

THE ECONOMIC AGGLOMERATION FROM THE ROMANIAN SEAPORTS AT THE HALFWAY BETWEEN INDUSTRIAL DISTRICT AND INDUSTRIAL CLUSTER

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Abstract. With the increasing popularity of the cluster concept, ever more economic agglomerations tend to be classified as clusters just after a brief examination, at the expense of older but better shaped models. The implications of such attitudes are found most often in undersized political dispositions that follow. In this article we support the concept according to which, the economic agglomeration model localized in the Romanian seaports is in a transition phase between the type represented by the industrial district and that set forth by the industrial cluster, borrowing features from both, but identifying with none. To substantiate this view, we show that the two types of economic agglomeration largely reflect industrial practices used in the moment in which they emerged.

Keywords: cluster, industrial district, economic agglomeration, seaport, Constanta port.

Jel classification: R11, R12, L91, L14, L20

1. Introduction

Agglomeration of economic activities in the Romanian seaports is a recent phenomenon whose onset can be located precisely in 1991 when the port services market was liberalized¹. The seven large companies that supply most of the freight and passenger transfer services in 1991 would be replaced by 2011 by 40 new companies.

This process of disaggregation of vertically integrated industrial giants, amid the emergence of smaller-sized companies, symptomatic for economies of Eastern Europe after the 90s, is highlighted in the literature as part of a broader stream dedicated to the decline of Fordist industrial practices.

We find the main elements of this trend - flexible specialization and agglomeration of economic activity, outlined in Piore and Sabel (1984) and Storper and Scott (1988).

However, the key element leading to agglomeration of economic activity in such a location is represented by shared use of public infrastructure².

Even if the main beneficiaries of the infrastructure are its direct users, the way of how they use the infrastructure can generate economic agglomeration of the specialized industrial district type, observed by Marshall (1920), with associated positive externalities: skilled local labor pool, information spillovers and local non-traded inputs.

The fact that the common root of the main companies in the studied area represents a small number of former state enterprises is an indicator of the highly developed social network. The association between social network and specialized economic agglomeration is found best outlined in the revised version by the Italian authors of the industrial districts (Brusco 1982; Becattini 1991; Piore and Sabel 1984; Dei Ottati 1991).

However, the changes induced by globalization and the emergence in the field of logistics of new practices, have left traces in the nature of links between companies that make up the economic agglomeration.

Several global players have appeared on the port services market, this fact having an important impact on the social relations that kept the firms connected in the agglomeration. Gradually, the atmosphere of cooperation began to merge with that of competition the result being closer to the industrial cluster described by Por-

¹ Law 19/1991

² The infrastructure of Romanian commercial seaports belongs to the public domain of the state and is managed by a port authority which is not involved in the port services market

ter (1990, 1998a, 1998b) than to the industrial district form.

In developing this paper we started from the theory of Vernon (1966) according to which, economic agglomerations are by their nature, dynamic structures, able to evolve.

In our attempt to show that the Romanian seaports economic agglomeration is currently in an intermediate state between the industrial district model, and the industrial cluster we will begin from the description of processes that occur between companies of the two types of agglomeration. Then we will proceed in presenting the activity of the studied area, outlining the relations that occur between the firms in agglomeration.

2. Theoretical perspectives of economic agglomerations in ports

Central business district conceived in neoclassical theory of location of economic activity, developed by Alonso (1964), Muth (1969), Mills (1970) and Evans (1973) can be regarded as the central node of transport technologies (Glaeser and Kohlhase 2004) because of the fact that rail terminals and ports are natural factors of agglomeration that cause the emergence of monocentric cities. According to Limao and Venables (2001) the median landlocked country has only 30% of the trade volume of the median coastal economy.

If this kind of thinking explains the emergence and development of major urban areas in the port cities, changes brought by the improvement of transport and communication technologies in recent decades, dramatically affects the way in which port economic agglomeration is regarded.

Thus, authors such as Krugman (1991), Glaeser (1998), Glaeser and Kohlhase (2004), going with the version that embraces the dichotomy between the cost of transport and that of information, considers that the decrease of transport and communication costs due to technological advances, is likely to concentrate freight flows in intermediate locations. Therefore, between a location A where agricultural production is prevailing, and another location B where the predominant production is industry related, a location node C is likely to be developed, as a re-routing transport flows node (Notteboom *et al.* 2009). Ideally this could be a seaport.

