



THE CLUSTERS AS A FACTOR ATTRACTING FOREIGN DIRECT INVESTMENTS IN LESS DEVELOPED REGIONS

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Abstract. The role of cluster initiatives in economic and social development is becoming increasingly important. Low level of innovation, poor competitiveness, high levels of unemployment and emigration of qualified workforce are severe problems that less developed regions are facing. Therefore, various cluster initiatives could be a solution. Clusters stimulate innovations and contribute to the increase of competitiveness of local economy and individual businesses. They should also encourage foreign capital investments. Foreign direct investments are one of the most important factors stimulating economic growth. The present paper investigates concept and essence of clusters, the concept of foreign direct investments and Polish experiences in attracting foreign capital. The authors try to answer the questions: how do clusters impact regional attractiveness for foreign direct investments? Which are the reasons behind the locational choices of foreign direct investments near a cluster based environment? What is the role of foreign direct investment in clusters and, finally, what is the impact on regional development from both clusters and foreign direct investment?

Keywords: clusters, foreign direct investments, less developed regions, regional policy

JEL Classification: R12, R58

Introduction

Regional development is driven by many factors, among them are clusters. Less developed regions suffer from lack of investment capital. Therefore, various cluster initiatives are seen as panacea. Clusters stimulate innovations and contribute to the increase of competitiveness of local economy and individual businesses. The clusters transform business environment into attractive location for new foreign capital investments. Foreign direct investments are one of the most important factors stimulating economy and can be the key for regional development.

The concept and definition of clusters

The first economic clusters appeared more than 200 years ago when classical economists noted that businesses are spread unevenly and concentrated in certain geographical areas. Even today, concentration of competing and collaborating businesses is something that differentiates geographical regions (Grycuk, 2003). In recent years the importance of clusters and cluster-based policy (also called cluster-oriented policy) has grown considerably

(Brodzicki and Szultka, 2002). So much so that today clusters are considered to be the most developed and mature forms of production organization, capable of sustaining economic growth and development. Simultaneously, the concept of clusters is a new form of thinking about improving competitive advantage on international markets, a process which admittedly requires appropriate actions and initiatives undertaken by various players, like governments, self-government bodies, entrepreneurs, and different interest groups (Tamowicz, 2002).

In recent years in most Western countries an immense amount of research has been undertaken both to identify existing clusters and analyze factors that stimulate and restrain the development of clusters. In the United States nearly 380 clusters operating in all sectors have been analyzed. In Europe, clusters have aroused especially intense interest in Great Britain, Germany and France. Based on rich analytical resources many regions and cities have developed their own development policies to support and promote clusters. The European Commission and the Organization for Economic Co-operation and Development have also undertaken important initiatives to propagate the idea of clusters (Szultka et al., 2004). The clusters have become subject of interest in Poland since recently. In Poland there still was any clusters and actions promoting clusters in 2005 (OECD, 2005). Nowadays in almost all Poland's regions (except for Opolskie voivodship) work on at least one cluster project is initiated (Bojar and Bis, 2006). It is beyond any doubt that this cluster comes into being thanks to the popularity of the concept of clusters that is growing amongst employees, scholars and politicians.

The term *cluster* signifies a group of similar things growing together or located close to each other or a group of people associating with each other. In relevant literature it is commonly recognized that it was Michael E. Porter who first used the term cluster in an economic sense and context. Translated into the Polish *klaster* or *grono* the term has entered in management terminology in Poland (Brodzicki and Szultka, 2002).

Clusters are a specific form of spatial organization of various sectors of industry and services presently regarded to be the most mature form of organization of production in the postindustrial era. American economist Michael E. Porter defined clusters as the 'geographical concentration of interrelated companies, specialized suppliers, service providers, businesses operating in similar sectors as well as related institutions (like universities, normalization organizations and institutes as well as branch associations). In

certain fields these organizations collaborate and compete as well. Clusters achieving critical mass (essential number of companies and other institutions that form an agglomeration) and gaining tremendous competitive advantage in certain areas, are a striking feature of almost all national, regional, state and even big city economies, mainly in countries with highly developed economies' (Porter, 1990).

