</td>
<td>1,5</td>
<td></td>
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<tr>
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<td>0</td>
<td>0,0</td>
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<tr>
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<td>0,0</td>
<td></td>
</tr>
<tr>
<td>UST</td>
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<td>0</td>
<td>0,0</td>
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<tr>
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<td>1</td>
<td>0,7</td>
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</tr>
<tr>
<td>ZLN</td>
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<td>1</td>
<td></td>
<td>1</td>
<td>0,7</td>
<td></td>
</tr>
</tbody>
</table>

Source: Czech National Bank. 1) incl. foreign banks affiliates and building societies, 2) incl. foreign insurance affiliates

Hampl and Matoušek (2000) examine the credit emission contraction in 1997-1999. The authors state it was not a case of so-called credit crunch\(^5\), but it is possible to explain the change through the standard economic apparatus. According to the authors, the contraction was caused by the change of behaviour of big banks, especially Česká spořitelna and Komerční banka, as a result of the regulatory framework change and the permanently low and unprofitable performance of the business sphere. Picture 4 shows the development of the volume of non-financial corporations’ loans in the Czech Republic in 1993/1-2010/8.

\(^5\) The situation when the credit supply curve is moving left on the credit market, without the real IR change or the change of the quality of borrowers. For more details see Hampl and Matoušek (2000).
Buchtíková (2001) analyzes the Czech corporate database in the years 1995-1999 in relation to the credit channel and the IR movements. She finds i.a. that 1) Czech firms were very dependent on the bank credit in the monitored period, more than German firms. 2) The highest IR change sensitivity had the companies under foreign control. Nevertheless, regarding the high possibility of financial sources substitution in these companies, the effect of IR change on the credit volume of this sector is limited in the overall credit emission. 3) In the private companies, that are very dependent on the credit flows, there was relatively low IR change sensitivity of credit volume in the monitored period. 4) In the public companies the influence of IR change on the credit volume change is very low. Nonetheless, it is possible to see the high dependence of investments on the credit flows during the whole period.

Derviz and Raková (2009) undertake an analysis of the influence of the parent bank abroad on its affiliates with special intent to the Czech Republic, where “more than 80 per cent of banking sector assets, deposits and loans are held by banks with a foreign majority shareholder or by foreign bank branches.” (p.2) „The results shed new light on the effects that a large-scale presence of foreign bank affiliates can have in their host countries, in particular as regards their influence on the (in)effectiveness of local monetary policy. It seems that parent bank influence does not have to be a dominating factor in interest-rate setting on aggregate, but can influence the cost of credit in those borrower categories that are of major importance for the affiliate as clients. Accordingly, whereas the host country monetary policy is targeted at credit conditions for everyone, foreign-controlled banks are able to interfere with this policy in a particular class of economic agents that are strategically significant for its business. Altogether, the said parent influence, although occasionally statistically significant, appears to be of subordinate importance economically, at least in the Czech banking sector in the pre-2008 crisis period.” (p.21)

To summarize the broad credit channel approach, the financial structure of the regions plays an important role in the regional monetary transmission. The regional financial structure can be expressed through the spatial availability of alternative financial sources, costs of monitoring and the size, ownership and health of banks. This approach assumes market imperfections. The money supply is exogenous at the national level and (partly) endogenous at the regional level but regions have no chance to control it. “...even if regions were to use monetary tools, their extreme openness and perfect capital mobility would leave them no possible control over their monetary conditions (the money supply
would be horizontal at some interest rate level and, therefore, endogenous.” (Rodríguez-Fuentes, 2006:4)

3 ENDOGENOUS MONEY, THE BEHAVIOURAL FACTORS AND THE MODIFIED ROLE OF CENTRAL BANK

The first two parts of this paper concern the mainstream economics approaches to the regional monetary transmission. The Post Keynesian money theory, as a fully developed alternative to the neoclassic and New Keynesian money theories (Sojka, 2010), will be outlined including its spatial dimension in this part.

The endogenous money supply is the foundation-stone of the Post Keynesian money theory both at the national and regional level. The money supply is determined by the credit demand that is dependent on the firm activities and expectations of the future development and therefore the money supply is determined by the aggregate demand in principle. The money holding is an instrument of the defence against the uncertainty in the economic development. The theory rejects the standard causality of the quantitative money theory and promotes the behavioural factors both at the firm and bank sides.

Picture 5 shows the Post Keynesian regional monetary theory that considers the regional money supply to be endogenous and adaptive to the regional money demand. The crucial role is played by the liquidity preference both at the supply and demand side of the credit market and by the stage of banking development at the supply side of the credit market.

Picture 5: Post Keynesian regional monetary theory

Source: Rodríguez-Fuentes and Dow (2003)

The Post Keynesian treatment of money has a large implication for MP itself and the status of the central bank. The MP of the central bank should consist of the efforts for stable and sound development of a banking sector, including the function of the lender of the last resort and the bank regulation and supervision. (Sojka, 2010).

The regional MP impacts assessment on the regions should thus focus on the assessment of the MP impacts on the liquidity preference both at the regional investors’ side and banks’ side. The latter has

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6 For more details see e.g. Sojka (2002, 2010), Dow (1987), Chick and Dow (2002) or Rodríguez-Fuentes and Dow (2003).
the crucial influence on the credit availability in the regions. The same attention should be paid to the stage of the development of the banking sector in the regions, for it is an important factor for the development and growth.

CONCLUSION

The role of large firms in the regions is traditionally assessed through their influence on the economic growth by means of production, unemployment or export performance. In this article, an attempt was made to inspect the problems from the view of monetary theory, i.e. from the view of money supply and demand and their changes in case of monetary shocks.

Three approaches were introduced. The role of big companies is crucial in all of them. Following the credit theory or the endogenous money theory, the regional financial market structure, the structure and development of banking sector and the financial behaviour and market imperfections, especially asymmetric information and segmentation, need to be considered as important regional development factors.

There are two main implications for the regional development. First of all, the regional differentiation of MP impacts can weaken the MP itself and also the impacts of the fiscal policy can be affected. The intensity of the interaction of both types of policies can vary in regions and thus weakens the whole economic policy mix. Nevertheless, the structural-mix approach could be used for every type of economic policy and doesn’t regard money itself. For example, the asymmetric impact of the corporate tax rate increase can be expected and the regional disparities would probably be affected by this action.

On the contrary, the financial-mix approach and the endogenous money theory imply that money itself and the financial/behavioural factors must be considered as one of the most important and endogenous variables in the regional analyses.

REFERENCES


SPATIAL PLANNING AND TOURISM DEVELOPMENT IN PORTUGAL

Sandra Bailoa, Pedro Cravo
School of Technology and Management, Polytechnic Institute of Beja, Portugal
sandra.bailoa@ipbeja.pt, pedro.cravo@ipbeja.pt

ABSTRACT
Each country must have a development policy that considers the contribution of spatial planning, because it ensures a balanced and sustained occupancy of the territory. In consequence, regional development will also be favoured. The regional scale of planning is acknowledged as an appropriate scale for attaining a sustainable development, yet, regional planning faces many challenges and tourism development in sensible environments is particularly prone to these problems. But tourism is, in fact, one of the activities that can contribute to the regional development of a great number of less developed regions in several countries. This paper presents the Portuguese territorial management system and uses the example of three Portuguese regions to show how tourism planning can have an important role on their development.

KEY WORDS
Interactive planning, Portugal, Regional development, Spatial planning, Sustainable development, Territorial management, Tourism development, Tourism planning.

INTRODUCTION
Spatial planning is an important instrument of the economic and social policy of a country because it ensures a balanced and sustained occupancy of the territory. Its relation to regional development is direct since it contributes to reducing regional disparities and ensures a more harmonious and better distribution of equipment, infrastructure and economic activities.

Regional development may be attained by different means, according to the intrinsic characteristics of each region. One of the activities that may contribute to regional development is tourism, as it may be started without high investments and brings immediate benefits to the populations. In this context, tourism has become a key activity in Portugal in the development process of many regions, without which they would have not reached a better quality of life for their population.

The objectives of this paper are, on one hand, to show how the territorial management system is organized in Portugal, how tourism planning and development can be implemented and, on the other hand, to demonstrate through some examples how the evolution of spatial planning in Portugal has affected tourism development of some local destinations.
1 SPATIAL PLANNING

There are various terms that we can use in this area, like spatial planning, land use planning, town and country planning, regional planning, urban planning (Council of Europe, 2007). Also, there are numerous definitions of spatial planning. According to the Portuguese Constitution (article 66 no.2(b)), Spatial Planning aims to ensure the adequate location of activities, a balanced social and economic development and the enhancement of the landscape, and it is an essential responsibility of the State, to be carried out with citizen participation, in a framework of sustainable development.

Spatial planning is, basically, the management of the natural interaction between man and space and it is essentially used to correct the space effect of human and economic agents’ activities. Planners deal with many subjects related with land use, as the development of transportation and infrastructure, the protection of natural and cultural resources, habitats and environment, the conversion of natural to urban built areas, the planning of social services and equipments, etc. So, we can say that spatial planning is an important part of social and economic policy, to ensure that the land is used efficiently and that is why it has contributions from many disciplines like urban planning, geography or architecture, among others.

The European Regional/Spatial Planning Charter (1983) presents one of the earliest spatial planning definitions:

“Regional/spatial planning gives geographical expression to the economic, social, cultural and ecological policies of society. It is at the same time a scientific discipline, an administrative technique and a policy developed as an interdisciplinary and comprehensive approach directed towards a balanced regional development and the physical organisation of space according to an overall strategy.”

According to this document, spatial planning should always try to maintain a long-term oriented, functional, comprehensive and democratic characteristic. As for its fundamental objectives, it must strive to achieve: balanced socio-economic development of the regions; improvement of the quality of life; responsible management of natural resources and protection of the environment; and rational use of land. The implementation of spatial planning objectives by public and private agencies seeks the co-ordination between the various sectors, facilitates co-ordination and co-operation between the various levels of decision-making and the equalisation of financial resources and implies the public participation.