A more complex approach of the phenomenon of localization of economic activity according to spatial trading costs, is found in McCann

(1993) and McCann and Sheppard (2003). In this approach, the spatial trading cost consists of the cost of transmitting information and the cost of transporting goods.

In the case of transmitting information cost, the increase in the amount, the variety and complexity of the information transmitted (due to cheaper information transmission unit) has led to increasing the costs associated with transmission of information in space. In the case of freight cost, demand pressures to increase the speed of delivery of goods and lower average inventory levels³ (due to cheaper unit of transported good) have increased the share of this component in the total transport cost.

McCann uses the broader concept of logistic cost, to summarize both the effects of transport costs and those of industrial costs associated with maintaining stocks. Under this approach in an attempt to minimize the cost of spatial transactions, some company will locate near firms that belong to the same hierarchy of consumption and production as it does.

Moving from analyzing the reasons of economic agglomeration emergence to the observation of existing settlements, Fujita and Mori (1996) propose a framework for analysis of port activity, based on the competitive advantage of industries located in ports and on the quality of access between the port and the target region.

We see a trend in this respect: as cities began to be defined as integrated elements in an urban system, leaving behind them the representation as isolated elements dedicated to regions, also ports begin to leave behind the automatic association with specific industry, integrating into broader concepts related to the spatial agglomeration of economic activity (Langen 2004; Nijdam 2010) or the occurrence of transport hubs (Olivier and Slack 2006).

We will follow on the main characteristics of the firms from the two types of agglomerations studied and the processes taking place between them.

3. The industrial district

Although the term industrial district is first used by Alfred Marshall in the late nineteenth century to describe a specialized economic agglomeration, it has been reborn with the decline of mass

³ The most stricken example is given by the implementation of production and distribution models Just In Time (Nishiguchi 1994, Schonberger 1996)

production and consumption specific of Fordist industrial practices.

The place occupied by the Fordist practices began to be gradually taken over by flexible specialization fueled on one hand by a growing demand for various custom goods and on the other hand by an offer influenced by new technologies which gave the production a greater flexibility.

One of the first areas where this trend started to make its presence felt is that of central Italy, several Italian economists (Bagnasco and Messori 1975; Brusco 1982) noting the unusually high performance of this region, compared with the rest of the country. Piore and Sabel (1984) were the authors of the first book published on this subject. The authors tried to explain the economic advances made by the Emilia-Romagna through the flexible specialization process. In their vision, flexible specialization represents a return to economic principles, social values and community ties, characteristic to manufacturing production, lost with the installation of mass production.

Thus the return to the work of Marshall was made. He stressed in 1890: "When an industry has thus chosen a locality for itself, it is likely to stay there long: so great are the advantages which people following the same skilled trade get from near neighborhood to one another. The Mysteries of the trade become no mysteries, but are as it were in the air." (Marshall 1920).

The industrial atmosphere represents in Becattini's vision (2002) a result of a social process that is simultaneously the process of creating goods and that of creating a social community. So, the key of the industrial district lies in cultural homogeneity that facilitates social relations of economic actors, strengthens consensus and group loyalty, assures ostracism for those who violate the group rules and provides a common language that speeds the circulation of information (Becattini 1991; Best 1990; Dei Ottati 1991).

Cultural homogeneity ensures the premises of the occurrence of an integrated system, able to achieve savings (cost reductions and revenue increases) that are external to the company but internal to the district (Harrison 1991).

However, even if cultural homogeneity promotes economic action in a community, it may seriously limit economic exchanges with the external environment of the community. Granovetter (1983) signals for example, the negative effects that strong ties within a community can have on the fructification of arising opportu-

nities, unlike the weak ties. Studies by Grabher (1993) and Glasmeier (1994) bring new evidence of adverse effects that closed social circles have on local businesses.

Against this background the problems identified by Whitford (2001) also make their appearance. They are related to: technological research, marketing, training and services for export and cannot be solved by appealing only to local resources. Industrial district, specialized in marginal innovation, cannot compete with leaps in innovation made elsewhere, where the requirement of connectivity to international networks of scientific codifying knowledge is observed.

