

The Situation of Competitive Clusters in Some EU States

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Abstract— A special place in the European regional development policies is occupied by the study of behaviour in the field of localising the agglomerations of industrial activities, which demonstrate their tendency of grouping in space as clusters such as industrial parks, small or large cities, etc. The explanations are based on registering some specific scale economies, known as economies of agglomeration, which have their origin into: the existence of some supplying companies specialised for certain goods and services; the existence of a local labour market; the mobility of information and innovation, etc. The economies of agglomerations are manifested as internal economies of scale, the economies of localisation and economies of urbanisation.

Key words— cluster, the pattern of the growth poles, Hotelling

I. INTRODUCTION

HOOVER is the promoter of the typology of clusters [2, 3] and considers that: the internal scale economies are specific to companies; economies of localisation are specific to certain branches, sub-branches whose companies make up clusters in certain geographical areas; the economies of urbanisation are specific to cities, where clusters of companies appear in various branches or public utilities. Other approaches of industrial clusters take into account: the pattern of growth poles (Perroux, 1950, Boudeville, 1966); the pattern inspired from the product life cycle (Vemon, 1960); the pattern of localised competitive advantages (Porter, 1980).

Alfred Marshall has shown that a geographical concentration of a certain industrial sector determines the

suppliers' specialisation, it draws the labour force with certain common qualifications, it provides economic safety to employees, it creates a good market for suppliers and conditions for improving and specialising the offer.

Weber had as field of interest the choice of industrial localisation, being concerned with the analysis of general localisation factors. The hypothesis Weber's pattern is based upon are: constant technological outputs of scale, the offer of unlimited production factors, the prices of factors are fixed, regardless of localisation, it is considered that localisation depends on placing the sources and markets, the transportation costs for each commodity are directly proportional to the weight and distance which they are transported on.

Hotelling's theory had as essential contribution the improvement of Weber's hypothesis regarding the fact that any manufacturer considers as data the competitors' localisations or that that manufacturer holds the monopoly on the market, the theory taking into account the spatial implications of oligopolies without understandings between the participants. Subsequently, the theory was extended by Smithis, Lerner and Singer, Greenhut. Hotelling starts from the analysis of a duopoly, in this case the localisation issues tend to determine a localisation focused in the centre of the market, provided that the request would be completely inelastic. [4]

Francois Perroux has developed the concept of growth pole strategy, according to which the economic growth is manifested in growth poles placed in urban areas, which influence both regional and economic development as a whole. According to Perroux's opinion, „the increase does not occur everywhere; it is manifested in points or growth poles, with variable intensity: the increase is diffused through various channels to various variable terminals for the whole economy”. [6] According to this opinion, the economic growth pole is an assembly of companies able to generate the economic growth of a branch (field) and/or the economic development of an area or a region.

These poles are featured by a special entrepreneurial spirit and a profitable business environment. In developed economies, they communicate, creating genuine development networks. A region develops around such a growth pole, due to propagating its effects.

J. Boudeville has demonstrated that the regional growth

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pole represents a community of developing sectors, placed in the urban area and is able to generate the increase of the economic activities in the entire area of influence.

Raymond Vernon elaborates the theory of the product life cycle, who started from the connections between the expenses incurred by the company for long-term research and development and its opportunities of profit according to the phases or stages which a product can go through as of the moment when it is released on the market until the moment when its production ceases. This theory starts from a simple observation: a product is created, grows, lives, goes into decline and dies exactly like a living system.

The theory of clusters, launched by Michael E. Porter, refers to the ways and factors that contribute to “increasing the competitiveness at a local, national, regional and global level” and is ultimately a way by means of which a country can cope with the fierce competition in capitalist economy. Porter proves the influence of the competitive connections between the national branches and economic growth, by means of the pattern of competitive advantages of national industries. He argues the need of creating some strong industrial ties between the competitive sectors, so that the participation to the international competition would stimulate the effects of national prosperity growth.

II. THEORETICAL SUBSTANTIATION

Over time, the concept of “cluster” has undertaken several names: competitiveness pole, industrial district, industrial agglomeration. The names that have been imposed were competitiveness pole and cluster.

