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## The role of institutions in the knowledge transfer in the old industrial regions

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### Abstract

*The paper is focused on the role of the institutions in the regional knowledge dynamics from the theoretical perspective. The paper aimed to analyse the role of the institutions in the old industrial regions (OIR) with the focus on old industrial regions in the Central and Eastern Europe. The institutional capability could influence significantly the knowledge dynamics in the region. There exist some successful regions in the Europe with high developed institutional capability. On the other side there exist any forms of institutional lock in, which could limit the regional economic development especially in the less developed regions. The conclusion of the paper contains the main findings, how the institutions influence the knowledge flows in the old industrial regions. Particularly political lock ins, cognitive lock ins and functional lock ins hinder the necessary restructuring processes in old industrial regions. In the OIR from Central and Eastern Europe is presented less developed institutional thickness on the quantitative and qualitative level, too.*

**Key words:** institutions, knowledge transfer, networks, old industrial regions

**JEL Classification:** P30

### 1 Introduction

The institutional approach in the regional economy was deeply elaborated at the end of the 20<sup>th</sup> century. Institutions could play key role in the transformation processes at the national as well as regional level. Institutional environment, the amount and primarily the orientation of the institutions could create the scope for effective or non effective knowledge processes.

The objective of the presented paper was to analyze the role of the institutions in the knowledge transfer in the old industrial regions with the focus on old industrial regions in the Central and Eastern Europe.

This paper is result of the theoretical research made within first phase of the project “Regional dimensions of the knowledge economy (REDIPE)”. The REDIPE project focused on complex analysis of the specific dimensions (technology, economic, social and political) of the knowledge creation and transfer in selected four Slovak regions. Four Slovak universities (University of Economics in Bratislava, Technical University in Žilina, Technical university in Košice and Slovak University of Agriculture in Nitra) are involved in the project.

In the paper we would like to investigate follow research questions:

Which kind of institutions could influence the knowledge transfer at the regional level?

How are working institutions in old industrial regions, which are characterized by strong path dependency?

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Are there any differences between the institutional thickness in the old industrial regions in Western European countries and in Central and Eastern Europe?

## 2 Institutions in regional development in general

Institutions may appear as hard institutions (formal institutions, specific organizations) or soft institutions (rules, norms, values, conventions, preferences, expectations). Storper (1997) described the relation between convention and institutions in the learning economy as “double circularity”. “...formal public institutions, in creating or sustaining worlds of learning, must in effect create or sustain the conventions and relations of the latter. In turn, those formal public institutions can only assist in world-making if the people in both institutions – the learning production system and the formal public institution – are coordinated by conventions coherent with that project.” [1]

At the regional level could be characterized three dimensions of regional situation: regional hardware, software and mindware. The term “hardware” refers to the visible and tangible aspects of the regional economic structure. The institutions and the institutional thickness are related to “software” in the regional economic structure. “Mindware” is term, which is explaining the cultural identity and image of the region. It could be the way in which region is perceived from outside and the way that region perceive themselves inside. [2] These three dimensions are providing different ability to adapt the changes of knowledge economy.

Which institutions are working at the regional level? In last 20 – 30 years changed significantly the scope of the traditional institutions, which are involved in regional development issues: local government, research institutions, universities and other educational institutions, firms, financial institutions, interest groups e.g. Some authors mark temporary institutional situation at regional level as “New industry of regional development institutions”. [3]

In the countries of Western Europe “new” supporting institutions were established since 70<sup>th</sup> – 80<sup>th</sup> for example development agencies, business centers, technological incubators, consulting agencies. These regional development institutions behave in similar way as there is possible to formulate few trends [3], [4]: institutional isomorphism, decentralization, creating of public-private partnership, cooperative projects, clustering, *networking* etc.

Special scope for knowledge transfer could create the networking processes between institutions. “Networks serve as a locus for innovation, because they provide more timely access to external knowledge and resources...”[5] According to the results of the research focused on the knowledge transfer between research and diffusion networks in the framework of European Union regions, there could be observe differences in the role of network hubs (key actors within the networks) and network gatekeepers (organizations that link the research with the diffusion network) at the local and national level. Another difference could be clearly seen in the different type of regions (we will discuss it more in the next part of the paper). Diffusion networks were found to be considerably strengthened by the research networks. Research networks complement regional knowledge dissemination because they allow more organizations to be interconnected than would have been otherwise and they support knowledge exchange and broaden the diffusion of information within network. [6]

Indicators of Institutional Thickness related to the knowledge economy processes could be use in relation to the general indicators of institutional thickness [7] :

- Indicator of the number of regional institutions,
- Indicator of interaction between regional institutions,
- Indicator of the agenda (the objective – to develop regional knowledge processes)
- Indicator of domination and patterns of coalition (financial resources).

According to several authors ([4], [6], [8], [1]) from the theoretical point the institutional thickness could influence significantly the knowledge trajectories on the regional level. The practical studies show, that there exist some successful regions in the Europe with high developed institutional capability. On the other side there exist any forms of institutional lock in, which could limit the regional economic development especially in the less developed regions.

### 3 Institutional thickness in the old industrial regions

Old industrial regions (OIR) represent a type of problem area where the firms and research institutions are often oriented on traditional industries and technologies. In this regions learning and innovation activities have been insufficient and oriented on incremental and process innovation[9] Typical old industrial regions are located in Germany (Ruhr area), Austria (Styria), Great Britain (North east England) etc. Old industrial regions often have a highly specialized knowledge generation and diffusion system.[10] Many of the specific problems of the OIR are related to the path dependency and lock-ins.