In this situation, it is obvious that cultural homogeneity which caused the separation of the Industrial District from the Fordist production type gets to be an impediment to its development under the generalized effects of globalization, marked by unprecedented growth of goods, services and knowledge flows, and mobility of persons (Zaharia 2004). According to Scholte (2000), globalization is a new and distinctive phenomenon in that it *de-territorialized* production activities.

In the same vein, Harrison (1994) finds that takeovers by multinational corporations are an invasion that transforms, in terms of quality, the competitive environment of an industrial district, which is deprived of hierarchies and based on cooperation. With the changing of external conditions, we see that the unit of analysis begins to be displaced from the *system of firms to the firms in the system*.

4. The industrial cluster

Different forms of economic clusters respond differently to the challenges of globalization. We will focus in what follows, on a form of economic agglomeration in which firms benefit from locating near other firms, but without entering into a symbiosis with the space they occupy, thus being able to seize the opportunities offered by globalization.

This type of agglomeration consisting of companies that show an opportunistic attitude towards cooperation, could not appear and be developed at a conceptual level elsewhere but in the era of globalization.

The starting point is the theory developed by Porter (1990) which has the main target to find the answer to the question: *why some com-*

panies located in certain countries are able to achieve sustainable competitive advantage?

In this frame of dynamic theory of global economic competition, Michael Porter embedded the cluster concept. Porter defines the cluster as “a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities” (Porter 1998a, p.215). At its center, the cluster has the proximity effect from which: “benefits flow forward, backward and horizontally. Aggressive rivalry in one industry tends to spread to others in the cluster”... “exchange of R&D and joint problem solving lead to faster and more efficient solutions”... “Suppliers also tend to be a conduit for transmitting information and innovation from firm to firm” ... “All these benefits are enhanced if suppliers are located in proximity to firms, shortening the communication lines” (Porter 1990, p.151).

This model is based on four factors (firm strategy structure and rivalry, factor condition, demand condition, related and supporting industries) that strongly interact with one another in a local context. From this perspective Porter’s model has some clear links with the industrial district concept, in that they are both based on the external factors identified by Marshall as reasons for firms to concentrate geographically (the principal differences between Industrial Districts and Clusters are shown in Table 1). What Porter’s model brings in addition to that of the Industrial District is mostly related to interaction in the business environment. In this sense, Porter shows a new side of the benefits brought by the interaction between customers, suppliers and competitors.

These interactions promote the creation of weak ties (Granovetter 1983) between companies, having as main effects: the cohesion of social system, speeding the spread of ideas and leveling differences between subgroups.

However, some researchers have pointed out over time certain limitations of the theory developed by M. Porter in the industrial clusters domain. Thus, in works such as Gordon and McCann (2000) and McCann and Sheppard (2003) alarm signals are drawn regarding the tendency of analytical perspective built by Porter, to focus only on the benefits of industrial clusters, overlooking the forces that are acting in the way of industrial decentralization.

Table 1. Differences between Districts and Clusters (Source: assembled by the author)

Features	Industrial district	Industrial cluster
Firm size	Small and medium	Some firms are large
The characteristics of relations	Identifiable stable and frequent	Unidentifiable, unstable and fragmented
Access to agglomeration	Internal investment	Rent payment
Access to community	Closed	Open
Agglomeration effect on rent	No effect on rent	Rent appreciation with the increase of agglomeration size

Thus, the industrial cluster could come to be regarded as a panacea for all regional problems (Martin and Sunley 2003). Another serious problem identified by these authors is the lack of microeconomic rigor in defining the cluster, leading to deficiency of unity in the identification of a cluster recognition methods or the space it occupies.

The result is the misuse of distinct terms such as cluster, industrial district and network companies, which come often to be considered substitutable terms.

5. The economic agglomeration in the Romanian seaports

Romanian maritime port complex is composed of a main port - Constanta and the two satellite ports of -Mangalia and Midia. Constanta Port is both the largest Romanian seaport and the largest European Union port to the Black Sea. In 2010, over 800 companies were operating in the port complex, in a geographical area of approximately 1561 ha⁴.

The total income of the first 30 of them alone, is about 10 % of Constanta county domestic product^{5,6}. Most of these companies are involved in transport activities or provide ancillary transport services.

