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**Conference Paper**

## Crisis and conversion of industrial port complex: the case of Gdansk (Poland)

55th Congress of the European Regional Science Association: "World Renaissance: Changing roles for people and places", 25-28 August 2015, Lisbon, Portugal

**Provided in Cooperation with:**

European Regional Science Association (ERSA)

*Suggested Citation:* Lorek, Maria (2015) : Crisis and conversion of industrial port complex: the case of Gdansk (Poland), 55th Congress of the European Regional Science Association: "World Renaissance: Changing roles for people and places", 25-28 August 2015, Lisbon, Portugal, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:

<https://hdl.handle.net/10419/124718>

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## **Crisis and conversion of industrial port complex: the case of Gdansk (Poland)**

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### **Introduction**

Since liberalization, a recurrent question is inserted in debates on local development that is about the growth of economic activities and the capabilities to generate specific resources to the development of innovation. In this context, the reintroduction of a market economy in the centrally planned economy plays an important role. It allows territories to pass from functional logic to the territorial logic. The State defines the territorial order (administrative), gives more flexibility to the new institutions and other local actors (firms, associations) that contributes to the emergence of a coordination system based on collective action of public and private actors which can form the institutional agent composed of an actor network in the future. The link between public and private actors promote the sharing of skills and knowledge which gives way to collective learning essential for the conversion of economy originally based on heavy industry now in crisis. Learning contributes to the accumulation of intangible resources (skills, knowledge and know-how) that allow going from relationships generating specific externalities to innovation. The latter is thus presented as a territorialized interactive process, conditioned by the capacity of local actors to generate endogenous dynamics. It is from this theoretical perspective that can be understood, from our point of view, the dynamic development of territories after economic liberalization; in this regard, Gdansk (formerly Danzig), Poland, is a revealing example.

Two aspects draw our attention. On the one hand, the territory of Gdansk is an interesting example of a local economy that has conserved its inheritance as heavy industries installed since the end of Second World War while developing high-tech activities. On the other hand, the institutional and organizational transformations of this local economy after the reintroduction of the market economy draw our attention to the complementarity between the actions of public and private actors. The issue of our paper is based on the close links between

the conversion of local economies based on heavy industry and economic liberalization. The main question we try to answer is: *under what conditions an industrial territory can generate certain entrepreneurial dynamics and innovation?* To answer this question, we use the evolutionary theory of the firm (Nelson and Winter, 1982) and the transaction costs theory (Coase, 1937; Williamson, 1975). We will insist on the answers to this question because it is at the core of the theoretical debate on the current local development. The results of analysis will complement the theoretical debate on the conversion of local economies.

## **1. Conversion of industrial port complex: a theoretical approach**

Territories that have accumulated the significant weight of heavy industry after Second World War, worked in a specific context in which the hierarchical organization determines local economies. Local actors form the complex systems involved strongly hierarchical and structured by asymmetrical relations of domination and dependence (Perroux, 1955, 1961). Economic liberalization changes the territorial systemic contributing to the emergence of local productive system that depends on the innovative capabilities of the actors.

### **1.1. The constitution and organization of industrial port complex and their crisis**

#### **1.1.1. Industrial port complex in an approach of F. Perroux**

The rapid development of port activities in the sixties led to a significant demand for the processing of steel, while fostering the emergence of sectors producing industrial equipment (substitution of iron craft wood craft, joining activities port-industry). The strong connection between port activities, naval and steel industries has led to the emergence of industrial port complex. In the theoretical contribution of F. Perroux port industrial complex that is formed after Second World War, is presented as growth poles due to the presence of a key industry / motor industry likely to generate spillover effects, a non-competitive effects favoring web / link between the port and industrial activities and an incorporated community around the motor industry (Perroux, 1973). This industry has unbalanced powers through which it can affect the rest of the economy by generating spillover effects or effects of stoppage / blockage. The productive impact theory advanced by Perroux says the asymmetrical relations produced by the motor industry are at the origin of dominance effects (attraction) which determine the development of local economies.