In English, cluster means a bunch, a bouquet, a group. A business cluster is a group, an agglomeration of companies of competitive feature on a target market. There are a lot of definitions for clusters, which differ one from another and an extensive typology of clusters in all fields. Starting from the translation of the verb to cluster, which means to gather in one place, to group according to a certain criterion, then we reach the definition given to cluster by the initiator of the concept, Porter, that of “geographical concentration of companies competing each other, but also cooperating, of suppliers of goods and services and institutions related to these”. The author has provided a definition for competitive agglomerations (clusters), which was taken as being the standard version for most of the specialised literature in this field, [9], meaning that “clusters are geographical concentrations of interconnected institutions and companies, in a certain field. Clusters include a group of related industries and other entities that are important in terms of competition. Many times, they are extended downstream to various distribution channels and clients and on the side to manufacturers of complementary products and industries related by skills, technologies or common inputs. Finally, some clusters include governmental and other institutions -

such as universities, standardisation agencies, think tank sites, providers of vocational trainers and patronages – which provide specialised training, education, information, research and technical support.” [10]

According to the Official Journal of the European Union [7], cluster is a “geographical concentration of companies specialised in a sector, which are in connection with specific suppliers and other companies in the related sectors, which are in competition, but collaborating at the same time. This sector [11] includes several branches with a mutual enrichment of the disciplines and activities. Indeed, clusters develop their full potential when they are able to take full advantage of interdependence in order to stake on complementary activities, thus creating the synergies which would lead to the joint increase of the entire sector and which all participants in the cluster benefit from. There must be a mutual trust between the members of the cluster, and they must share the same objectives and priorities, so that a total coordination may be achieved in a multiple context on multiple levels.

Industrial clusters are not simple agglomerations/concentrations of companies (studied over time by A. Marshall, Hoover, Perroux, Chimitz and Mills). Industrial or commercial specialisation, diversification, innovation and quality enhancement, as well as the interdependence relations between the companies operating in a region, or their complementarity are features that differentiate an industrial cluster from a pure agglomeration.

Industrial clusters may be classified according to two important criteria, namely: a) their structuring way, being vertically integrated clusters, operating in the automotive industry (the supplier- manufacturer relation), chemistry, clothing, hardware, furniture; horizontal clusters operating in light industry (clothing, footwear), fashion, mass-media, software, biotech and emerging clusters which are development clusters; b) the nature of their activity, there are actual industrial clusters and innovative clusters (the latter playing a key role in achieving a sustainable competitive advantage regionally or locally through the relations which they have in the research-development sector).

Clusters influence the competitive advantage [12] by: improving the productivity of the constituent companies; promoting the innovative capacity; stimulating the creation of new companies within the cluster.

The main elements determining these influences are: the access to specialised factors, access to information, access to institutions and public goods.

The specific actions that may be undertaken by the governmental authority for supporting the development of clusters refers to: the production factors (supporting the research efforts of local universities in fields that are relevant for the cluster, the improvement of the local infrastructure necessary for the cluster, the collection of statistical data necessary to the cluster activity, etc.); internal demand

(reduction of incertitude related to the regulation framework of the market where the cluster acts, supporting the development of some independent testing and authorisation entities, etc.); related or complementary industries (organising manifestations which would reunite the members of the cluster, creation of free areas, industrial parks, etc.); the context for the strategy of the company and competition (drawing the direct foreign investments, promoting the competition, promoting the exports through ways adapted to the particularity of the cluster in question, etc.).

The main advantages, identified after the government authority adopted the pattern of organisation into clusters are: the productivity growth, capitalisation of the regional particularity, increase of information mobility. Productivity, along with the increase of the level of salaries and labour occupational degree are all considered the main advantages which there is an increased interest for forming clusters. The capitalisation of the regional particularity, by means of forming clusters, enables the regions to create a favourable and productive business environment, which leads to attracting as many specialised companies as possible in the region. The increased mobility of information, occurred due to the interactive system which clusters impose, represents the main advantage of clustering, because the technology and innovation do not develop in isolated companies, but in open environments, where there is interaction between the competent individuals in various companies. They interact constructively, assimilating the existing knowledge and generating in their turn new production ideas, products and processes.

The risks of clustering occur from the basic principle of clusters, namely specialisation. A region may become vulnerable, if the owned portfolio of clusters is too concentrated. Moreover, many times the cluster may not be the answer to increasing the competitiveness of a region, and the solution may come from elsewhere.