After the liberalization of port services market, the number of companies engaged in loading / unloading of ships increased from 7 in 1991 to 38 in 2010, the number of firms that have opened subsidiaries inside the seaport area, increased from 130 in 1992 to over 650 in 2010.

⁴ Source: <http://www.portofconstantza.com>

⁵ Constanta county is ranked 3rd as share of Romanian GDP formation

⁶ Source: <http://www.mfinante.ro>

In terms of the level of aggregation of economic activity in Romanian maritime port complex, it complies with the findings presented by Langen (2004), respectively: cargo handling, transport, logistics, manufacturing and trade.

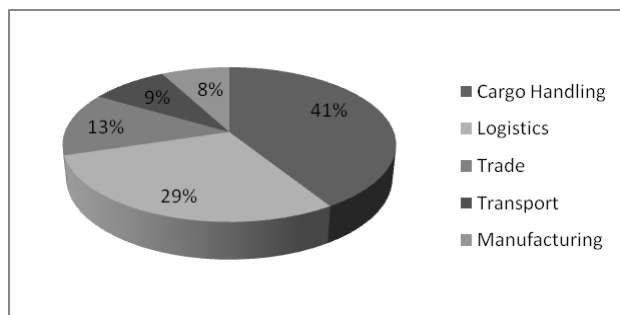


Fig.1. Concentration of Economic Activity in 2010 (Source: author calculations based on work licenses⁷ issued by Maritime Ports Administration in 2010)

As shown in Figure 1, economic activity is overwhelmingly concentrated in the cargo handling and logistics activities because, by their nature, they are located in the port area, where cargo is transferred from sea to land or vice versa. On the other hand, activities such as trade, transport and manufacturing, doesn't need the presence of the company in the port area.

In Table 2 we have the results of the analysis of the link between port activity, as measured by port total traffic and the activity of the national economy, measured by gross domestic product. Firstly we note that after 1991 a positive dependence begins to install itself, between port activity (dependent variable on the regression) and gross domestic product (independent variable).

Table 2. Regression of total traffic on Romanian GDP (Source: author calculations based on Constantza Port Handbook 2012 and UN Statistics)

1970–1990		
Coefficients	-1.33 (α)	-0.37 (β)
Standard Error	1.67	0.2
	0,17 (R^2)	2.44 (DW)
1991 – 2009		
Coefficients	0.35 (α)	0.34 (β)
Standard Error	2.5	0.11
	0.38 (R^2)	2.82 (DW)

This trend can be explained by the correlation of activity between the seaports and the economy as a whole, which started in the early 90s, with the ceasing of bad exports consisting

⁷ The work license is a mandatory document issued by the N.C. Maritime Ports Administration for all the companies who operates in the seaports area.

of raw materials and goods with a low degree of processing but bulky, which stimulated the growth of port activity, on the background of an underperforming national economy (hence the negative dependence of the β coefficient in the period of 1970-1990).

Based on the evolution of the coefficient of determination, we see that there is a tendency for a growing percentage of the variance of port activity to be explained by fluctuations in gross domestic product.

We believe that this may be an indicator of the concentration of an increasingly large proportion of Romania's foreign trade in its seaports. In conclusion, the results presented in Table 2, denote the existence of a process started in the early 90's, in which the economic activity of Romanian seaports began to align with that of their hinterland.

This trend is enhanced by reaching to maturity of some logistic concepts introduced during the period of 1960 – 1980, respectively - containerization of transported goods and the production and distribution model Just in Time. The effect that these concepts have on port logistics is that of transforming them from simple transfer and storage areas of goods, into areas for creating value-added logistics activities (Notteboom & Winkelmanns 2001). This is the new context in which the port community develops its activities.

5.1. The analysis of firm relations in the 1991-2003 periods

Most of the new companies which entered the port services market in the 1991-1999 periods are actually departments of former state enterprises. The fact that new economic entities have been drawn from the massive socialist corporations, keeping their employees, contributed to the creation of cultural complexities in the economic agglomeration, consisting of common values, knowledge, institutions and behaviors.