G. de Bernis Destanne expands the theoretical contribution of Perroux focusing on the nature of industrial trade and territorial organization. His concept of industrializing industry based on systemic darkening of input-output matrix corresponding to the upstream spillover effects (influence by purchases) and the "making available to the entire economy of sets new machines "corresponding to the downstream spillover effects (influence by sales, substitution of domestic capital to imported capital) (Destanne de Bernis, 1966, p. 217). G. de Bernis Destanne explains the subsequent development of the industry and changing branches geographically close production functions. The loops of interaction between local actors strengthen the spillover effects by contributing to the prioritization of economic activities and ensuring their better cohesion. In this specific context, companies were operating according to the logic of economies of scale which increase size and production capacity while reducing unit costs in order to get a high profit (Marshall, 1906, p. 459).

The development of industrial port complex is one of the major changes that have occurred after the Second World War in industrial countries promoting the industrialization process. To understand the development of industrial port complex in centrally planned economies, we have to wonder about its organizational system.

### **1.1.2. The organization of industrial port complex and their crisis**

In the centrally planned and administered countries, growth poles are developed under the visible hand of the Plan Administrator. The hierarchical organization and the exchange of inter-industry trade constituted operational administrative tools that ensured the supply of resources and distribution of finished goods (Pourdany, 1958). The spillover effects expand only in the central plan who controlled the provisional production (long term) and business management (short term). The specific configuration of port industrial territory (the high concentration of motor industry and the intermediate goods sector, harbor, etc.) determined the trainability of motor industries. The structuring port industrial complex linkages were determined by attitudes related to the capacity of actors to consume, save and invest. The strong State intervention favored the emergence of particular forms of accumulation and distribution that have worked in a logical optimization of economic processes (Nove, 1981, p. 42).

Assuming that the organizational characteristics influence the production, industrial port complex can be identified (dissociated) depending on their organizing production mode, more precisely, contractual relations structuring (Coase 1937 reissued in 1993, Williamson, 1975). According to the theory of transaction costs, organizational form recommended to conduct a transaction must minimize the sum of production costs and transaction (cost planning and control of tasks). These are defined as “all of the specific costs related to the management face to face between two economic agents” (Williamson, 1986, p.48). After the Second World War, the state action has contributed to reduce the costs generated by the internalization of activities in the centrally planned countries. As a result, the growth of industrial port complex has been provided internally by the fusion of industrial and port industries and externally by motor functions externally by the terms of organization and functioning of the international economic system.

In centrally planned countries, industrial port complex were developed under specific conditions where the hierarchical organization and imperative planning have reduced regional and local bodies to a subordinate status. Each local organization was both a part of a local authority and a representative part of the central government in this geographical zone (Nove, 1981). The absence of administrative authority autonomous in local level has led to the "over-centralization" of the economy (Kornai, 1984). The region has neither the power on management or in decision-making in budgetary matters. The realization of the orders imposed by a remote center did not encourage local initiative. The requirements of the central authorities have often been a source of inconsistency, since local industries have intentionally misrepresented information on their production for the amount of inputs required for their production.

Administrative rigidity of the industrial port complex management system did not decrease the costs generated by heavy industries. The latter have gradually found themselves in difficulties (closure of industrial units, massive layoffs) because of insufficient equity, the excessive indebtedness of the country, often obsolete equipment, structurally deficient and misguided activity the reduction in public investment resulting in the development of parallel activities (the informal economy). Furthermore, supply shortages, delays in the communication of plans, changes in the current plan were major constraints to business. Many sectors of the economy were quickly affected by shortage of phenomena. Heavy industries were the first to be affected because of their significant resources and energy needs

(closure of industrial units, massive layoffs). The new requirements on the side of port functions and the pressure of competition have raised the need for greater diversification of industrial activities and improved links between the port and industrial functions. According to J. Kornai, this crisis "not simply from human error, the managers or planners, but it is the result of the economic mechanism and institutional framework" (1984, p. 6). In the same sense, Andreff W. (2007) noted the chronic lack of economic efficiency of the centrally planned system. The crisis of the centrally planned countries has resulted in the increased number of imbalances in the goods market and the labor market. All the difficulties that emerged during this period gave definitely question the centrally planned model of development. Heavy industries were called to reorient their core business which was strongly influenced their ability to stimulate endogenous dynamics. Traditional sectors had to bear the high cost of restructuring. Their development is based on an autonomous activation logic of local resources in order to revitalize local activities.