What emerges quite clearly from the review of available literature is that there is no standard definition of clusters. Most of the definitions use three basic factors to define a cluster: [1] geographical concentration of interdependent companies that operate in the same or similar sector of industry or services (Mytelka, Farinelli 2000; Enright 2001, OECD 2000, Rosenfeld 1997), [2] interaction and functional connections between companies (Doeringer, Terkla 1995), and [3] suprasectoral dimension of clusters that embrace both horizontal and vertical connections (Doeringer, Terkla 1995; Rosenfeld 1997). Some authors place greater emphasis on the importance of social and cultural factors for the process of efficient flow of information inside clusters (Rosenfeld 1997, Jacobs, de Man 1996, Sexenian 1994).

The various definitions offered emphasize different elements determining clusters: the nature of innovation, direction and strength of connections in the production chains, the flow of knowledge and technologies, and geographical proximity (Jacobs, de Man 1996). Others highlight specialized infrastructure, qualified workforce and availability of supporting services (Rosenfeld 1997). Having considered all the above-mentioned elements, one can define a cluster as a spatial concentration of companies simultaneously co-operating and competing in certain areas, as well as interrelated organizations and institutions with both formal and informal links to the companies (Brodzicki and Szultka 2002).

There is no standard, commonly accepted definition of clusters. Different authors place emphasis on different elements and various dimensions. Most of the definitions cited in this paper encompass at least one of the following elements (Grycuk, 2003):

- Geographical (spatial) concentration;
- Co-operation (competition);
- Sectoral concentration;
- Specialization;
- Interdependence.

The more effective and diversified the cooperation between companies is, even between competitors, the more innovative and competitive they will be. The concept of clusters does not reject competition; it rather seeks to balance co-operation and competition. This state of equilibrium is described by a specially coined term *co-opetition*. In most of modern business theories competition is seen as one of the key forces that drive innovation. Innovation, however, would not happen without broadly understood human and social capital (Grycuk, 2003).

Cluster participants establish a system of interactions and interdependence that generates synergy contributing to the economic growth of companies and development of regional and national economies.

This paper attempts to formulate an alternative definition of clusters. Our definition (Bojar, 2007), however, is partly based on the definition produced by Porter. Porter was right to define a cluster as a geographical concentration of interrelated companies, specialized suppliers, service providers, and businesses operating in similar sectors as well as related institutions (like universities, normalization organizations and institutes as well as branch associations). It is true that in certain fields these organizations may collaborate or compete. In our view Porter's definition should be completed by one indispensable element – a leader. To become established and then developed every cluster needs a leader that initiates and coordinates co-operation between cluster participants and other market players. Leaders can be natural persons, big enterprises, resilient RAD centers, or scientific institutions as well as government and self-government bodies. Since in many cases the clusters are informal organizational structures, charismatic leaders with clear vision are crucial for the clustering process to be successful and effective. Thus leaders contribute to the formulation of clusters' definitions.

Observations of both Polish and foreign clusters give grounds to state that the very existence of clusters in particular areas is a crucial element that attracts foreign investors and influences their localization decisions, in particular big transnational corporations. This is why foreign direct investments (FDI) made in the clusters tend to grow. Foreign investments can play a leading role in a cluster, strengthening the synergy effect in all aspects of the clusters' operations. Therefore, it seems that FDI are an important and indispensable element of the cluster definition.

The case of the Lublin Hop Cluster

Lubelski Klaster Chmielu (Lublin Hop Cluster) is a good example of cluster initiative that conforms to the above definition of clusters. The Lublin Hop Cluster (see Fig. 1 below) operates in a region where there are more than 700 hop growers and companies producing extracts from the hop cones.¹ The Lublin Hop Cluster groups about 10-15 hop growers associated in different organizations, weed-killers and fertilizers suppliers, scientific institutes, food certification bodies, agricultural machines suppliers, purchasing and packaging companies, logistic companies, consulting companies, PR and marketing agencies as well as supporting the cluster self-government bodies of the Lublin Region.

Perła-Browary Lubelskie SA, a joint-stock company with foreign capital is vitally engaged in the process of development of the regional hop cluster.