The managers of these entities had a common past mostly being former work colleagues. The organizational culture of the former large enterprises was to be extended to the whole community, stimulating the creation of a cultural homogeneity that would be supported by the fact that most of the new companies emerged in the port complex were developed by individuals who left the state, initiating private companies. The contracts awarded to these new companies, came as a result of the relations that the entre-

preneurs had developed in a social community which remained closed. Unlike the industrial district which is in competition with large multinational companies, as well as other districts, the port community benefited from the right of public infrastructure exploitation, inherited from the old state enterprises, virtually monopolizing access for businesses that needed public infrastructure.

5.2. The evolution of relations after 2003

Structural changes in freight traffic carried by Romanian maritime ports (Fig. 2) were determined, as we have seen, by the implementation of the new concepts of international logistics. These changes in turn, led to the emergence of a process of displacement of the unit of analysis from the system of firms to the firms in the system.

Thus, if by 2003 all goods transferred through the port of Constanta were handled exclusively by Romanian companies, well integrated into the social environment, in just 7 years, 31 % of the total traffic came to be operated by foreign owned companies, all branches of multinational companies.

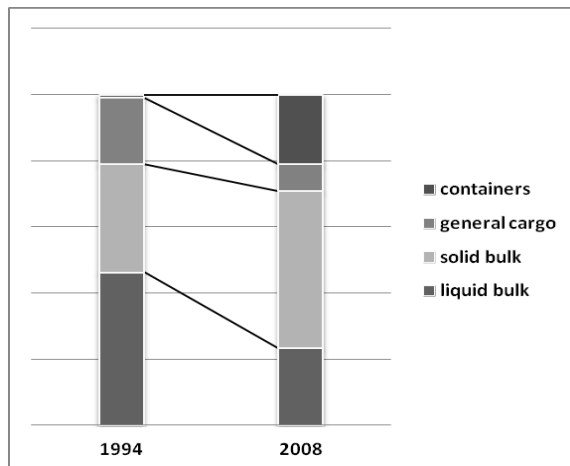


Fig.2. Structural changes in traffic (Source: N.C. Constanta Port Administration S.A.)

Along with the entry of global players on the port services market, in addition to the technological changes imposed by these new companies to the old operating environment of the seaport, the social structure that gave consistency to the cultural homogeneity started to suffer some changes. Strong social ties that kept the port community closed, have begun to yield to the pressures made by the large transportation networks, the seaport complex being about to be transformed into a node on this networks.

Under these conditions, strong ties established between departments of the former state

enterprises are starting to give way to weak ties (Granovetter 1983) established between multinational corporations and local service providers (made up of emerging firms) on grounds of efficiency. Therefore, the business environment of the port area begins to be transformed primarily due to implementation of new business models.

This phenomenon is best observed in the management structures of the cargo handling companies. Thus, except the segment of general cargo, the main port operators in the field of containers and solid and liquid bulk are run by managers whose past doesn't interlink with the Romanian maritime ports. The vast majority of them have completed business administration courses at various Western educational institutions. Although there are major changes in the cultural homogeneity of the port operators specialized in handling containerized cargo and solid and liquid bulk, we cannot say the same about the port operators focused on general cargo.

Here we find a group of companies which, by their nature and structure of relations with their customers, compose a construct that is more appropriate to an industrial district than to an industrial cluster. The vast majority of these companies have small to medium sizes and provide services for a mass of few and constant customers. Trade relations established between these companies and their customers are in some cases over 20 years old, manifesting the existence of cultural homogeneity and strong social ties.

Goods that make up most of the volumes handled by these port operators, like iron scrap, timber and fertilizers, don't allow the occurrence of much adding value operations in their transit through the port area and beside this, don't come in large quantities.

Thus, the strong links between traditional operators of general cargo and their customers and also the small size of the market, constitute barriers for new entries in this market segment, keeping it somewhat isolated from the rest of the agglomeration.

6. Conclusions

Common use of infrastructure is the main factor generating agglomeration of economic activity in a port. But the way in which it is used, may dictate the type of agglomeration that can be formed.

Assuming that there are fundamental differences between industrial district and industrial cluster and using deductive methodology, we

attempted in this paper to show that economic agglomeration in Romanian seaports is currently in an intermediate stage, of detachment from some characteristics of industrial district (cultural homogeneity, closed social network) and referral to other specific to the industrial cluster (the emergence of multinational companies, open social networks, cooperation and competition, spread of technical developments).

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