## **1.2. Conversion of local economies and territorialisation of innovation**

### **1.2.1. Liberalization and conversion of local economy**

The liberalization of economic activities is inevitable to improve the competitiveness of territories with high industrial concentration and ensure their reintegration into the new economic conditions (globalization and competition). The application of liberal principles change the systemic of local economies leading to the institutional and organizational decentralization. The first results in the emergence of local authorities with real powers. The second is related to changes in the system of large industrial enterprises, which after privatization, are led to restructure and streamline their strategy. Large firms outsource certain activities for SMEs which contribute to the change of the local organization. This results in the emergence of industrial districts, which are based on a technical-productive combination specific to which large companies and small and medium enterprises (SMEs) are networking (Marshall, [1890] 1906). The territory is not so defined according to the administrative division, but systemic relationships that structure. The introduction of the market economy allows territories to spend a systemic state (characterized by routines and socio-economic characteristics clearly identified) to a new morphology based on the value of a set of resources to whom the intangible nature has become a priority.

The contract has become a vital link in the chain in the hands of local authorities is used primarily to promote the location of economic activity and the creation of new jobs. The adaptation of new specific measures for the affirmative action requires the establishment of a new master plan which is used to optimize the structural development of the territories to reduce long-term inter-regional inconsistency.

Local authorities receive the finance to revitalize the local economy. The state must provide direction and coordination of choice of local authorities in regional development. In this new context, local authorities give priority to offer prioritizing political endogenous factors (corporate real estate, services, telecommunications, skilled workforce, improving science and local technical offer) (Lucas, 1988; Romer, 1991; Barro, 1997) that create favorable conditions for the creation of an environment conducive to the installation environment and the sustainability of economic activities. In theory, the quality of the territorial offer is enriched by the collective action of the state and local authorities. In addition, the implementation of support policies and financial aid helps revitalize the development of port industrial complexes based on heavy industry in crisis. At the same time, local authorities are committed to help bring together universities, research and business structures (Quééré, 2005). The territories are developing in giving priority to cooperation networks more or less dense private agents and public agencies in which the local population is sensitized to common issues. Local authorities play a role if they contribute to the networking of different actors by reducing the costs some companies and / or fillers from contracting. The articulation between actors belonging to different institutional networks that organize to carry out the actions that may create or transform institutions to gain legitimacy and to shape the organizational structures and behaviors depending on their interests we present form an institutional agent (Maguire, Hardy and Lawrence, 2004; Nieddu, Garnier-GapihanBrulé, 2012). This concept identifies the characteristics of new local management system which includes the major players and various activities with divergent economic interests. The emergence of institutional agent expense of several conditions: the harmonious encounter at the intersection of public and private spheres, the deregulation of institutional, transgression of all administrative boundaries, geographic, disciplinary, cultural, etc., and cross, performance, competitiveness and the attractiveness of regions.

The appearance of the institutional agent results from the interaction between groups of public and private actors developed locally that influences them through economic and social

regulation. Economic regulation is done by contracts, negotiation on price or arbitration costs. However, social regulation and social policy is based on convention. The latter can be in the form of laws and common standards favoring the establishment of a more sustainable relationship between firms, research centers and public institutions. Institutional agent is to adopt rules and behaviors to exercise powers that enter openness, inclusion, accountability, effectiveness and coherence of the local economy.