At the European level, everything began in 1970 in Bonn, where the activities of the Council of Europe, relating to spatial planning started with the first European Conference of Ministers responsible for Regional Planning (CEMAT). So, in the last decades, the EU developed a set of important initiatives for the Spatial Planning and some fundamental documents, which have guided spatial planning policies, have been published and adopted. The signature of the European Regional/Spatial Planning Charter, adopted in 1983 at the 6th Session of the CEMAT in Torremolinos was one of the earliest initiatives but there were others of the same importance, like the implementation of European Spatial Development Perspective (ESDP), in 1999; The Guiding Principles for Sustainable Spatial Development of the European Continent, adopted at the 12th Session of the CEMAT, held in Hanover in 2000; the establishment of the ESPON Programme 2006 (European Spatial Planning Observatory Network Programme 2006); and the Territorial Agenda for the European Union, in 2007.

All these initiatives have guided spatial planning policies in Europe and, in particular, have been a reference in Portugal, as a member of the EU since 1986.
2 SPATIAL AND URBAN PLANNING IN PORTUGAL

The basis for the present Portuguese spatial and urban planning policy was established in August 1998, with the approval by Parliament of the Law 48/98. Some say that this law came a little too late because many of the territorial dynamics were already established during the previous years. Either way, this law has a fundamental importance because it defines the framework for the spatial and urban planning policy in Portugal, considering the European framework, and defines a territorial management system that regulates and coordinates the relationships between the different levels and sectors of public administration.

This law establishes specific objectives for spatial and urban planning depending on the nature of underlying territorial reality, by promoting (article 6 of Law 48/98, of August 11th):

(a) The improvement of living and working conditions for populations, respecting cultural, environmental and landscape values;

(b) A balanced distribution of housing, work, leisure and culture functions;

(c) The creation of opportunities for diversified employment as a means for fixing populations, particularly in less developed areas;

(d) The conservation and protection of soil naturally suited or exploited for agricultural, farming or forestry activities, restricting their allocation for other uses to the cases that this is proven really necessary;

(e) The adequacy of urban densification, preventing the degradation of quality of life, as well as the imbalance of economic and social organization;

(f) The rationalization of existing infrastructures, avoiding unnecessary extension of urban perimeters and networks and rationalizing the use of interstitial areas;

(g) The implementation of a housing policy that allow the solving of existing shortcomings;

(h) The rehabilitation and revitalization of historic centres and of classified elements of cultural heritage;

(i) The restoration or rehabilitation of degraded areas;

(j) The redevelopment of urban areas of illegal origin.

This law also presents the following ensemble of principles that must guide the spatial and urban planning policy (article 5): sustainability and intergeneration solidarity; economy; coordination, subsidiarity, equity, participation, responsibility, contractualization and legal security.

Resources used on spatial and urban planning comprise (article 10 of Decree-Law 380/99): national defence, security and civil protection areas; natural values and resources; agricultural and forest areas; ecological structure; architectural and archaeological heritage; transport network; collective equipment and infrastructures network; urban system; location and distribution of economic activities.
There were other legal documents published in the development of Law 48/98, all of which intend to contribute to the building of a territorial management system. To understand the Portuguese territorial management system we must understand the Portuguese administrative structure, which has three levels: the national, the regional (two autonomous regions – Azores and Madeira) and the local (a total of 308 municipalities, of which 19 in the Azores and 11 in Madeira). So the responsibility for the Spatial Planning Policy (according to article 4 of Law 48/98) is distributed in the following way:

At the national level (in the central government), there is the Ministry for the Environment, Spatial Planning and Regional Development (MAOTDR) with the General Directorate for Spatial Planning and Urban Development (DGOTDU) which is the department of central administration responsible for the preparation, implementation and assessment of the spatial and urban planning policy;

At the regional level, there are two administrative regions in the archipelagos – Madeira, with the Regional Directorate for Spatial Planning, and Azores, with the Regional Directorate for Spatial Planning and Water Resources. In the mainland, the Regional Coordination and Development Commissions (CCDR) are decentralized bodies of central administration present on the other five NUTS II regions.

At the local level, there are the City Councils and spatial planning is a direct responsibility of each of these local authorities. They prepare, approve and implement spatial plans.

The Law organizes, in a coordinated interaction framework, the territorial management system in 3 levels with some specific functions. As table 1 shows, the system comprises a set of plans integrated and coordinated between the different levels and functions.

Table 2: Territorial Management System

<table>
<thead>
<tr>
<th>LEVELS</th>
<th>INSTRUMENTS</th>
<th>FUNCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>National Spatial Policy Program (NSPP)</td>
<td>Strategic</td>
</tr>
<tr>
<td></td>
<td>Sector Policy Plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>transport, energy, communications, tourism, health</td>
<td>Strategic</td>
</tr>
<tr>
<td></td>
<td>care, environmental, commerce, industry, agriculture,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>forest, culture, etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special Plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nature conservation and classified area plans</td>
<td>Regulatory</td>
</tr>
<tr>
<td></td>
<td>Public reservoir plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coastal zone plans</td>
<td></td>
</tr>
<tr>
<td>Regional</td>
<td>Regional Spatial Planning Plans (RSPP)</td>
<td>Strategic</td>
</tr>
<tr>
<td>Local</td>
<td>Inter-municipal Spatial Planning Plans (ISPP)</td>
<td>Strategic</td>
</tr>
<tr>
<td></td>
<td>Municipal Master Plans (MMP)</td>
<td>Regulatory</td>
</tr>
<tr>
<td></td>
<td>Urbanization Plans (UP)</td>
<td>Regulatory</td>
</tr>
<tr>
<td></td>
<td>Detail Plans (DP)</td>
<td>Regulatory</td>
</tr>
</tbody>
</table>

Source: Law 48/98

There are other legal instruments of the Portuguese Territorial Management System that constitute the Fundamental Network of Nature Conservation. They are: RAN (National Agricultural Reserve), REN (National Ecological Reserve), Natura 2000 Network, National Network of Protected Areas and Public Water Domain. All these instruments compose the legal regime that plays a decisive role in the preparation of Portuguese land-use plans and imposes restrictions in agricultural areas and in ecosystems considered essential to the ecological balance, helping to protect natural and cultural values.

The NSPP, instituted in 2007, is the major reference to national spatial planning and recognises the biggest spatial planning problems in Portugal, organising them into 6 domains:

1 – Insufficient valuing of natural resources and inefficient risk management;
2 – Disordered urban expansion;
3 – Transports and energy economic and environmental inefficiency and unsustainability;
4 – Insufficient systems to support the competitiveness, connectivity and international projection of economy;
5 – Inadequate territorial distribution of collective equipment and infrastructures;
6 – Lack of a civic culture of spatial planning and inefficiency of the information, planning and territorial management systems.

The aforementioned plan also tries to find some solutions to these major problems and delineates six major strategic goals for the period 2005-2025:

1 – To preserve and value natural and cultural heritage, to use in a sustainable way energy and geologic resources, and to prevent and minimize the risks;
2 – To reinforce Portugal’s territorial competitiveness and its integration in the Iberian, European, Atlantic and global spaces;
3 – To promote the polycentric development and to reinforce infrastructures that support territorial cohesion;
4 – To assure equity in the provision of collective equipment and infrastructure and the universality of access to general interest services, promoting social cohesion;
5 – To expand information and communication networks and infrastructures and promote its growing use by the citizens, companies and public administration;
6 – To reinforce the quality and the efficiency of territorial management, promoting active, responsible and informed participation of citizens and institutions.

This entire legal framework, with the accompanying policies, plans and measures, seems to demonstrate that the Portuguese society is, nowadays, very much aware of the importance of spatial planning for the development of the country.

3 SPATIAL PLANNING, REGIONAL DEVELOPMENT AND TOURISM

All countries show economic differences between its regions, like differences in the distribution of income, in productivity levels, in access to the labour market or in access to the essential goods and
services, among others. These differences are regional disparities. They are regional inequalities of welfare or development between regions. One of spatial planning’s main goals is to promote regional development and to reduce spatial development disparities.

Governments at each level adopt policies to reduce regional disparities. At the regional level we can see many examples of incentives regarding location, which are ways of providing a financial support to encourage the companies location in certain regions like grants to enterprises; direct financial support indexed on precise objectives: training, research, purchase of equipment, etc.; taxes reduction; measures to reduce the capital cost (loan guarantees, preferential interest rates, etc.); reduction of some costs, such as electricity, postal tariffs and infrastructures. Another important policy is the investments in public infrastructure and public facilities in disadvantaged areas, which tries to give the regions a stock of public capital to convince companies to settle or to expand to that region: industrial parks, hospitals, schools, research centres, sanitation, infrastructure, electricity, water and telecommunications, among others. Investment in transport and communication is a strategy to remove the isolation of the less developed regions and we can enumerate the construction of roads, highways, railroads, high-speed lines, airports or ports. There are some other strategies, like the decentralization of government, which has the goal of redistributing regional employment, and the inter-regional redistribution of income, through financial support to families and local authorities, whose final goal is also to reduce the regional disparities (Polèse, 1998). At regional level, we can mention the importance of the European Union’s Regional Policy on spatial planning in Portugal, with the use of a variety of financing operations, mainly the Structural Funds and the Cohesion Fund, which have allowed the improvement and expansion of many infrastructures that were decisive to the country development.

At the local level there are many examples of regional development measures, like to promote entrepreneurship and to develop policies to support SMEs, to encourage private and mixed networks of interaction and to mobilize the endogenous development (i.e. local productions) (Polèse, 1998). The support of local authorities can play an important role in local development reducing local taxes, giving special conditions in local tariffs (water, electricity, etc.), creating benefits in the use of land or buildings (rent at low rates), or the construction of public infrastructures (roads, industrial parks, etc.).

Beyond these, an important sector to regional development is tourism. This sector can have a major contribution to reduce regional disparities. It can function as an engine for regional development and as a factor of global economic expansion. Cunha (2006) points some reasons for this, like the fact that tourism allows the exploitation of heritage sites and values and, alongside with the primary sector, is the activity that best can enter a process of regional development. It allows the transfer of income from one region to another so tourism can be a factor of income redistribution. It also allows the construction and implementation of infrastructure and services (needed for tourism) that will benefit the global population and permits the modernization of local production and the attenuation of regional imbalances.