III. CONTENT OF THE ANALYSIS (RESEARCH)

The analysis of the situation of clusters in some European countries [13] is presented thusly:

1. In France, The European Cluster Observatory states that there are 140 competitiveness poles until now, over 70% of the companies involved being SME's. These competitiveness poles operate in 20 economic sectors. Each competitiveness pole has its own legal personality, most often operating as an association that has a team (permanent personnel) with a determining role in: facilitating the collaboration of "actors" within the competitiveness pole for elaborating and implementing the joint projects; elaborating and implementing the general strategy of the competitiveness pole; coordinating and selecting the offers of research projects by means of which funding is required from public funds specific to the competitiveness pole policy; providing the

communication at international level; providing the communication with other clusters in France or abroad.

2. In Germany, the same publication has stated the existence of 305 clusters in the following fields of activity: biotechnologies, transportation and mobility, health and medicine, new materials, manufacturing and engineering, aviation and space, energy and environment, TIC, micro-nano-octo.

3. In Sweden, the same publication has stated the existence of 145 clusters in the following priority fields: TIC in a ratio of 30%, biotechnologies in a ratio of 20%, production systems and materials in a ratio of 20%, automotive in a ratio 20% and sciences of „work" in a ratio of 10%. The same publication highlights one of the weaknesses of clusters and namely their excessive fragmentation.

In the three countries analysed [14], there are two types of clusters, namely: clusters at national level, with the potential of reaching the international excellence level ("top-level"). They have an impact on that country's competitiveness level; clusters at regional level, the importance of which cannot exceed the borders of the region, with a special impact on the economic development and have the potential of being upgraded to the rank of top-level clusters.

4. In Romania, after 1990, it has been tried to promoted the agglomeration of companies, by: public policies; creation of industrial parks; creation of scientific and technological parks. They were created in the following domains: the textile/clothing sector, the wood processing industry, industry of automotive components, the food industry (for the South-West region) etc.

In various papers, multiple existing and potential clusters in Romania have been identified, namely: in 1998, the International Centre for Entrepreneurial Studies in Bucharest has performed the first study regarding the industrial cluster-type agglomerations in Romania [5]; in 1999 Marco Ricardo Ferrari (Assistant – researcher at the Bocconi University in Milan) has performed a study in the field of clusters, a study which emphasised the SME's; the author Valentin Ionescu emphasises that in Romania there are no functional clusters, but argues the existence of "protoclusters" or "emerging clusters" and supports this opinion by explaining the existence of various levels of development and knowledge in the existing and identified agglomerations. He shows that a possible cluster in the industry of ceramics (in Alba County) and another in the software production in Bucharest; the project VICLI developed within European project INTERREG II C - CADSES between 1999-2001 has tried to identify and support the development of clusters by a regional exchange of know-how. Romania was a country partner in the project, and the final report of the project for Romania identified four potential clusters occurred in Harghita County (Central Region) in wood processing, pottery, typography and equipment industry; the project INCLUDE, financed within the programme INTERREG III CADSES realised between

2003-2004 has as objective the performance of an analysis of the potential clusters existing in the partner countries in Central and Eastern Europe and then providing specialised assistance for these countries in developing the clusters, by using the expertise and know-how from Italy and Austria. Potential clusters have been identified in the textile industry in Bacau and Timis Counties, in software in Timis, Cluj and Bucharest, in wood processing in Mures, in chemical industry, industry of metal products, general use machinery and engines in Brasov. Local clusters have also been identified in various domains such as: leather and footwear industry, industry of electric components, radio equipment and TV and telecommunications; the programme CURAS is a reference at national level, for the analysis of potential development of clusters and was performed within the Cooperation agreement between the governments of Romania and Belgium – Flemish. The programme was implemented between 2003-2004 by ANIMMC and CKZ Limburg. The result of the project consists in realising clusters of local suppliers from a chain of internal and/or international suppliers and subcontractors; the Romania-Ukraine cross-border programme Phare CBS 2005 was elaborated within the project RU-ECON CLUS - ROMANIA UKRAINE JOINT ECONOMIC DATABASE AND CLUSTERS IDENTIFICATION. The project was approved, having as specific objective the “elaboration of a study for identifying some cluster-type agglomerations in the cross-border region of Romania (Maramures County) and Ukraine (Transcarpathia County), by analysing the profile of at least 6,000 companies in the Region, by directly interviewing 200 of these companies, using specialised methodologies and tools within a joint academic team, especially formed for this project and elaborating a database with the member companies of the potential clusters analysed; the WEID project (Delocalisation Process of the Industrial Districts, financed by the European Commission through the Framework Programme 5 – FP5) is a reference for researching the clusters in Romania. The duration of the project was of three years, as of September 2001 until the end of 2004. The partners of the project from 7 countries, three from Western Europe (Germany, Italy and Great Britain) and four from Central and Eastern Europe (Czech Republic, Poland, Slovenia and Romania) have investigated the relations between the clusters at European level, by case studies. Of the 15 case studies, two were done in Romania and the existence of potential clusters in two areas was researched – Banat-Crisana and Arad-Timisoara, in the sports equipment industry and respectively in footwear industry.