### **1.2.2. From decentralization to the territorialisation of innovation**

The reduction of barriers to exchange, access to sources of savings (banks, stock exchange, subsidies) and the introduction of coordination mechanisms based on the rules of competition and cooperation, promotes the emergence of the organization networking and more intensive cooperation between academia and the business community. Therefore, companies can have easier access to more advanced technologies. After economic liberalization, the development of industrial territory based on heavy industry depends on the ability of local actors to conduct and structure of productive linkages, technological, commercial, financial and human resources. The accumulation of knowledge and skills is a necessity for the industry that seeks to impose or to affirm its technological and financial power. Following the analysis of the local conversion resulting new determinants of local development, namely:

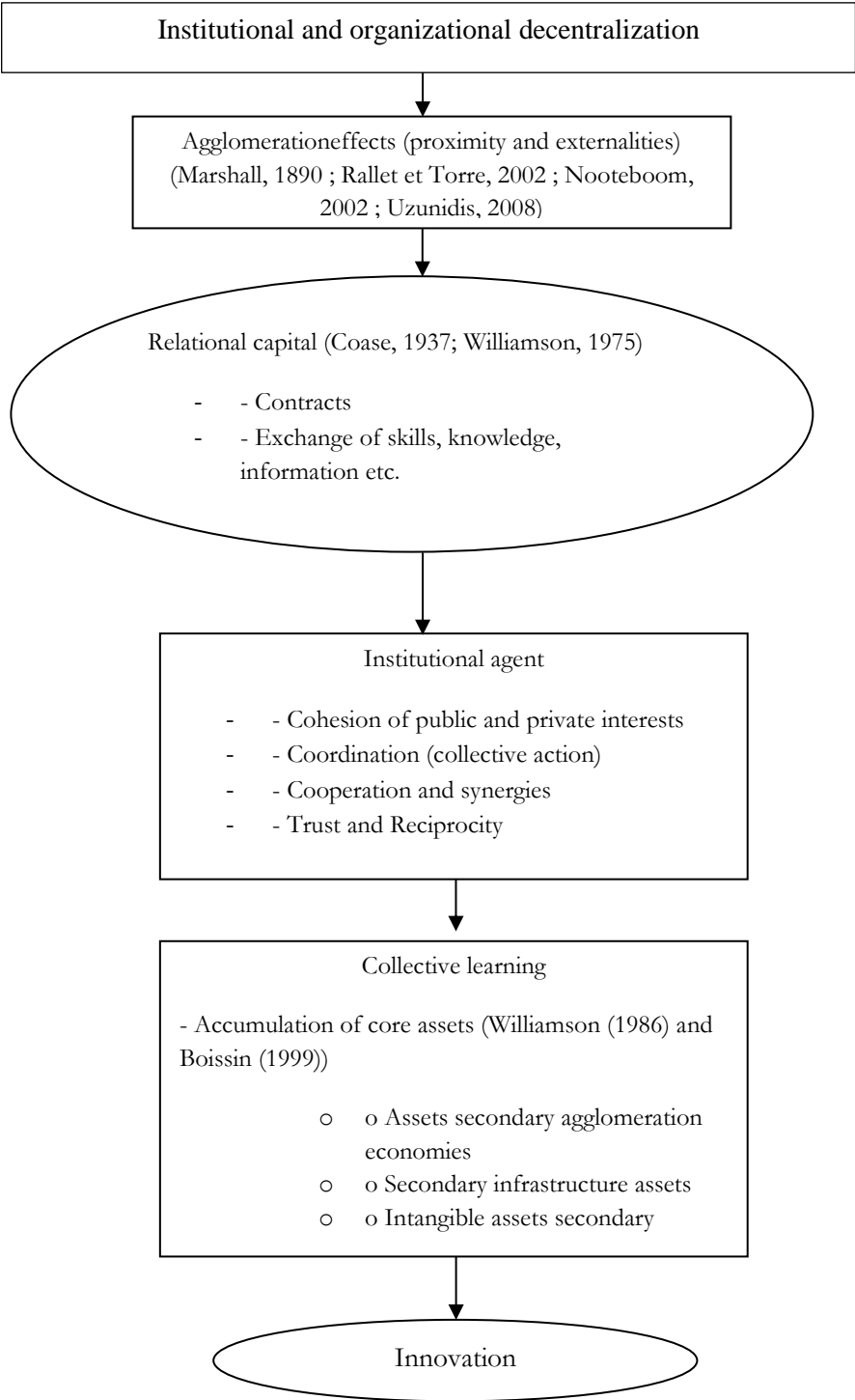
- Territorial determinants related to agglomeration effects proximity and externality;
- Institutional determinants on the institutional framework (rules and regulations) and the role of institutions themselves;
- The organizational determinants related to the capacity of local actors to take collective action;
- Technological determinants related to collective learning that promotes the accumulation of secondary assets related to the skills, knowledge, and information that could cause the development of innovation.