But we must find the most adequate tourism development model for each region, because not all regions may rely on tourism for their development. There has to be a minimum quantity of benefits for the regions, are according to their capacities and possibilities, to justify it. We must verify that there are viable tourist requirements and it is necessary to analyze the tourism capital, like tourists, human and financial resources and the attractiveness of the destination (Cunha, 2006).

The role that tourism plays in regional development can be seen in on of the following ways (Cunha, 2006):
- Integrated Development, when tourism is the engine of development; when it is a strategic sector for development.
- Catalytic Development, when tourist activities emerge as stimulating the development of a region but, assuming a complementary role.
- Accessory Development, when tourism activities can be useful for regional development as a means of diversification of economic activity.

4 TOURISM PLANNING AND DEVELOPMENT

The success of most of local and regional rationally planned tourist destinations and the negative experience of many unplanned locations demonstrates that tourism development should be based on a planning process that includes a solid assessment of the destination resources and their attractiveness potential.

Although used commonly, the term destination doesn’t always mean the same thing. It may be a city, a region, a hotel or a country. Regardless of what geographic scope the term has, a destination is a product that must be marketed to its consumers. Like most products, destinations have a lifecycle. Nowadays the Tourism Area Life Cycle model (Butler, 1980) is widely known. According to it a destination begins as a relatively unknown place and visitors initially come in small numbers restricted by lack of access, facilities, and local knowledge. In Picture 1 this is labelled as Exploration phase.

Picture 7: Butler’s Tourism Area Life Cycle model

As the local community grows aware of the benefits it can obtain from tourists and starts to offer some specific services, we have the Involvement phase. The word spreads as more people discover the destination and the amenities are increased and improved (Development phase). Consolidation is attained when tourism has become a major part of the local economy and visitors’ growth starts to decrease.

Stagnation happens when tourist arrivals reach some theoretical carrying capacity and, although not declining, stop growing as before. The rise from Exploration to Stagnation often happens very rapidly, as implied by the exponential nature of the growth curve.
After this we have a rage of possible outcomes represented by the possible trajectories indicated by dotted lines A to E. It is possible to cause a destination to follow trajectories A and B toward Rejuvenation, either by technological developments or infrastructure improvements leading to increased carrying capacity. On the other way, trajectories C and D may be result of increased congestion and unsustainable development, causing the resources that originally drew visitors to the destination to become corrupted, or no longer exist. Trajectory E would only happen after a severe crisis or disaster.

Some critics may say that the life cycle curve is affect by a lot of external factors, like the type of products on the destination, the competing environment, the changes of consumer goods’ prices, the changes of consumer interests and behaviour, etc. This is, in fact, true, but the destination life cycle theory brings on many important functions, like predicting the destination’s future development trend or providing farsighted basis to managers to establish marketing strategies, for instance.

Getting back to the main focus of this paper, it is easy to understand that the concept of tourism planning is directly related to tourism development. Tourism planning can be viewed either as a process or as an activity. Planning activities have expanded dramatically during the last few decades and have been developed and implemented by politicians, social scientists, and community representatives. Currently, the stages of implementation and development are significantly more complex than in the past. The new planning activities emphasize a cooperative approach, which results in better reasoned strategies. In the tourism domain three major agents direct the planning business: government, supragovernmental agencies (i.e. World Tourism Organization), and professional planners (who usually act at the regional and local levels).

Many of the researchers believe that in the tourism industry an interactive approach has some priorities over other approaches. According to Ackoff (2001), interactive planning has two parts: idealization and realization. These parts are divisible into six interrelated phases:

A – Idealization
(1) formulating the mess,
(2) ends planning,
B – Realization
(3) means planning,
(4) resource planning,
(5) design of implementation, and
(6) design of controls.

Formulating the mess: The system of problems that every organization faces is what is called the mess. The aim of this phase is to determine how the organization would eventually destroy itself if it were to fail to adapt to a changing environment. This identification provides a focus for the planning that follows by identifying what must be avoided at all costs. This phase involves a detailed analysis and description of how the system currently operates; an obstruction analysis, identifying those characteristics and properties of the organization that obstruct its progress; reference projections, projecting aspects of the organization’s future assuming two scenarios, one with no change to the current plans, policies, programs, etc., and another considering the future changes expected; and finally a reference scenario,
that is a description of how and why the organization would destroy itself if the assumptions made were true.

**Ends planning:** On the second phase it is important to determine what the organization would ideally like to be if it could be whatever it wanted, determining the gaps between this ideal and the organization projected in the reference scenario that resulted from the previous phase. The remainder of the planning process is directed at removing or reducing these gaps taken collectively and interactively.

**Means planning:** Next the objective is to determine what should be done to remove or reduce the gaps identified in ends planning; that is, selecting or inventing the courses of action, practices, projects, programs, and policies to be implemented in pursuing the organization’s idealized redesign.

**Resource planning:** Here, three things have to be considered: how much of each type of resource (facilities, materials, personnel, money and information) will be required, when and where, in order to implement the means selected; how much of each type of resource will be available at the desired times and places if there are no planning interventions; and what to do about the shortages or excesses that are identified.

**Design of implementation:** This is the most traditional planning phase, determining who is to do what, when and where.

**Design of controls:** In this last phase the monitorization is the key. How to monitor implemented planning decisions to determine whether they are producing expected results and, if not, determining what corrective action should be taken; and how to adjust for failures to meet the objectives and schedules will be the focus of the attention.

These phases, although usually initiated in this order, may be carried out in different sequences, according the specifications of the project in hand. Because they are strongly interdependent, they usually take place simultaneously and interactively. In this methodology, no phase is ever definitely completed. All outputs are subject to subsequent revision and may be used to introduce changes in all the phases that are occurring or the actions that are being implemented. That is why it is called interactive planning.

**Picture 8:** Inskeep’s tourism system
The tourism sector is extremely complex, as we can see from the previous picture taken from Inskeep (1991). It involves different activities and some particular characteristics (products/services intangibility, big intensity and dependence of information worldwide tourists increasing standards for quality of services/products and information and the need for sustainability). This complexity is what makes the interactive approach one of the best techniques to address development issues in tourist destinations.

5 SOME CASES IN PORTUGAL

Over the decades, there have been different forms of intervention in tourism in Portugal. Before the territorial management system had been implemented, there were almost no restriction to land use and that brought several problems. In the late 1960’s, for instance, there was a big tourism development in Troia, a small village located 50 Km south of Lisbon. This is a beach area, located in the estuary of a river and, as such, is a very sensitive location, environmentally speaking. As it was a very beautiful destination, several companies decided to invest there and started building hotels, restaurants, pubs and all kinds of services for tourists. The number of tourist quickly grew and, as the infrastructures weren’t planned for that amount of people, severe impacts started to show in few years. Companies and public authorities tried to mend what they could and keep the destination attractive enough for tourists, but they started fleeing to other destinations. The negative impacts continued so the number of tourists continued dropping, causing companies to go bankrupt. Eventually it all ended in the early 1980s. After 2000 most of the, by then, abandoned infrastructures were demolished and in 2006 a new project for that destination started. This time, all the attention was given to sustainable development, to try and avoid a similar failure.

Another example comes from the, now internationally famous, Algarve, located in the southern coast of Portugal. Tourism development started there around the 1970s, with British tourists attracting the investment of hotel chains. It was also a sun and see destination and, as it was a larger area, construction was more dispersed, so the impact took a bit longer to show. But in the middle 1980s several problems started, namely traffic problems and pollution during high season, inflation, etc. Over the years the authorities tried to cope with the problems, dealing with them as they came along, but this eventually proved inefficient. A new philosophy was adopted in the 1990s, and the new ideas of sustainable development were applied. This lead to the demolishing of some constructions, shutting down of some companies and relocation to better suited areas, which, eventually, controlled the major problems of the destination and allowed it to continue growing at a steadily pace.

The last example comes from the Alentejo, an interior region considered one of the poorest in the European Union. This is a very big area, located east of Lisbon and bordering Spain. Traditionally associated with agricultural activities, one of the biggest dams in Europe was built there in 2005. The Alquevá dam gave origin to the biggest artificial lake in Europe and, although agriculture, water supply to the population and electricity production were the main objective of the dam, the tourism develop possibilities derived from the lake couldn’t be ignored. By that time the modern territorial management system was already implemented in Portugal, s everything was carefully studied and planned, to prevent the problems that have occurred before. This inclusively lead to criticisms that things were taking to long to be done and the benefits to the population weren’t showing up. The fact is that the investment in the region is still occurring and will continue until 2012-2015. All has been done with very controlled planning and development, and considering alternative and sustainable tourism forms (not mass tourism). Until now the results have been few, in terms of economic benefits for the population, but
quality of living has increased with the development of infrastructures and the creation of some jobs. Most of the benefits are expected to only reveal themselves after the biggest investments of 2012. All of this shows that Portugal has learned from its previous mistakes and now takes tourism planning and development in a responsible and sustainable way.

CONCLUSION

As in many countries all over the world, spatial planning has been practiced for centuries and so we can say that we have centuries of territorial intervention. In Portugal, the major tradition on spatial planning comes from the agricultural and forest area and only by the end of the XX century a true territorial management system emerged, with the integration of many legal figures that already existed, to ensure a proper use of soil, either on rural or on urban areas. Nevertheless, it has been argued that this law came a little too late to meet the territorial trends and dynamics already established for several decades and with serious consequences at the regional level, with situations difficult to deal with and, in many cases, irreversible. However, major problems are consciously identified and the coordination of existing plans, through the spatial and urban planning policy considering the European framework, is based on a long-term strategy that will allow a more balanced regional development and the improvement of living conditions for populations.

Tourism appears to be an important economic variable in this process, due to a set of constraints that have favored its development in Portugal. In this case, as with other instruments of regional development, one has to be careful because not all regions can base their development on tourism and, therefore, one must analyze each case and understand which role the sector can play on the region. Sometimes it can be the engine of development but in others cases it may only play a more complementary role.