Fig. 1. The Lublin Hop Cluster

Source: authors

¹ Poland is ranked the fifth world largest hop producer with 2,239 hectares of hop plantations, including 1,821 hectares (88%) located in the Lublin Region alone.

Benefits of clusters for regional development

There is quite an unusual agreement of opinion concerning the potential benefits of clusters for local, regional and national economies. Effective clusters having access to relatively cheap means of production and other resources contribute to the increase in productivity of local businesses (Mariussen 2001). Secondly, the spatial proximity of businesses stimulates and supports their innovativeness (Marshall 1925, OECD 2000). And thirdly, the development of clusters stimulates the formation of new businesses (Sternberg 2001), which translate into new jobs.

Benefits resulting from effective clusters are not limited to the cluster itself. Clusters generate a lot of positive effects for the regions they operate in so that clusters can drive regional development (Austin, Cambridge, Penang). Effective clusters stimulate investments in the development of infrastructure, development of specialized business-supporting services and contribute to an increase in personal earnings, stimulates the pro-export orientation of companies, increases their profitability and thus contributes to economic development. The social effects of clusters include the reduction of unemployment and stimulation of the development of local democracy (Szymoniuk, 2005) due to the impact on labor-market development and the generation of new jobs (Brodzicki et. al, 2002).

According to Innobarometer, that focus on clusters as stimulators of innovation in Europe is due to the fact that one in four companies, in UE, operate in cluster environment. Clusters emerge in all sectors of the national economy. They occur both in industry and services; clusters are formed in traditional as well as in hi-tech sectors (Enright 2001, Mytelka, Farinelli 2000). Clusters vary significantly as regards innovation and technological development and therefore have different development strategies and prospects (Szultka and Brodzicki, 2004).

Poland's interest in the promotion of clusters is a quite recent matter. However, since 2005 more than 50 cluster initiatives have emerged in Poland. Today, some of them are recognized as clusters. There are clear indications that clustering processes occur in almost all Polish regions. Sectors in which already identified clusters operate result from regional specificity. For instance, clusters emerging in the rural Lublin region operate in horticulture, fruit-growing, truck farming, hop growing, cattle breeding and dairy farming. Here clusters group

agricultural products producers, food processing companies, certification organizations, universities, forwarders and agricultural consulting centers (Bojar, 2006).

The case of Ecological Food Valley

The Ecological Food Valley (EFV) is a regional network grouping farmers, food-processing companies, certification and quality supervision bodies as well as opinion leaders that have various interests in ecological food (Skowron and Szymoniuk, 2006). The Lublin Region has a great potential conducive to the development of ecological agriculture, including long agricultural tradition and low industrial pollution. The Ecological Food Valley was started in 2004 and a year later 380 new ecological farms were registered in the Lublin Region, which spells for a 97 per cent increase.

Ecological food supply is shaped by farmers, food-processing businesses, control and certification bodies, marketing agencies, haulage contractors, package manufacturers, etc. EFV's tasks in relation to this group include building ecological awareness, dissemination and provision of information as well as produce distribution support.

A demand for ecological food is shaped by the following main groups of purchasers:

- individual purchasers and households;
- channels of distribution independent from producers such as retail shops chains (general and specialized) as well as school shops;
- canteens, cafeterias and restaurants.

It is planned that Ecological Food Valley (EFV) will achieve a 3-level edifice (Skowron and Szymoniuk, 2006), as follows:

Level 1. Ecological Food Valley (EFV) as a cluster, i.e. regional network of co-operating businesses, other entities as well as institutions and individuals linked by both formal and informal relations.

Level 2. Ecological Food Valley as a formal structure, an organization with all attributes typical to organizations and having capacity to represent its members in dealings with other entities.

Level 3. A special organizational unit established by EFV to provide administrative, organizational and consulting support as well as control.