Decentralization encourages agglomeration effects related to proximity relations (geographic, organizational and cognitive) and externalities that contributes to the construction of a "relational capital" as shown in Figure 1. This capital enables local actors to capture to transform and create local specific resources. The strategic choices of firms and government actions contribute to the emergence of an institutional agent composed of network of actors. Its emergence provides a better cohesion between public and private equity, promoting



cooperation and synergy, trust and reciprocity, etc. The emergence of institutional agent leads to collective learning necessary for the accumulation of core assets. The valuation of contractual relations contributes to the development of innovation. It plays a vital role in the revival of industrial areas because of improvements it can bring in the efficiency of industrial processes and / or performance of the products or services.

Figure1 : Territorialisation of the innovation process



Development of skills, knowledge, and expertise locally identified fuels the innovation process that manifests itself by increasing the share of innovative enterprises in the industrial sector, the development of a competitive advantage and a greater variety skills locally. In this context, the coordination that relies heavily on institutions established ensures the performance of a productive organization, while the learning process led to the renewal of the specific advantage (built) to the local economy. This advantage is presented mostly as intangible resources (knowledge, know-how) that the local economy accumulates over time. The figure we described this innovation as a territorialized process.

Use of the concepts developed in the context of evolutionary theory of the firm (Nelson and Winter, 1982; Dosi, Teece and Winter, 1991; Coriat and Weinstein, 1995) and those of the transaction costs theory provides an explanation interesting evolution of the territory (that is to say, the change of principal activity or significant business diversification) (Laperche, Lorek, Uzunidis, 2011). This development is rarely done regularly. This is a process that can know ruptures or bifurcations. The dynamic development of the local economy is the result of the change of the local strategy, processing industries, institutions, knowledge and preferences (Nooteboom, 1992, pp. 282-283) or changing technologies production and the formation of cumulative learning processes (Nelson and Winter, 1982). In this sense, the accumulation of core assets in a local economy contributes to the development of innovation.

## **2. Conversion of industrial port complex of Gdansk**

History will remind us that the Gdansk region was a Hanseatic city that quickly encouraged on the path of industrialization after the Second World War. It played a key role in the local development for the shipbuilding industry and heavy industry. The constitution of a heavy industrial port complex marked an important turning point for the economy of Gdansk. After the liberalization of economic activities, the Gdansk region has gone through a major transformation especially as the new local policies applied in the 1990s, promoted the creation of businesses and improve its scientific and technical potential. The local authority in Gdansk is engaged in the development of this territory, giving priority to the development of innovation.

### **2.1. Constitution and crisis of the industrial port complex in Gdansk**

### **2.1.1. Constitution of the industrial port complex in Gdansk: the effect of a heavy industrial trajectory**

The Gdansk region was chosen by the Polish State to become the capital of the Polish shipbuilding industry. In 1960, the shipbuilding industry occupied 1,965 employees representing 1.7% of total employment in the Voivodship. The share of the shipbuilding industry in the global production of Gdansk's economy increased from 40.5% to 45.3% between 1965 to 1968 years. This increase was primarily generated by the ship repair, which rose from 7.6% to 8.7% over the same period. In 1974, the city of Gdansk contributed to 63.4% due to all ship repairs carried out in Poland. The majority of ships built in the shipyards of Gdansk were for export, 81% in 1974. The majority comes to the socialist countries, or 74.3%.