The dynamic and complex nature of tourism activities leads to constant changes, but there has been a regular request for sustainable conditions and activities by a growing number of tourists. The new tourist has incorporated its environmental conscience in its travel criteria. Therefore, sustainable tourism strategies have to be a real alternative for regions that have economical, social and environmental conditions to develop quality tourism. In the long run, these will bring broader opportunities and better benefits for local touristic enterprising, as well as for local residents.

The cases used as an example show the importance that tourism has had in Portuguese regions’ development. They also show that putting the sustainable development principles in practice can effectively bring advantages to everyone involved.

REFERENCES


CASE STUDY IN INTELLECTUAL CAPITAL AND TERRITORIAL DEVELOPMENT: ANALYSING PORTUGUESE LOCAL GOVERNMENTS WEB PAGES

Sandra Bailoa, Paulo Resende da Silva
School of Technology and Management, Polytechnic Institute of Beja, Portugal, University of Évora
sandra.bailoa@estig.ipbeja.pt, pfs@uevora.pt

ABSTRACT

Multiple authors argue that the digital infrastructure of municipalities and regions, such as websites, have an important role to play in local and regional development since they enable the access and sharing of information, knowledge and the provision of certain services. Functioning as an entrance way to a territory, the websites provide important contributions in the knowledge and intellectual capital management activities. In this sense, an evaluation of websites is a core activity for the updating of content and delivery of services, contributing to their best management in the context of e-government. However, there are a limited number of studies on evaluation of websites from the perspective of intellectual capital, although the importance of this asset, either in business or public sector, and also to the development of territories is recognized. So, this study intend to show the importance of intellectual capital in the public sector, more specifically on local government, by assessing the intellectual capital of its web pages by implementing a model of intellectual capital for the public sector.

KEY WORDS


INTRODUCTION

If in the of the past the economy was dominated by industrial machinery and the use of physical and tangible production factors, in present day, we have the so-called knowledge economy, which have in intangibles such as information, knowledge and intellectual capital, the main production factors. As a result intellectual capital has become an important source of wealth, for enterprises in the private sector, to public sector organizations and territories.

These transformations, provided by the widespread application of information and communication technology (ICT) in the diverse domains of society, particularly the Internet, have allowed new concepts of relationship between economic agents (e-government, e-bussiness, etc.). This study presents the general purpose of trying to contribute to understanding the way, organizations within the public sector are managing the challenges brought about by Information society and knowledge economy and in particular, how local governments are taking advantage of ICT and digital infrastructure for the modernization of its services and achieving its objectives.

It is intended to cross fields of knowledge as intellectual capital and territorial development with the use and diffusion of ICT in public administration, especially e-government. Thus, this study consists of an
assessment of intellectual capital through analysing the web pages of city councils, by applying an intellectual capital model to the public sector. The most appropriate model for the present study is the Queiroz model, which makes it possible to demonstrate how the ICT can be used to incorporate intellectual capital indicators into the public sector.

1 STATE OF THE ART IN INTELLECTUAL CAPITAL

The knowledge-based economy brought a transition from an economy based on tangible goods, to an economy based on intangible assets and meant the origin of research areas such as intellectual capital.

According to Queiroz et al. (2005: 213) early work in the modern development of Intellectual capital were made by Brooking (1996), Sveiby (1997), Edvinsson and Malone (1997) and Stewart (1998) producing scientific texts and studies with practical application, especially in business. Despite these research studies, according to Serrano and Fialho (2003: 112) the concept of intellectual capital was created in 1969 by the economist John Kenneth Galbraith. For Choo and Bontis (2002: 15), research on intellectual capital has taken different approaches in different research areas such as accounting, strategic management, human resources, and finance. Thus, the concept has many definitions and interpretations. However, these have been converging and have in common the fact that the Intellectual Capital is a source of sustained competitive advantage, and that the value of organizations and value creation go hand associated with the use of Intellectual Capital.

It is usual to define intellectual capital as the set of intangible assets (knowledge, information, creativity and competences of workers, branded products and services, customer satisfaction, marketing, quality, among others) able to generate value for organizations and is usually classified as human capital, structural capital and relational capital. Human capital includes the knowledge, qualifications, collective capacities, skills, experiences, creativity, innovation capability, motivation and professional training of an organisation employees. Structural capital includes organisational processes and procedures, hardware, software and data bases, organisational structure, trade-marls, patents and intellectual property rights. Relational capital includes the value of the company’s relationship with clients, suppliers, investors and distribution channels.

Most models that were developed to measure Intellectual Capital appeared in the business area. For Malhotra (2003: 6-12) among the best known are the following examples: Balanced Scorecard (Kaplan and Norton, 1992); Technology Broker (Brooking, 1996); Skandia Navigator (Edvinsson and Malone, 1997); The Intangible Assets Monitor (Sveiby, 1997). However, many authors argue that the intellectual capital also became important in the success of public sector organizations and to the development of territories.

2 INTELLECTUAL CAPITAL AND TERRITORIAL DEVELOPMENT

In recent years it has been an acceleration in the emergence of new theoretical approaches that take place in the field of knowledge economy applied to the territory. It appeared concepts that allowed the application of knowledge, intellectual capital and ICT to the territory, showing that they have a role to play in territories management, making them more competitive. Concepts as knowledge cities, knowledge territory, learning regions, territorial production systems, global cities, digital cities, intelligent cities and regions, among others developed from the leadership of knowledge, ICT,
innovation and collective learning, as factors defining the creation of competitive advantage for territories.

Cities and regions are responding to diverse challenges brought by knowledge economy as the increased competition for attracting companies based on new technologies, transforming their areas into knowledge territories. The concept of knowledge territory means the concentration of assets and economic activities based on knowledge, institutional environments that stimulate innovation and modern technological infra-structures that are suitable for the inter-connection of individuals, organisations and local or regional areas (Serrano, Gonçalves, and Neto, 2005).

The importance of intellectual capital to the territories seems to be a reality. This relevance derives from the fact that in the future this will be the most important factor for economic and social development, and the territories that have a greater allocation of such capital will be those who can obtain more progress (Sánchez Medina, 2004: 12). Bontis (2004: 14) and Malhotra (2003: 4) refer the need to measure the knowledge assets at national level since these measures can help governments to better manage its intangible resources and the success of their economies. "The intellectual capital of a nation includes the hidden values in individuals, companies, institutions, communities and regions that are current and potential sources for wealth creation." (Bontis, 2004: 14) Andriessen and Stam (2004: 11) also provide a definition of intellectual capital of nations: "... we define the IC of nations as all intangible resources available for a country or region, which gives it a competitive advantage, and which in combination are able to produce future benefits."

As with tangible assets, governments need to do a proper management of intangible ones and must assume their responsibilities in this area. The central and local governments can encourage and enhance the development of intellectual capital, for example, by creating policies to promote knowledge sharing, recognizing intellectual property, promoting a flexible labour market, facilitating business access to capital, developing infrastructures with quality, promoting country education and culture (Sanchez Medina, 2004: 13). Sánchez Medina (2004: 14) argues that: "The intellectual capital of a territory is the set of assets that are available to the territory and, despite not having a physical or financial nature, generate or can generate a sustainable development, either alone or in relationship with others."

If we move towards a society based on knowledge, the availability of intellectual capital is essential for progress of the territories and to improve the living standards of people since this is achieved more by intangible assets and intellectual capital. Today, it is useful to understand the political, sociological and behavioral dimensions of information and knowledge in terms of their use and ownership to create value. So if intellectual capital of a territory is the fuel of future growth, we need to know which are the consequences on future performance of countries and thus, it becomes essential to have a system of measurement that describes the intellectual capital of territories, to better manage and develop it.

Viedma (2003: 4) point out three studies of evaluating the intellectual capital of countries: Sweden (Rembe, 1999), Israel (Pasha, 1999) and the Arab Region (Bontis, 2002). All these studies used the Skandia Navigator model adapted to the countries. In those cases it was not a major difficulty but many models of Intellectual capital have problems in the immediate application to the public sector or to the territories, since they were designed especially for private companies and therefore they centre the definition of intellectual capital on the difference between the market value of a company and its book value, which is difficult to apply to the public sector, especially if the organizations concerned are not companies. Thus, some authors have developed models to evaluate the Intellectual Capital in the public sector including: The Model of intellectual capital for the public sector of Queiroz, Cinca and Callen (2005) and the Model of intellectual capital for the public sector of Queiroz (2003). Other authors have
developed models to assess intellectual capital at territorial level with examples of implementation at national, regional or local level, in order to check its contribution to the levels of productivity and development of the territory in question: *The Intellectual Capital Monitor* (Andriessen and Stam, 2004), which was applied by these authors in evaluating the intellectual capital of European Union countries, and the *CICBS: Cities' Intellectual Capital* Benchmarking System (Viedma, 2003), which was applied to the Spanish city of Mataró.

3 INTELLECTUAL CAPITAL, LOCAL GOVERNMENTS AND WEB PAGES

Local authorities often represent one of the main driving forces of local and regional economy and their responsibilities and capacities are related with the satisfaction of local community needs, they play a fundamental role in creating a favourable socio-economic climate able to attract and promote the creation and development of businesses. Thus, objectives of city councils are related to the socio-economic development, land management, public utilities, basic sanitation, education, culture, environment and sports.

Local governments are facing many challenges due to the constant change in today’s society, so they need to manage territory wisely and it is necessary to know how to select regional and local development models that allow a close relationship with citizens and organizations and promote the sharing of knowledge. It is in this context that intellectual capital emerges as an important tool in territory management and development. For local governments identification, assessment and management of intangible assets are of recognized importance and interest for improving decision making and management processes.

Although ideas underlying intellectual capital have emerged with regard to business, the public sector represents a very appropriate area for application of the concepts related to intangible assets, especially because intangibility seems to be more evident in this sector, whether with regard to its objectives (which are of a social nature such as national security, justice, health, social protection and education), or resources (above all human and information), and products (the majority are services, which are basically intangible). At the same time the rapid and continuous development of ICT makes possible to create new opportunities for modernizing public administration and new ways of governance. A good example in this process is e-government, the use of the internet is a powerful tool because local administration can use web pages for disseminating information, sharing knowledge and providing services and it is a possibility for greater proximity between the government and the citizens.