Analyzing the adoption problems of old industrial regions more authors identified several kinds of institutional lock-ins, which could hamper the restructuring processes in these areas:

- political lock in (strong relationships between public and private key actors oriented to traditional industry) [11],
- functional lock in (rigid inter-firm relationships) [2], [12],
- cognitive lock in [8].

The presenting institutions including decision makers in OIR, which are connected with traditional industries could slow down industrial restructuring and hamper the development of regional indigenous potential. In this sense “the learning region concept” seems to be most focused on overcoming and avoiding political lock-ins in OIR. [11] The changes in this way are often difficult in mono-sectoral economies of OIR.

Institutional issues in OIR can lead to so-called “self-sustaining coalition” defined by Grabher (1993). In such a situation for example, large companies are unwilling to sell unused sites to local authorities for the attraction of inward investment, as they are afraid to lose qualified employees to competitors. [13]

Indicators to measure political lock-ins might be [11]: amount of subsidies spent to support the industry, the number of the lobbying organizations and their impact, the long-term stability of institutions involved in supporting the industry and the weak support of new industries. These four indicators were the only we found in the literature related to this topic. From this point of the view could be formulation of specific indicators related to different types of lock-ins in OIR interesting research area.

The cognitive „lock in“ could be explain in the terms of the ways in which people think of the labour market and their possibilities in it. For example in the case study from North East England are clear following specific features of cognitive lock-in [13]:

- Marked reluctance to commute. In the region exist some small, discrete and spatially bounded labour markets, rather than forming of integrated labour market.
- Continuing recruitment into traditional industries. “Sons following their fathers“.
- Weak enterpreneurial culture. People prefer to be employed rather than to become self-employed.

In the OIR there is no problem related to the number of the supporting institutions but their inability to coordinate together and to learn. “The inability to learn” [14] and to adapt the new technology trajectories are the main differences between OIR and the concept of learning region. Although there is providing relatively sufficient institutional thickness, there exist relatively weak connections between organization, which „create ideas“(research networks) and regional „market“networks (diffusion networks). The knowledge transfer from research into practice is a key process of knowledge economy development at the regional level. Weak cooperation between universities and firms related to the lack of trust and tradition of cooperation of these institutions could be further explained by the theory of social capital. The lower expenditure on R&D in OIR in comparison to metropolitan regions could lead to a lack of scientific activities in this kind of regions.

Several formal institutions have potential work “as catalyst of knowledge processes” in some regions e.g. regional development agency in Wales [15] or Newcastle University in North East of England [2].

#### **4 Institutional issues related to OIR in Central and Eastern Europe**

We have to take into account differences in the development of industrial regions in western Europe and post-socialist countries [16]. Heavy industries were key sectors in central planning economies. In comparison with the countries of Western Europe, where decreased the employment in traditional sectors around 1970, economic depression in OIR in CEE countries started after 1990.

The nature of the socialist regime did not allow the creation of independent institutions to promote regional development. In general, the CEE countries missing the tradition of supporting institutions and their creation after 1990 was linked strongly with the ambitions of EU membership and access to EU Structural Funds.

The problems of institutional lock-ins in industrial areas in CEE are similar to OIR in Western Europe. They can be characterized by lack of innovative milieu, culture of dependency, status quo oriented institutions and rigid labour relations as well as shrinking traditional industries and limited social and environmental attractiveness to new investors. [12]

Following conclusion were identified in the case study from polish region Upper Silesian [12] - The impact of institutional and personal power relations on locking companies is significantly. Regional development needs adequate regulatory and institutional framework, which will also be indispensable in order to utilize funds of EU. The critical point is to change the cognitive lock-.in the people’s mind. Therefore is the sustaining hope of the residents of Upper Silesia (hope in the development of traditional industry) the critical task of policymakers. [12]

The main role in the restructuring processes and the creating of new regional paradigms have in CEE institutions of public administration and universities. Another type of supporting institutions was developed with the help of foreign organizations.„Path dependancy“ become evident in the

ambition of public administration to have control over the network of supporting organizations (e.g. in Slovenia) and in the reluctance to create the public – private partnerships. [17]

From two analyzed case studies in the research REDIPE (Austrian region Styria and Czech region „Jihozápad“) it can be clearly seen that there exist differences between the institutional thickness in the regions from EÚ 15 and newly acceded countries. In the OIR from Central and Eastern Europe is presented less developed institutional thickness on the quantitative and qualitative level, too. In the Western Europe were established specific new regional centers right oriented to development of the regional knowledge economy in comparison to Eastern Europe, where are mainly standard models of business centers and regional agencies presented.

### 3 Conclusion

Institutional thickness could influence significantly the knowledge trajectories on the regional level. Specific kinds of institutional lock-ins hinder the necessary restructuring processes in old industrial regions. In OIR there are many institutions (firms, business centers, regional agencies and other relevant organizations), but they are often too strongly oriented on old industries and technological trajectories. The behavior of institutions could be characterized by limited learning ability, coordination and networking. Institutional unlearning could be the crucial point in this debate. In the OIR from Central and Eastern Europe is presented less developed institutional thickness on the quantitative and qualitative level, too.

Regional institutions have been encouraged to adopt new paradigms of the knowledge economy. Development measures for OIR should be oriented on identifying the indicators of various lock-ins and breaking these lock-ins.

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