Naval industries have generated specific effects of industrialization by encouraging the constitution of an industrial port complex in the territory of Gdansk. The Public production unit Centrostal specializing in the steel industry, which produced cast iron, is based in Gdansk in 1946. His work has been completed by the production unit Budimor specializing in the metal industry in 1960. These units with firms specialized in the production of intermediate goods constituted a steel / metallurgy sector in Gdansk. In addition to this sector, Gdansk refineries have developed through the port, and therefore close to it, because their productions were based on imported raw materials. The activity of the port and transport firms has enabled them to provide oil needed for production of oil and refined products and export the finished products. The USSR was the main supplier of oil to the region. The dynamic development of heavy industry generated a benefit in the form of economies of scale resulting in the Gdansk region by continued increases in industrial production and the presence of large production units. Industrial production rose 8.5% to 11.5% average annual growth between the periods 1961-1970 and 1970-1974. Its production base was mainly based on large production units 1,000 more employees. They accounted for 53% of total production units in Gdansk in 1968. The port of Gdansk was oriented industrial and logistics activity associated and accommodating ships (Gaworecki, 1971). In the port of Gdansk was achieved 30% of the transfer of the country.

The Polish State assured and the needs of the industry based in Gdansk through its production units: energy (e.g. construction of a power plant Wybrzerze), in logistics (e.g. access. rail and

maritime transport), raw material supply at a lower price (e.g. the supply of oil to refineries in Gdansk). In the second half of the 1960s was built sulfur export terminal to meet the needs of the institution Fosfory, producer of pesticides. Its activity has been completed by the coal terminal developed in 1974 and the dedicated terminal for oil products in 1975. The state retained the exclusive direction of territorial policies. A large number of production units moved to Gdansk to benefit from external economies generated in this city.

The industrial port complex in Gdansk consisted of three main activities: steel / metallurgy, petrochemical and energy. Around this complex was created a central Industrial Zone (ZIC) North, which in 1965 had a higher position than Warsaw or Bydgoszcz concentrating 4.4% of industrial employment in all industrial areas of Poland. Gdansk was a capital position in this zone representing 60.3% of industrial employment, 42.8% of production units, and 66.5% of industrial production (GUS, 1983). In 1968, production of steel and metallurgical industries accounted for 4.8% of national production. The chemical industry had increased 20%, representing 3.2% of national production. Between 1971 and 1974, the growth of industrial production in the Gdansk region was higher than the country's industrial production (10.1%) and slightly exceeded that of the Gdansk voivodship (11.4%) 11.5 % which allows to present it as one of Poland's growth centers.

### **2.1.2. Crisis of heavy industry in Gdansk**

Development, according to the logic of economies of scale, caused an acceleration of production and concentration of low-skilled workers. On the one hand, the presence of low-skilled labor force has limited the economic, technical and organizational progress of production units in Gdansk. On the other hand, the machines and equipment installed proved insufficient to maintain production in the Gdansk region. The production of the Gdansk shipyards began to stagnate. These industries have eliminated 4.3% (annual average) of industrial jobs between 1974 and 1984. The unemployment rate rose from 4.3% in 1970 to 14% in 1992. Refinery production Gdansk was disrupted by the high cost of oil delivered by the USSR caused by the unfavorable regulation of trade. Local exporters who sell their products in the West found themselves in difficulties due to market saturation. Between 1975 and 1979 the public investment made in Gdansk was divided by three, which resulted in an increase in industrial activity costs and a drop in production (GUS, 1979). The industries of steel and metallurgy were the first affected.

The requirements of the central authorities, however, continued to grow. The workers were exposed to difficulties at work due to the lack of equipment and facilities. They worked under increasing pressure in conditions more precarious. Rising prices for basic commodities in June 1976 sparked a series of revolts which first took place in the Gdansk shipyard. A significant separation between decision-making and implementing bodies was that consensus has been difficult to implement.