City councils websites contribute towards the process of change in the local administration, in terms of modernizing, rationalizing, integrating procedures and decreasing bureaucracy in services, providing increasingly better service to citizens and contributing towards the development of cities and regions. Within this context, where web pages have an increasingly important role, their management becomes extremely important. Therefore, assessment of their contents and usefulness is decisive in a better management.
4 STATE OF THE ART IN ASSESSMENT OF WEB PAGES WITH EMPHASIS ON INTELLECTUAL CAPITAL

There have been few intellectual capital studies and research on the evaluation and analysis of intellectual capital through web pages. In this context, Queiroz had an innovative role in applying the model he had developed for the assessment of intellectual capital in the public sector, to the assessment of the web pages of Spanish municipalities. The main objective of the study was to understand the outline of the information provided by Spanish municipalities through the Internet, in order to identify their intellectual capital elements (Queiroz, 2003). To do this, an on-line assessment of the web pages of the municipalities was carried out. This assessment was based on a set of variables, which were assigned according to the characteristics that define the intangible assets in the public sector, that is, it was based on his model for assessing intellectual capital.

One must also mention another study, realised by Mello, Cohen, and Oliveira (2003), under the direction of Queiroz. This study also assessed web pages, with the emphasis on intellectual capital, in this case the intellectual capital of the web pages of the Brazilian legislative assemblies. Also, in this case, a set of variables, classified according to the above mentioned model, was defined.

Terra and Gordon (2002: 123-129) developed a framework for the business area, a conceptual model for Corporate Knowledge Portals, which should be developed based on the main sources of wealth of a knowledge-based organization, which are the sources of intellectual capital and they are divided into: leadership capital, social capital, structural capital, human capital and Network Capital. For each source of intellectual capital some objectives of knowledge management are listed and the corresponding knowledge management tools (software applications) more appropriate are proposed.

In Portugal, " the resolution of the Council of Ministers no. 22/2001 (27th February), determines the periodic evaluation of the websites of direct and indirect government bodies with particular reference to measuring the degree of updating information provided, the clarity of the way it is presented, the research facility of information and compliance with legal provisions concerning the content and form of presentation of public bodies pages, including their accessibility by people with special needs. "(Santos, Oliveira and Amaral, 2003: 2) Under this resolution may refer to the following initiatives:

- External evaluation of websites of bodies of State Administration Direct and Indirect (UMIC / Accenture, 2003);


The criteria for evaluation of both initiatives were based on the "Assessment Method of Web Sites of the Direct and Indirect State Administration" (Santos, Oliveira and Amaral, 2003: 2).

All these studies shows that evaluating the content of websites is a core activity for their best management, which can include updating content and a better availability of services, in order to maximize the benefits inherent to the proper use of digital technologies and to the welfare of citizens. Local authorities face increasing challenges that come from getting to respond and resolve problems associated with these transformations in ways of working and living increasingly dependent on capital intellectual, knowledge and digital platforms, justifying further studies in this area.
5 METHODOLOGY OF INVESTIGATION: THE QUEIROZ MODEL

This study intends to demonstrate the importance of intellectual capital for public sector organisations and territory management, specifically for local governments through the assessment of City Councils web pages. City Councils are an important actor in creating knowledge territories, as they allow the inter-relationship among citizens, companies and social and political support structures. In this way, they can enable the creation of regions of excellence that attract wealth, dynamic and competitive companies and social well being. It is the responsibility of political decision makers, at diverse levels of state administration, to prepare the grounds for a modern and integrated territory management, based on high standards of service and quality management, where intellectual capital has an increasingly more important role.

Web pages, as a sort of entrance door of a municipality can be consider an instrument for the development of the region because they provide services, enable interactive communication, commercial transactions and are a great tool of information. All these aspects are considered intangible assets that constitute the intellectual capital existent in the web pages of the City Councils and, therefore, it is important to apply the intellectual capital models to their assessment, analysis and management.

In this study, the municipalities’ web pages were the instrument of analysis, which, from the intellectual capital point of view, constitute an important tool for the development of the region, in this case cities and municipalities.

The research methodology that was used consists in the application of the Queiroz model (Queiroz, 2003), which elaborated an intellectual capital model for the public sector with the following elements (Figure 1): human resources (human capital), internal processes (structural capital) and public relations (relational capital), quality and transparency. The model presents two main parts that call to mind a scale, where it is possible to see intellectual asset on one side and intellectual liability on the other. With regard to each of the above mentioned components of intellectual capital, the positive attitudes or actions can contribute towards the increase of intellectual capital and the negative ones can create intellectual liability. This idea of intellectual liability is used in the sense that in addition to highlighting the results of an efficient management, in the case where situations of inadequate management exist, these should also be shown, whether at the internal or at the external level.
The elements of intellectual capital encounter three situations shown by the three dotted lines, which represent:

- Intensity of intellectual capital, which indicates a condition of excellence;
- Inertia, which represents conformity or mediocrity;
- Inadequacy, which represents the situation in which public services do not meet the needs of the population in a satisfactory manner.

A scale of -100 to +100 is used, in which zero represents the situation of inertia, the negative numbers represent an inadequate intellectual capital management and the positive numbers a good management, and +100 represents maximum application of knowledge management.

The methodology used in the present study was based on the methodology of application of the Queiroz model used by Mello, Cohen, and Oliveira, (2003) in their study about the assessment of intellectual capital of the web pages of the Brazilian legislative assemblies.

A questionnaire was prepared to verify the intangible information and services assets, in each category of the Queiroz model, whose presence in a City Council’s website were considered essential. Variables were defined for each category of intellectual capital included on the questionnaire, which was applied on-line to the web pages.

The constant quality element of the Queiroz model was not considered, because this element had already been studied by Santos, Amaral and Rodrigues (2005) – Assessment of the presence of Portuguese City Councils on the internet in 2003, through the Qualitative Assessment Grid of the websites of Direct and Indirect State Administration.

The practicality of the web pages was not analysed, therefore elements such as the structuring of the information, navigability and aesthetics were not assessed. However, basic navigation aspects necessary...
for accessing the information under study, such as the existence of a site map and search methods, among others, were considered.

The questionnaire, to assess the intellectual capital of the City Council web pages, had 56 questions. Each question had a certain weight proportional to its relevance to the asset analysed in the research:

- 0.00 – when there was no information about the asset in question;
- 1.00 – Important;
- 2.00 – Very Important;
- 2.50 – Most Important.

The weight assigned to all 56 questions made a total of 80 points, which were distributed in the following manner:

- Human Capital = 13 points
- Structural Capital = 13 points
- Relational Capital = 39 points
- Transparency = 15 points

The fact that relational capital was the element of the model with the most points and the most questions is justified by the fact that it was the one with the greatest importance or use for citizens, when considering the daily use of the City Councils’ web pages, and therefore it is the element with the most assets to be analysed.

The web page of a municipality is used, above all, to facilitate, stimulate or otherwise improve the interaction of citizens and other institutions with City Councils, because of which the relational element is predominant.

Next is transparency, which comes with an added value in this model, a matter that is increasingly more fundamental in the modernisation of public management. This makes it possible to inform citizens about the government’s undertakings, allowing greater control over public management.

The score obtained by each City Council corresponds to the ratio of the total points obtained divided by the total points possible.

\[
N = \frac{(PO \times 100)}{PP}
\]

N = Score
PO = Total points obtained
PP = Total points possible

6 SAMPLE

The chosen sample for applying this methodology consisted of a set of 27 City Councils, with the best applications as revealed in the above mentioned study of Santos, Amaral and Rodrigues (2005), on Assessment of the Presence of Portuguese City Councils on the Internet. As studying all the City Councils would have greatly increased the scope of the study, it was decided to select those with the highest scores in the above mentioned study. The model establishes four levels of maturity and is based on the type of contents that were made available through the web for citizens and businesses by state administration. Level 4 represents the lowest and level 1 the highest degree of maturity. The results of the best 10 applications were presented for each of these levels, with the exception of the last, level 1,
where no City Council was found. Since there were 3 City Councils that had the best applications in more than one level, the size of the sample was reduced from a total of 30 City Councils to 27.

7 RESULTS

The data was collected between February and March of 2006, with direct application, through direct observation of the web pages of the municipalities. The following results, presented in table 1 and graph 1, were obtained.

Table 1: General ranking of the intellectual capital of the City Councils’ web pages

<table>
<thead>
<tr>
<th>Ranking</th>
<th>City Hall</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Lisbon</td>
<td>81.21</td>
</tr>
<tr>
<td>2nd</td>
<td>Porto</td>
<td>74.20</td>
</tr>
<tr>
<td>3rd</td>
<td>Covilhã</td>
<td>72.91</td>
</tr>
<tr>
<td>4th</td>
<td>Felgueiras</td>
<td>70.47</td>
</tr>
<tr>
<td>5th</td>
<td>Loulé</td>
<td>67.85</td>
</tr>
<tr>
<td>6th</td>
<td>Sines</td>
<td>67.63</td>
</tr>
<tr>
<td>7th</td>
<td>Faro</td>
<td>67.25</td>
</tr>
<tr>
<td>8th</td>
<td>Marinha Grande</td>
<td>66.09</td>
</tr>
<tr>
<td>9th</td>
<td>Guimarães</td>
<td>65.25</td>
</tr>
<tr>
<td>10th</td>
<td>Montijo</td>
<td>63.59</td>
</tr>
<tr>
<td>11th</td>
<td>Óbidos</td>
<td>60.92</td>
</tr>
<tr>
<td>12th</td>
<td>Seixal</td>
<td>60.47</td>
</tr>
<tr>
<td>13th</td>
<td>Leiria</td>
<td>59.50</td>
</tr>
<tr>
<td>14th</td>
<td>Grândola</td>
<td>59.25</td>
</tr>
<tr>
<td>15th</td>
<td>Ponta Delgada</td>
<td>58.69</td>
</tr>
<tr>
<td>16th</td>
<td>Cantanhede</td>
<td>54.91</td>
</tr>
<tr>
<td>17th</td>
<td>Moita</td>
<td>54.25</td>
</tr>
<tr>
<td>18th</td>
<td>Águeda</td>
<td>53.97</td>
</tr>
<tr>
<td>19th</td>
<td>Manteigas</td>
<td>52.38</td>
</tr>
<tr>
<td>20th</td>
<td>Palmela</td>
<td>49.72</td>
</tr>
<tr>
<td>21st</td>
<td>Évora</td>
<td>49.63</td>
</tr>
<tr>
<td>22nd</td>
<td>Estarreja</td>
<td>48.81</td>
</tr>
<tr>
<td>23rd</td>
<td>Funchal</td>
<td>48.38</td>
</tr>
<tr>
<td>24th</td>
<td>Chaves</td>
<td>47.84</td>
</tr>
<tr>
<td>25th</td>
<td>Arouca</td>
<td>39.50</td>
</tr>
<tr>
<td>26th</td>
<td>Lamego</td>
<td>39.44</td>
</tr>
<tr>
<td>27th</td>
<td>Póvoa de Lanhoso</td>
<td>32.51</td>
</tr>
</tbody>
</table>
The obtained results make it possible to see that Lisbon had the best score and Póvoa do Lanhoso the worst. The average score in IC is 58.02 with 55.56% of the City Councils (15) having obtained a higher score. The standard deviation was 11.52.