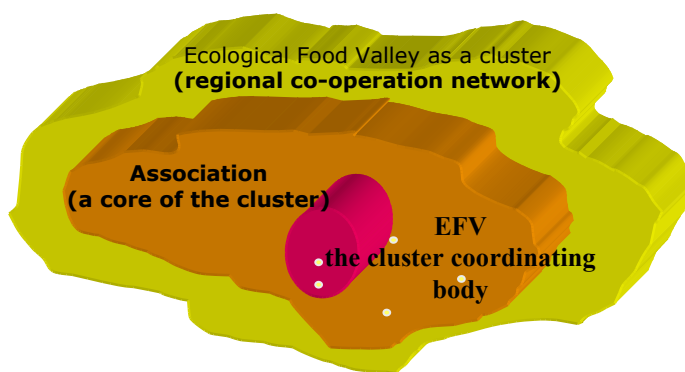


Fig. 2. Functional structure of Ecological Food Valley

Source: S. Skowron and B. Szymoniuk, 2006., p. 75.

Ecological Food Valley is another example of cluster initiatives where crucial role in the cluster formation process is played by a joint venture company Symbio Sp. z o.o. Initially Symbio co-operated with 20 farms. Currently, in the 6th year of operations the company co-operates with as many as 300 farms. Symbio exports to many countries, including Great Britain, the Netherlands, Germany, Switzerland, Belgium, Finland, France and the United States.



Fig. 3. Export destinations of Symbio Sp. z o.o.

Source: Symbio Polska Sp. z o.o. (URL: www.symbio.pl).

Cluster as the factor attracting foreign direct investment

In England Marshall, having analyzed the willingness of companies in the production sectors to locate business near their competitors, major suppliers and customers, developed a concept of external economies of scale. In this way he specified all factors conducive to the

improvement of operational efficiency existing in the immediate environment. Marshall identified three main reasons why companies choose to locate their business in the vicinity of other companies operating in the same sector of the economy (Grucuk, 2003):

- Emergence of a market of specialized vendors and customers.
- Local labor markets that offer experienced and highly qualified work force.
- Diffusion of knowledge (knowledge spill-over) between companies; the concentration of production in industrial districts allows companies (especially small and medium-sized companies) to specialize, exploit joint infrastructure and mimic the best technological and organizational solutions used by competitors.

Since the number of clusters usually increases along with economic development, they are considered to be catalysts of economic growth, factors that stimulate innovation and export as well as attract foreign investments (Szymoniuk, 2003). In specialised literature, the investment promotion policy is widely described. In this policy, clusters are crucial for the attraction of foreign investors.²

Foreign direct investment (FDI) is a special form of foreign capital inflow.³ Foreign investors are motivated by a combination of factors connected to economic situation of an enterprise, its potential, market position, behavior of the competition, the existing degree of internationalization and the resulting experience of foreign contacts.

The factors most often cited are (Rymarczyk, 1996): complementarity of countries in respect of capital, including differences in capital profit rates across countries, the will to use advantages over local businesses, availability of cheap labor, of technical and manufacturing infrastructure, power differences between currencies, and provision of economic

² In order to attract foreign investment, many developing countries have enacted significant policy reforms. They went through what are known as the first and second generations of investment promotion policies. In the first generation of investment promotion policies, many countries adopted market-friendly policies. They liberalized their FDI regimes by reducing barriers to inward FDI, strengthening standards of treatment for foreign investors, and giving a greater role to market forces in resource allocation. Virtually all countries have taken steps in this direction to varying degrees. In the second of generation policies, governments went a step further by marketing their countries. This approach led to the setting up of a number of national investment promotion agencies. More in: Etienne B. Yehoue, *Clusters as a Driving Engine for FDI*, IMF Working Paper, 2005, s. 4.

³ According to International Monetary Fund foreign direct investment (FDI) is a special form of foreign capital inflow. IMF defines FDI as investment to gain lasting interest in a business enterprise in another country. More in: IMF Balance of Payments Manual 2003, , item 350, p. 86. This definition implies a lasting investment relation between an investor and an enterprise invested into, and the investor's influence on management of the enterprise. OECD's detailed benchmark definition of foreign investment includes investment which enables the investor to participate in management after acquiring more than 10% ordinary shares or voting rights. Shares below this threshold are regarded as foreign portfolio equity investment. More in: IMF/OECD Glossary of Foreign Direct Investment Terms and Definitions, FDI Glossary, p. 3. National statistics define FDI on the basis of such additional criteria as the investor's involvement in decision-making (management)

encouragements like: tax bonuses in privileged areas, credit guarantees, and government pledges. Referring to Poland, investors most often name: cost of the labor factor, large and absorptive market, winning or extending a market share, availability of qualified workforce, convenient location and prospects for the country's economic growth.