In Romania, The European Cluster Observatory has mentioned the existence of 13 clusters [1], which are distributed according to region as follows: The North-Eastern region 2 clusters in the Clothing and Wood field; Southern Muntenia region 1 cluster in the automotive field;

Western region 4 clusters in the fields of Automotive, Constructions, Software, Agriculture; north-western region 1 cluster in the Software field; the Central region 1 cluster in the Wood and furniture field; Bucharest-Ilfov region 4 clusters in the fields of Tourism, Software, Research, Constructions. The same publication [1] indicates 21 possible clusters, which are structured on regions, as follows: North-eastern region 2 clusters in the Petrochemical and Metal Processing fields, South-eastern region 2 clusters in the Agriculture and Renewable Energy fields; Southern Muntenia region 4 clusters in the fields of Agriculture, Constructions, Nuclear and Petrochemistry; South-western Oltenia region 5 clusters in the fields of Chemistry and petrochemistry, Agriculture, Construction, Energy, Food industry; Western region 1 cluster in the printing/typography field; North-western field 4 clusters in the fields of Agriculture, Water supply, Food industry, Environmental technologies; Central region 1 cluster in the Agriculture field; Bucharest-Ilfov region 2 clusters in the fields of Food industry, Research and education.

In automotive industry, it may be a matter of industrial cluster created on the car manufacturer Ford in Craiova, in the South-West region of the country, which horizontally and vertically includes manufacturing companies for car parts for the automotive industry.

The creation of a cluster in 2012 add to these, for the food industry called “the International AgroFood Cluster”, which aims to create and trade some innovative products and services in the field of food products and food industry and to increase the economic competition through tangible and intangible investments financed by own resources or from national and community funds. In the field of food products and food industry, higher education institutions, research institutions, suppliers, customer and competitor are part of the cluster, along with authorities competent in the facility of innovative products (central and/or regional/local authorities).

IV. CONCLUSIONS

The following types of clusters have been identified in Romania: Emerging clusters, existing in the textile industry (Bačau, Timiș counties), in the wood processing industry and in the auto parts industry (the counties in the middle of the country also from the South-West region), in the software field (Bucharest, Cluj and Timiș counties). The creation of these clusters and the cooperation among them can be financed and stimulated by means of the regional policies, the industrial policies and the policies for supporting SME, for attracting investments and supporting research, development and innovation; the industrial clusters have appeared in Bucharest, covering the media sector (written, audio-visual media) and software. There are chances for structuring the industrial cluster in other geographical areas of Romania, as

well. For example, in Alba County (porcelain industry), in Vaslui County (garment industry), in Bucharest-Pipera (furniture industry), in Dolj County (in food industry), in Cluj, Timișoara, Iași Counties (software), in Galați and Constanța Counties (naval industry), in Bucharest and Brasov County (aeronautical industry); protoclusters or forming clusters on horizontal structures exist in the software industry (Bucharest, Timișoara, Cluj and Iași) and porcelain industry (Alba Iulia).

Moreover, there are incipient forms of vertically integrated clusters in the clothing industry (Focșani). There is also a potential for the formation of clusters in the media field (Bucharest), publishing houses-printing houses (Bucharest), furniture industry (Bucharest), vineyards-wine processing (Vrancea, Valea Târnavei, Constanța), garments (Mureș, Vaslui, Vrancea), aeronautics (Bucharest, Brașov, Bacău).

These researches show the fact that there is an intense spatial agglomeration in Romania for the western and north-western companies [15].

Although the clustering of the companies has natural causes, Romania may encourage the development of emerging clusters by supporting the efforts that a group of companies can make in order to fully capitalize the potential of the economic concentration.

The competitive industrial agglomerations, the so called "clusters" are, therefore, a real alternative for the economic development of Romania.

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