**Graph 1: The scores of intellectual capital of the City Councils’ web pages**

The second column of table 2 shows the classification obtained by the same City Councils in the study of Santos, Amaral and Rodrigues (2005), which assessed the maturity and quality of the presence of the City Councils on the internet. This table compares the position of the web pages in the two studies.

In comparing the classifications, there are significant differences that must be pointed out. We can see that, in the Santos, Amaral and Rodrigues (2005) study, Loulé appears in the 1st place, with the best score, indicating that it is the City Council whose web page presents the highest degree of maturity and the greatest quality, whereas in the present study Loulé appears only in the 5th place in the general ranking of intellectual capital. Lisbon is almost in the reverse situation, as it holds the 1st place in the intellectual capital ranking and the 4th place in the 2003 study.

The situation of Sines is still more significant, as in this study it is classified in the 6th place and in the above mentioned study in the 27th place, in the comparative ranking (96th in the general ranking). The City Councils of Felgueiras, Faro and Marinha Grande, also obtained good scores (4th, 7th and 8th places respectively) with lower classifications in the former study (11th/25th, 16th/35th and 20th/40th places respectively).
Table 2: Comparison between the Santos, Amaral and Rodrigues (2003) ranking and the ranking of the present study

<table>
<thead>
<tr>
<th>City Hall</th>
<th>Classification obtained in the Santos, Amaral</th>
<th>Position according to the analysis¹</th>
<th>Classification obtained in the present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loulé</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Palmela</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>20&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Covilhã</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Lisbon</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td>Grândola</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>14&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Chaves</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>24&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Águeda</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>18&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Porto</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Cantanhede</td>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>16&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Ponta Delgada</td>
<td>24&lt;sup&gt;th&lt;/sup&gt;</td>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>15&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Felgueiras</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Guimarães</td>
<td>26&lt;sup&gt;th&lt;/sup&gt;</td>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Évora</td>
<td>29&lt;sup&gt;th&lt;/sup&gt;</td>
<td>13&lt;sup&gt;th&lt;/sup&gt;</td>
<td>21&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td>Lamego</td>
<td>30&lt;sup&gt;th&lt;/sup&gt;</td>
<td>14&lt;sup&gt;th&lt;/sup&gt;</td>
<td>26&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Leiria</td>
<td>34&lt;sup&gt;th&lt;/sup&gt;</td>
<td>15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>13&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Faro</td>
<td>35&lt;sup&gt;th&lt;/sup&gt;</td>
<td>16&lt;sup&gt;th&lt;/sup&gt;</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Estarreja</td>
<td>36&lt;sup&gt;th&lt;/sup&gt;</td>
<td>17&lt;sup&gt;th&lt;/sup&gt;</td>
<td>22&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Arouca</td>
<td>38&lt;sup&gt;th&lt;/sup&gt;</td>
<td>18&lt;sup&gt;th&lt;/sup&gt;</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Moita</td>
<td>39&lt;sup&gt;th&lt;/sup&gt;</td>
<td>19&lt;sup&gt;th&lt;/sup&gt;</td>
<td>17&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Marinha Grande</td>
<td>40&lt;sup&gt;th&lt;/sup&gt;</td>
<td>20&lt;sup&gt;th&lt;/sup&gt;</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Funchal</td>
<td>41&lt;sup&gt;st&lt;/sup&gt;</td>
<td>21&lt;sup&gt;st&lt;/sup&gt;</td>
<td>23&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td>Montijo</td>
<td>42&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>22&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Manteigas</td>
<td>45&lt;sup&gt;th&lt;/sup&gt;</td>
<td>23&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>19&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Póvoa de Lanhoso</td>
<td>47&lt;sup&gt;th&lt;/sup&gt;</td>
<td>24&lt;sup&gt;th&lt;/sup&gt;</td>
<td>27&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Óbidos</td>
<td>52&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Seixal</td>
<td>94&lt;sup&gt;th&lt;/sup&gt;</td>
<td>26&lt;sup&gt;th&lt;/sup&gt;</td>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sines</td>
<td>96&lt;sup&gt;th&lt;/sup&gt;</td>
<td>27&lt;sup&gt;th&lt;/sup&gt;</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

There are other situations, such as Palmela, which has a high maturity level that makes it possible for it to occupy the 2<sup>nd</sup> place in the Santos, Amaral and Rodrigues study (2005) while its score is not very high in the intellectual ranking and it is in the 20<sup>th</sup> place. This situation also applies to Grândola, Chaves, Águeda and Cantanhede, which occupy significant positions in the above mentioned study (5<sup>th</sup>/5<sup>th</sup>, 6<sup>th</sup>/7<sup>th</sup>, 7<sup>th</sup>/8<sup>th</sup> and 9<sup>th</sup>/10<sup>th</sup> respectively) and obtained poorer classifications in the present study (14<sup>th</sup>, 24<sup>th</sup>, 18<sup>th</sup> and 16<sup>th</sup> respectively).

The situation of Covilhã, which has a good classification, occupying the 3<sup>rd</sup> position in both studies, and therefore has a high level of maturity and intellectual capital, is also noteworthy.

Comparison of the results of one study with those of the other seems to show that having a website with a high level of maturity and quality does not always indicate the availability of lots of...

---

¹ This column refers to the ordering of the 27 City Halls according to the web page points obtained in the Santos, Amaral and Rodrigues (2005) study, which was aimed at making a comparative analysis between the two studies.
intellectual capital assets and vice-versa, or that is, having a good score in intellectual capital does not mean that the website has a high level of maturity and quality.

Table 3: Results of intellectual capital by level of maturity

<table>
<thead>
<tr>
<th>Level of Maturity</th>
<th>City Council</th>
<th>Position in Santos, Amaral and Rodrigues</th>
<th>Position in general IC ranking</th>
<th>Score in IC CI Average per level of maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 4: Availability of Information</td>
<td>Évora</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>21&lt;sup&gt;st&lt;/sup&gt;</td>
<td>49.63</td>
</tr>
<tr>
<td></td>
<td>Seixal</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>60.47</td>
</tr>
<tr>
<td></td>
<td>Marinha Grande</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>66.09</td>
</tr>
<tr>
<td></td>
<td>Estarreja</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>22&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>48.81</td>
</tr>
<tr>
<td></td>
<td>Manteigas</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>19&lt;sup&gt;th&lt;/sup&gt;</td>
<td>52.38</td>
</tr>
<tr>
<td></td>
<td>Póvoa de Lanhoso</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>27&lt;sup&gt;th&lt;/sup&gt;</td>
<td>32.51</td>
</tr>
<tr>
<td></td>
<td>Lamego</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>26&lt;sup&gt;th&lt;/sup&gt;</td>
<td>39.44</td>
</tr>
<tr>
<td></td>
<td>Sines</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>67.63</td>
</tr>
<tr>
<td></td>
<td>Cantanhede</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>16&lt;sup&gt;th&lt;/sup&gt;</td>
<td>54.91</td>
</tr>
<tr>
<td></td>
<td>Ponta Delgada</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>58.69</td>
</tr>
</tbody>
</table>

| Level 3: Availability of forms for download | Porto | 1<sup>st</sup> | 2<sup>nd</sup> | 74.20 |
| | Leiria | 2<sup>nd</sup> | 13<sup>th</sup> | 59.50 |
| | Faro | 3<sup>rd</sup> | 7<sup>th</sup> | 67.25 |
| | Arouca | 4<sup>th</sup> | 25<sup>th</sup> | 39.50 |
| | Moita | 5<sup>th</sup> | 17<sup>th</sup> | 54.25 |
| | Óbidos | 6<sup>th</sup> | 11<sup>th</sup> | 60.92 |
| | Cantanhede | 7<sup>th</sup> | 16<sup>th</sup> | 54.91 |
| | Funchal | 8<sup>th</sup> | 23<sup>rd</sup> | 48.38 |
| | Montijo | 9<sup>th</sup> | 10<sup>th</sup> | 63.59 |
| | Palmela | 10<sup>th</sup> | 20<sup>th</sup> | 49.72 |

| Level 2: On-line submission of forms and process status | Covilhã | 1<sup>st</sup> | 3<sup>rd</sup> | 72.91 |
| | Loulé | 2<sup>nd</sup> | 5<sup>th</sup> | 67.85 |
| | Felgueiras | 3<sup>rd</sup> | 4<sup>th</sup> | 70.47 |
| | Agueda | 4<sup>th</sup> | 18<sup>th</sup> | 53.97 |
| | Chaves | 4<sup>th</sup> | 24<sup>th</sup> | 47.84 |
| | Grândola | 4<sup>th</sup> | 14<sup>th</sup> | 59.25 |
| | Guimarães | 4<sup>th</sup> | 9<sup>th</sup> | 65.25 |
| | Lisbon | 4<sup>th</sup> | 1<sup>st</sup> | 81.21 |
| | Palmela | 4<sup>th</sup> | 20<sup>th</sup> | 49.72 |
| | Ponta Delgada | 4<sup>th</sup> | 15<sup>th</sup> | 58.69 |

The study of Santos, Amaral and Rodrigues (2005) was carried out based on 4 levels of maturity. Table 3 shows an analysis of these levels, which were the basis for selection of the sample. It can be seen that there is no direct relationship between the scores obtained in one study and the other, that is, a good

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2 In 2003 when this study was carried out, no website was found at level 1, the maximum level of maturity considered in the model, which refers to on-line service transactions.
score at a specific level of maturity does not always imply a good score in intellectual capital. Through analysis of the average value at each level of maturity, it can be seen that as the level of maturity increases and the relationship between the entity and citizens becomes more coherent, the average intellectual capital score increases. Although there is no direct relationship in comparing the obtained scores in the two studies, the fact that the sample was chosen based on the 10 best applications at each level seems to have some influence here. It is noted that the Councils with the best ranking in intellectual capital are concentrated at level 2.