The decline in which was driven in the Gdansk region, caused enormous damage that definitely challenged the centrally planned model of development. GDP per capita in the Gdansk region decreased by 107.7 points to 105.4 percentage points between 1986 and 1992. The Gdansk region has faced two major problems:

- A strong presence of heavy industry restructuring pathway leading to the mass dismissal of employees (underemployment);
- A high concentration of industry
- A dominance of low-skilled workers.

## **2.2. Conversion of the industrial port complex of Gdansk**

### **2.2.1. Conversion of the industrial port complex in Gdansk after the institutional transformation**

The introduction of a new institutional framework by the State Council in 1989 has progressively separated the public and private interests in Poland. *Institutional decentralization* has extended the jurisdiction of local authorities, translating, in large part, by the increase in financial resources available to them and greater freedom of design in terms of territory and local planning (the law of 8 March 1990 on territorial autonomy of commons). Between 1990 and 1992, most of the market economy legislation is introduced in Poland, including the law on contracts, corporate law, the law on bankruptcy, antitrust law, the social security act, the new accounting system, the new banking regulation and judicial reform. The institutional framework has recovered to allow firms to freely access information and resources.

The administrative and territorial reform (1993) was made in view of the future accession of Poland to the European Union (entered into force on 1 March 1994) (Zaborowska, 2001).

Sixteen new structures are created to replace the old 49 (the law of 5 June 1998). Voivodship Gdansk is suppressed and its territory is integrated in the Pomeranian Voivodship. The territory of Gdansk, became the capital of the Pomeranian allowing it to remain an important seat of local authorities. The latter offer several tools that help local companies to change their mode of production and consumption, such as subsidies, taxation (progressive tariffs on water), education and finance of research (investments in technological innovations).

On the territory of Gdansk, firms also benefit from higher public aid after the conditions defined in the Special Economic Zone of Pomerania, which was created in 2001 to develop a competitive environment. The Gdansk region becomes a favorable environment to the creation and development of businesses and research partners. Between 1990 and 2011, the rate of creation of enterprises increased by an average rate of 14.6%. This increase is due to service firms whose share rose from 36.4% to 58.2% between 1995 and 2011. Industrial companies accounted for only 10.3% of total establishments in 2011.

Several large industrial facilities in Gdansk decided to outsource part of their activities for the benefit of SMEs and TPE. Their number increased from 56,398 in 2000 to 65,242 firms in 2011 (GUS, 2012). Small private firms were more responsive to market demands. However bigfirms, have not disappeared. Their number decreased by 42% compared to 1968, when establishments with more than 1,000 employees accounted for 53% of the number of establishments in the territory of Gdansk. The industry is currently the largest employer in the region, concentrating 41.2% of total employment in Gdansk thanks to the presence of large production units, including Energia company (11,009 employees in 2011) the Gdansk Shipyard (3 339 employees in 2011). Service firms represented 30.5% of total firms Gdansk in 2011.

Local and regional institutions, which were built during the process of transition in the territory of Gdansk, constitute an important institutional network, including foundations, associations, support centers for entrepreneurs, entrepreneurial incubator, the Baltic Regional Development Agency (1992), the Agency for Regional Development Pomeranian, the Service Centre for Entrepreneurs and others. These institutions contribute to the formation of *relational capital* by providing considerable support to the transformation of local businesses, the development of new economic structures, promotion of local and regional economic

activities and the development of interaction between local actors (network informal). Their functioning depends on public funding and funding from local businesses.

Local actors take initiatives set their own strategies, managing to change the local situation which contributes to the emergence of *institutional agent*. The collective effort of public and private actors in Gdansk contributed to the creation of several institutions dedicated to the development of innovative companies. These institutions have statutes and different functions. Their activity improves the local system primarily provides for advice, financial support, assistance in the search for location and the creation of a relational system. The emergence of institutional agent shows how local actors based on close relationships are part of a collective action approach capable of changing their environment while developing other trading relationships, sharing, collective learning that can improve their skills and move from specific externalities to innovation.