In Poland, there is the trend towards FDI localization in regions that have free human resources and good infrastructure. When we consider it and answer the question: why do the companies locate their business near other firms from the same sector, complementary answer could be found. Human capital and well developed infrastructure attract foreign capital. Inflow of foreign capital is conducive to the process of concentration of other companies around a foreign investor which forms favorable conditions for the establishment and development of a cluster.

Ireland's pharmaceutical industry is a good example concerning the importance of clusters. Foreign Direct Investment for the Pharmaceutical sector in Ireland is 40 years old with Squibb (now Bristol-Myers Squibb) being the first pharmaceutical company to locate in Ireland in 1964. Currently thirteen of the top fifteen companies in the world have substantial operations in Ireland (Yehoue, 2005).

One of the most important attribute widely considered in literature of clusters is innovation. The research and development facilities mentioned above play an essential role in innovation processes that ultimately determine competitiveness of an economy. Innovation can also be a factor that attracts foreign investors. There is another synergic effect – FDI brings new technologies that stimulate innovation and these make region more attractive for other investors.

The transformation has shown in practice that innovation in a few companies of a given sector leads, via competition, to increased productivity of the entire sector (Frejtag-Mika, 2005). As a consequence, production costs in the enterprise are reduced and funds are freed to be allocated to other ends, in particular it can drive clusters to faster development. This stimulates appropriate innovation by users, suppliers and competitors, and encourages higher outlays on research and development in attempt to attain most benefits from innovation. Competitive pressure generated by foreign branches may also exert positive influence on local

companies, pushing them towards more effective research and development efforts and implementation of new technologies. FDI may therefore enhance growth processes in the economy, though one cannot expect that allowing them in will alone transform technological foundations and innovative potential.

Foreign direct investments play crucial role in the creation of new jobs and retention of existing ones.

The very presence of foreign capital and particularly international concerns in the cluster's structure usually attracts domestic capital. Therefore, it is easier for the clusters to expand and acquire new markets. The companies and farms forming a cluster can use international channels of distribution developed by a leading joint venture to sell their products. The environment of clusters stimulates innovations so that the cluster participants can exploit numerous opportunities to shift from being suppliers of standard components to multinational companies to become manufacturers of novel products.

Therefore, it seems to be well grounded to assert that foreign direct investment may bring Polish enterprises to foreign markets and that the modern technologies accompanying FDI undoubtedly increase the competitiveness of Polish products (Michałków, 2004). Foreign direct investment supplements domestic capital, ensures modern technologies and tightens production and co-operation links between domestic and foreign enterprises. Thus, FDI contributes to the integration of markets, including integration with the EU internal market so that foreign enterprises not only make stronger structure of the cluster but also extend this structure. FDI generates new jobs in receiving economies. One could say that foreign direct investment is a sound base of every resilient economy.

Conclusions

Clusters play crucial role in improving competitiveness of local economy. They are considered to be catalysts of economic growth. On long term they bring better management of free resources. The environment formed by clusters is especially favorable for the location of foreign investment and these investments can play a leading role in a cluster.

There are two significant synergic effects between clusters and foreign direct investment. These effects refer to both human capital and innovation. Clusters support improvement of

human capital and infrastructure and attract foreign investments. Foreign direct investments are conducive to the process of concentration of new companies around the foreign investor and in fact this makes the structure of the cluster to be stronger. Innovation also is the area where the synergy effect appears. Cooperation and competitiveness in clusters push companies to innovation. Innovation – is also the factor that attracts foreign capital.

Competitive pressure generated by foreign branches exerts positive influence on local companies, pushing them to be more innovative. Moreover foreign direct investment brings new technologies that stimulate other innovations and these make region more attractive for other investors and in fact it forms favorable conditions for development of cluster – the synergy cycle has been closed once again.

The very presence of foreign capital in the cluster's structure usually attracts domestic capital and makes it easier for the clusters to expand and acquire new markets. Therefore, it seems that FDI are an important element of the cluster definition.

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