Table 4 shows the ranking obtained through grouping the intellectual capital scores by the classes used in the Santos, Amaral and Rodrigues (2005) study, according to the number of voters.

**Table 4: Results of intellectual capital according to number of voters**

<table>
<thead>
<tr>
<th>Class according to Number of Voters</th>
<th>City Council</th>
<th>Number of voters</th>
<th>Score</th>
<th>Position in General IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A – More than 100001 voters</td>
<td>Lisbon</td>
<td>566,162</td>
<td>81.21</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Porto</td>
<td>245,797</td>
<td>74.20</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Guimarães</td>
<td>124,764</td>
<td>65.25</td>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Seixal</td>
<td>111,842</td>
<td>60.47</td>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Class B – 50001 to 100000 voters</td>
<td>Funchal</td>
<td>96,634</td>
<td>48.38</td>
<td>23&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Leiria</td>
<td>93,894</td>
<td>59.50</td>
<td>13&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Moita</td>
<td>56,322</td>
<td>54.25</td>
<td>17&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Ponta Delgada</td>
<td>50,482</td>
<td>58.69</td>
<td>15&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Class C – 10001 to 50000 voters</td>
<td>Covilhã</td>
<td>49,296</td>
<td>72.91</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Loulé</td>
<td>47,667</td>
<td>67.85</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Faro</td>
<td>47,592</td>
<td>67.25</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Évora</td>
<td>45,462</td>
<td>49.63</td>
<td>21&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Felgueiras</td>
<td>42,352</td>
<td>70.47</td>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Chaves</td>
<td>42,223</td>
<td>47.84</td>
<td>24&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Águeda</td>
<td>40,562</td>
<td>53.97</td>
<td>18&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Palmela</td>
<td>39,711</td>
<td>49.72</td>
<td>20&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Montijo</td>
<td>34,238</td>
<td>63.59</td>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Cantanhede</td>
<td>32,754</td>
<td>54.91</td>
<td>16&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Marinha Grande</td>
<td>29,698</td>
<td>66.09</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Lamego</td>
<td>25,604</td>
<td>39.44</td>
<td>26&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Estarreja</td>
<td>22,492</td>
<td>48.81</td>
<td>22&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Arouca</td>
<td>20,165</td>
<td>39.50</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Póvoa de Lanhoso</td>
<td>19,273</td>
<td>32.51</td>
<td>27&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Grândola</td>
<td>12,863</td>
<td>59.25</td>
<td>14&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Sines</td>
<td>10,922</td>
<td>67.63</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Class D – Up to 10000 voters</td>
<td>Óbidos</td>
<td>9,474</td>
<td>60.92</td>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Manteigas</td>
<td>3,548</td>
<td>52.38</td>
<td>19&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

In the Santos, Amaral and Rodrigues (2005) study, it was concluded that the maturity of the web pages increases with the size of the municipality. This study shows that the larger municipalities – Lisbon and Porto – are those that have the best intellectual capital scores. Despite the best places in intellectual capital being occupied by the larger municipalities, it is, however, a situation that does not seem to be generalised for the rest of the group, because r² = 0.15, which shows a weak co-relation between the number of voters of the City Council and the intellectual capital score. Covilhã, Felgueiras, Loulé e Sines
occupy good ranking positions and their dimension is quite smaller than that of Lisbon and Porto. The analysis of intellectual capital elements is represented in graphs 2, 3, 4 and 5, where it is possible to see the scores obtained by each website and those that are above average in each element.

**Graph 2: Human capital scores**

![Human Capital Graph](image)

**Graph 3: Structural capital scores**

![Structural Capital Graph](image)
Table 5 shows the best and the worst 5 applications in each intellectual capital element, as well as the general score for intellectual capital. It is also possible to see the average and the percentage of the web pages with above average scores.

We can see that Lisbon holds the lead in almost all the elements with the exception of the relational capital, where Covilhã is the municipality with the greatest number of intangible assets in this category. Póvoa de Lanhoso, almost always, has the worst scores, as well as Arouca, Lamego and Chaves, which seem to have the worst applications in almost all the elements.
### Table 5: The best and the worst intellectual capital applications

<table>
<thead>
<tr>
<th></th>
<th>Human C.</th>
<th>Structural C.</th>
<th>Relational C.</th>
<th>Transparency</th>
<th>Intellectual C.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best 5</strong></td>
<td>Lisbon</td>
<td>Lisbon</td>
<td>Covilhã</td>
<td>Lisbon</td>
<td>Lisbon</td>
</tr>
<tr>
<td></td>
<td>Porto</td>
<td>Montijo</td>
<td>Guimarães</td>
<td>Felgueiras</td>
<td>Felgueiras</td>
</tr>
<tr>
<td></td>
<td>Loulé</td>
<td>Loulé</td>
<td>Porto</td>
<td>Sines</td>
<td>Sines</td>
</tr>
<tr>
<td></td>
<td>Faro</td>
<td>Felgueiras</td>
<td>Lisbon</td>
<td>Leiria</td>
<td>Leiria</td>
</tr>
<tr>
<td></td>
<td>Felgueiras</td>
<td>M. Grande</td>
<td>Sines</td>
<td>Pta Delgada</td>
<td>Pta Delgada</td>
</tr>
<tr>
<td><strong>Worst 5</strong></td>
<td>Manteigas</td>
<td>Obidos</td>
<td>Arouca</td>
<td>Évora</td>
<td>Funchal</td>
</tr>
<tr>
<td></td>
<td>P. Lanhoso</td>
<td>Lamego</td>
<td>Chaves</td>
<td>Manteigas</td>
<td>Chaves</td>
</tr>
<tr>
<td></td>
<td>Arouca</td>
<td>Cantanhede</td>
<td>Funchal</td>
<td>Lamego</td>
<td>Arouca</td>
</tr>
<tr>
<td></td>
<td>Águeda</td>
<td>Arouca</td>
<td>Lamego</td>
<td>Arouca</td>
<td>P. Lanhoso</td>
</tr>
<tr>
<td></td>
<td>Chaves</td>
<td>Pta Delgada</td>
<td>P. Lanhoso</td>
<td></td>
<td>P. Lanhoso</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>63.10</td>
<td>58.40</td>
<td>56.48</td>
<td>57.30</td>
<td>58.02</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>40.74% of the web pages are above this value.</td>
<td>40.74% of the web pages are above this value.</td>
<td>62.96% of the web pages are above this value.</td>
<td>55.56% of the web pages are above this value.</td>
<td>55.56% of the web pages are above this value.</td>
</tr>
</tbody>
</table>

The best average was obtained in human capital, which has turned out to be the element with the most positive responses and therefore with the greatest presence in the web pages. The worst average was obtained in relational capital, which can demonstrate that the main function of a website as a communication channel is still not being fully used.

### CONCLUSIONS

In today’s economies, intellectual capital is of increasing importance in creating competitive advantages for organisations and regions. Cities and districts respond to ever increasing challenges, competing for assets and economic activities based on knowledge, institutional environments that stimulate innovation and modern technological infra-structures that are suitable for interaction of individuals with organisations.

Local authorities have to respond to and solve problems associated with these transformations in the ways we work and live and are increasingly dependent on intellectual capital. This constitutes a decisive element for the development of the region.

The local state administrations must take advantage of the potentialities inherent in the use of ICT to provide the best services to citizens, through *e-government*. The Internet is an important tool for state administration, as it makes it possible to have a bi-directional, transparent, direct and personalised relationship between citizens and institutions. Therefore, it is necessary to have an adequate management of the contents of the web pages and the services they provide.

Assessment of the City Councils’ web pages through the Queiroz model can be an instrumental analysis for arriving at the intellectual capital of a region and can constitute a basis for its appraisal.

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3 There are 6 web pages mentioned here because 3 web pages – those of Faro, Felgueiras and Montijo - had the same score and were in the 4th place.
The results obtained in this study demonstrate that the larger municipalities of Lisbon and Porto are those with the best intellectual capital scores, but other smaller municipalities, such as Covilhã, Felgueiras, Loulé, Sines, Faro and Marina Grande also obtained outstanding scores, showing concern for providing information and services to citizens and businesses. Although 55.56% of the City Councils obtained a score above the general average for intellectual capital, the worst scores show that there is still work that needs to be done in this field, if municipalities want to have a leading role in the promotion and development of regions and communities of excellence, taking greater advantage of ICT.

REFERENCES


COEFFICIENT OF FACILITIES AND ITS USE IN THE SOUTH BOHEMIAN REGION

Jiří Dušek
College of European and Regional Studies, dusek@vsers.cz

ABSTRACT
This contribution deals with an analysis of change of municipality facilities in the South Bohemian Region in the Czech Republic. The main objective of the contribution is to assess the importance of geographic location in the South Bohemian Region and to assess its impact on municipality facilities of individual towns, municipalities and the whole South Bohemian Region using an originally created database of towns and municipalities in the South Bohemian Region after the year 2001.