### **2.2.2. The development of innovation in Gdansk: the role of secondary assets**

The accumulation of core assets from the agglomeration economies strengthens cooperation between local Higher Schools and other local actors. The research conducted in the University of Gdansk focused instead on basic research, which is less frequent cooperation with private actors, 17 contracts signed in 2007. Unlike the polytechnic school which works more regularly with private actors such as R&D center of Intel Technology Poland Company and which has filed 154 patents in 2008, the University of Gdansk weakly committed to the promotion of research, with only 3 patents in 2007. The most recent data show that only patent applications filed by the Gdansk Polytechnic school represent 4.2% of all patent applications filed by non-profit organizations in Poland in 2010 (Office Patents Polish, 2010). Infrastructural secondary assets, related to the creation of the technology park and technology transfer center in Gdansk, contribute to the integration of local actors and leading to the development of confidence by facilitating access to research results. The emergence of private research laboratories has intensified exchanges between public and private actors. The development of specialized government laboratories in nanotechnology and biotechnology contributes to the diversification of economic activities. Local authorities in Gdansk have given priority to the development of a knowledge economy at local level, promoting the development of high-tech companies.

Intangible assets are high due to the presence of Higher Schools (6 public and 14 private) and R & D institutes as an important scientific and technical potential. The number of graduates in Gdansk represented 6.4% of graduates in the country in 2011. Gdansk Students can choose from a large number of subjects taught are diversified in parallel with the productive fabric (eg. Biotechnology, IT, Environmental Technology Humanities).The number of teachers increased by 4.2% on average annually between 2003 and 2012. The significant potential, although emerge specialized diplomas in ICT (computer, electronics and telecommunications) and Biotechnology plays an important role. The higher school in Gdansk covers most of the spending on R&D that is 39% in 2007. They concentrated 71.8% of R & D personnel at the local level the same year.

Between 2001 and 2010, the proportion of high-tech firms in the productive fabric of Gdansk increased by 43% in terms of annual averages. These firms represent 4% of all businesses in Gdansk. This increase of the high-tech firms promotes a deep renewal of the local economy. Just twelve years after liberalization, Gdansk region focuses 2,606 high-tech firms. These firms are not developed in a vacuum, but through their network.

In the 2006-2011 period, service companies increased expenses related to innovation by 13.7% in terms of annual averages. This increase is due to approximately 25.5% R & D spending in 2011. The public industrial firms have significantly increased the share of new or significantly improved products in sales of 28.9% to 85.7%, higher than the twice over the same period. The industrial firms, the most polluting, which remained in the territory of Gdansk, change their mode of production through the adoption of eco-technological innovations. These innovations are used primarily to reduce waste (36%) or reduce the flow of materials and energy (36%) (Lorek, 2012).

### **Concluding remarks**

In light of all the results highlighted and theoretical contribution presented in the first part of this article, we have shown that the liberalization of economic activities, which spawned the abrupt change of economic and social structures in Poland was the key factor contributing to the renewal of the productive base in Gdansk. The analysis of the local conversion testifies that this revival was the product of the combination of three factors: first, decentralizing movement that gives the Gdansk region flexibility in relation to the organization and the



definition of objectives, then the new institutions that have supported the development of private actors and finally the accumulation of secondary assets necessary for innovation.

The performance of the Gdansk region is due to the rich and powerful evolutionary interactions between the action of local authorities and business strategy. Its development is based on the ratio of the combined private initiative with the targeted state or territorial action which helped boost its economy favoring the emergence of "industrial atmosphere" conducive to the creation and development of enterprises. The new Gdansk administrative system has set a goal to combine industrial development by improving the quality of the environment and the development of innovation, facilitated by the diversification of the industrial fabric and port of Gdansk. The set of transformations of Gdansk's economy that the growth of the entire region is now ensured by the innovative capacity of local stakeholders, the development of high technology and skill enhancement of companies in traditional sectors. The priority given to the distribution / acquisition of innovation involves the application of new organizational patterns both at the large enterprise level (whose headquarters are in that area) and in terms of relations between economic actors (firms, communities, associations, consumers).

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