KEY WORDS
Coefficient of facilities – cooperation – municipality – regional development

INTRODUCTION
The objectives of regional politics are based on identification of main regional problems and on state economic policy. The objectives are specified for shorter time periods so that it is possible to check their fulfilment and assess the effectiveness of the tools used. An example of a specific objective can be the reduction of significant interregional differences within individual regions in employment, average income, gross domestic product (per capita) etc. An example of partial objectives is support of business activity in a region, improvements in infrastructure, improvements in ecological situation etc. (KOLEKTIV AUTORŮ, 2004).

Objectives for regional policies usually serve as a basis for the definition of tools for regional policies. A traditional example of basic state regional policy are investments in the area of technical facilities in regions. Tools for regional policy usually focus on the attraction of capital and business activities into a region, stimulation of internal development resources, additional settlement or stabilisation of population in a region (WOKOUN, 2008).

In the Czech Republic, support of regional development was first regulated by law in Law No. 248/2000 Coll. on the support of regional development. Both in the area of content and legislative form, the passing of this law creates a framework for the Czech regional policy. Basically, up until the year 2000 regional policy was based only on several government resolutions. The Czech Republic has thus joined a group of developed countries in which this area of public administration is regulated by law. Obviously, the law was of paramount importance for the execution of regional policy by relevant regional public administration authorities and at the same time created a legal framework for obtaining financial help from EU structural funds. With the passing of this law, the Czech Republic has significantly come closer to legislative framework for regional policy usual in the EU. Since the year 2000, the Czech regional policy has thus been focusing also on development of business activity and human resources, research and technological development, development of the tourist industry, improvement in regional
infrastructure, development of civil facilities, development of social and health services, as well as on provisions related to environmental protection (WOKOUN, 2003).

The development of a region as a long-term process of sustainable improvement depends on a well managed treatment of socioeconomic phenomena occurring in the region. The main features influencing the possibilities of regional development in the sense of active effort towards improvements listed above are economic indicators (budget possibilities and property base), human resources (representatives and employees in a region, citizens and entrepreneurs able to act as initiators and implementers of developmental activities), as well as a developmental “vision”, i.e. a formulation of a desirable state and objectives as a part of development policy. All this, together with a wider environment influencing the conditions of development, such as geographical location and accessibility of a region, town or municipality to communication systems, as well as local technical facilities (HOLEČEK, 2009).

1 MATERIAL & METHODS

The methodology of this contribution is in compliance with methods usually used in scientific research; it is based on the use of the latest theoretical knowledge gained from specialised literature, specialised research and studies, newspapers and materials published by individual participants in regional development. Also, the methodology is based on looking for and assessment of mutual relationships which contribute to the clarification of the problems solved and to a deduction and formulation of adequate conclusions which can be derived from such an analysis.

The objective of this contribution is an analysis of changes in civil facilities in individual towns and municipalities of the South Bohemian Region. The analyses were carried out using a so-called coefficient of civil facilities which is a synthetic indicator based on data provided by the Czech Statistical Office characterizing the level of civil facilities in individual municipalities. The coefficient is calculated as a sum of values (0 = no, 1 = yes) indicating the existence of a primary school, a health facility, a water main, a sewer with a water treatment plant and a gas connection in a given municipality. Counted as primary schools are facilities of primary education (so-called nine-year schools); counted as a health facility are separate doctor’s surgeries or detached workplaces, hospitals, specialised medical institutions or other medical facilities. Counted as a sewerage connected to a water treatment plant is piping which leads sewage away from individual buildings and into a water treatment plant. A water main is water piping which distributes water from a public water pipeline. A municipality is connected to gas when it is connected to a gas pipeline which supplies gas from a central source. Compared were data as of 31 December 2001 and 31 December 2007; more up-to-date data are not available.

2 RESULTS

The level of civil and technical facilities represents an integral part of the regional structure of a given area. The level of facilities varies substantially in individual towns and municipalities and is closely related to the number of residents – the bigger a municipality is the better its facilities.

The level of civil and technical facilities has undergone significant changes since the year 2000. To a large degree, this change has been driven by state subsidies oriented towards improving the environment. The creation, equipment and operation of individual facilities depends to a certain degree on available financial means of municipalities and operators of the facilities, the overall financial situation of a
region, the population structure, population density etc. The change in the level of technical and civil facilities between the years 2001-2007 (the existence of a primary school, a health facility, a water main, a sewer with a water treatment plant and a gas connection in a given municipality) can best be shown using a coefficient of facilities (CF).

The overall change in the coefficient of facilities in the South Bohemian Region between the years 2001-2007 is 0.21509. Mostly responsible for this change is change in the area of technical infrastructure (Δ CF gas connection +0.074, Δ CF sewerage +0.050). However, there is an apparent drop in the availability of health facilities in municipalities of the South Bohemian Region (Δ CF health facilities –0.013).

The biggest change in the coefficient of facilities is recorded in towns and municipalities with a distance shorter than 10 km from the seat of a municipality with extended competence (Δ +0.26), as well as in towns and municipalities with a distance longer than 20 km (Δ +0.20) and in towns and municipalities with a distance between 10-19.9 km (Δ +0.185) from the seat of a municipality with extended competence. The biggest changes in the level of facilities take place in the vicinity of administrative centres of municipalities with extended competence; changes in other parts around municipalities with extended competence can be considered as balanced.

Table 1: Average change in individual indicators in the coefficient of facilities in towns and municipalities of the South Bohemian Region between the years 2001-2007 in relation to distance from a municipality with extended competence

<table>
<thead>
<tr>
<th>Data</th>
<th>up to 10 km</th>
<th>10-19.9 km</th>
<th>more than 20 km</th>
</tr>
</thead>
<tbody>
<tr>
<td>change in primary schools (2001–2007)</td>
<td>0.104072</td>
<td>0.108014</td>
<td>0.095652</td>
</tr>
<tr>
<td>change in health facilities (2001–2007)</td>
<td>-0.013575</td>
<td>-0.024390</td>
<td>0.017391</td>
</tr>
<tr>
<td>change in water mains (2001–2007)</td>
<td>0.000000</td>
<td>0.013937</td>
<td>0.000000</td>
</tr>
<tr>
<td>change in sewerage (2001–2007)</td>
<td>0.108597</td>
<td>0.013937</td>
<td>0.026087</td>
</tr>
<tr>
<td>change in gas connection (2001–2007)</td>
<td>0.072398</td>
<td>0.073171</td>
<td>0.078261</td>
</tr>
<tr>
<td><strong>Celkem</strong></td>
<td><strong>0.262443</strong></td>
<td><strong>0.184669</strong></td>
<td><strong>0.200000</strong></td>
</tr>
</tbody>
</table>

*Source: own calculations*

Table 2: Average change in the coefficient of facilities in towns and municipalities of the South Bohemian Region between the years 2001-2007 in relation to the number inhabitants in a town/municipality

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.06</td>
<td>0.27</td>
<td>0.55</td>
<td>0.28</td>
<td>0.09</td>
<td>0.07</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.21</td>
<td>0.21</td>
<td>0.21</td>
<td>0.21</td>
<td>0.21</td>
</tr>
</tbody>
</table>
If we compare the change in the coefficient of facilities and its relation to the number of inhabitants, it is obvious that in most municipalities there will be no change in facilities. The most significant changes take place in municipalities with the size of between 500-999 inhabitants; changes here are almost 50% bigger than e.g. in municipalities with the size of between 200-499 or 1000-1999 inhabitants.

**Picture 9: Coefficient of facilities in the South Bohemian Region**

**CONCLUSION**

With the use of the coefficient of facilities, it is possible to precisely define “problem areas” of a region in terms of infrastructure and to categorize towns and municipalities of the South Bohemian Region. If we compare the change in selected indicators with a significant impact on the development of civil and technical facilities between the years 2001-2007, it is clear that there are tremendous differences between individual regions. The biggest changes in facilities took place in the region of the following municipalities with extended competence: Vimperk (Δ CF +0.57), Týn nad Vltavou (Δ CF +0.50) and Český Krumlov (Δ CF +0.45). It is hard to believe, though, that in the region of the Tábor municipality with extended competence there has been almost no change in the last 7 years (Δ CF 0.000000), even though the starting level of facilities was at a more or less the same level as in other regions. Almost identical is the situation in the Milevsko region (Δ CF +0.04). Naturally, everything is a question of finances. If we look at the structure of income of municipalities in the South Bohemian Region in the last few years, we can identify a drop in non-tax incomes between the years 2001-2008 which increases the dependence of municipalities on tax incomes. Whereas capital income remains stable at the level of 5–7 %, there is a negative phenomenon in the form of a fluctuation in received transfers which amounted to almost 20 %
between the years 2003–2005. There is also a decrease in investment activity of towns and municipalities (the share of capital expenditure in the overall expenditure) – the share was 35.7 % in 2001, 28.3 % in 2007 and only 28.16 % in 2008. It is necessary to spend a certain share of the total expenditure on development of municipality possession as a foundation for satisfaction of the needs of citizens. Generally speaking, the long-term average of capital expenditure is recommended to be about 20-30%. However, it is necessary to take into account the current facility infrastructure of a given municipality. Considering the current economic situation of the state, it is more than clear that the dependence of towns and municipalities on tax income will only increase and at the same time there will be a further drop in investment activity which will lead to a slowdown in improvements of civil and technical facilities in the region or even to their deterioration. One of the possible solutions would be e.g. better intermunicipal cooperation within local action groups, microregions etc. which would then have a positive effect on development in the region.

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Redakční rada:

Doc. Ing. Jan Sucháček, Ph.D. – předseda redakční rady
Působí na katedře regionální a environmentální ekonomiky EkF VŠB-TU v Ostravě. Zabývá se městskou a regionální ekonomikou, městským a regionálním rozvojem, městským a regionálním marketingem a managementem, příčinami a projevy regionálních disparit a prostorovými aspekty globalizace. Pravidelně se aktivně zúčastňuje mezinárodních konferencí. Předsedá domáce i v zahraničí. Publikuje v českých i zahraničních odborných časopisech a je členem řešitelských týmů v několika výzkumných projektech.

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Prof. Ing. Jiří Kern, CSc.

Ing. Jan Malinovský, Ph.D.

Prof. Ing. Karel Skokan, Ph.D.

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