

Local industrial development in Algeria

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Abstract

In Algeria, regional development was first realized, in the framework of a planned economy in the 1970s, by local development programs or plans for local equipment focused on creating jobs, industry promotion, and development of rural and Saharan regions but without any decision-making autonomy granted to local authorities. The industry, which is the object of our study, then benefited from economic programs of the local industry (PIL). These were to be the basis for creating a second decentralized state industrial sector. The aim of the PIL was to offset the negative effects of state industrialization process in order to use local resources, ensure the satisfaction of local needs and to decentralize land use policy.

Thus, the industrial areas have been created: nearly 500 business zones and 70 industrial zones spread over a total area of 22,000 hectares. These were, however, spaces of corporate storage. Following the liberalization of the economy since the 1990s, the lack of competitiveness of industrial enterprises has become a major problem, and then an industrial strategy has been developed since 2007. One of the principal objectives of this latter was to create integrated industrial development zones (ZIDI) or clusters. According to the national planning strategy, these ZIDI will be created in areas where there are concentration of businesses, infrastructure availability, proximity to university, research institutions and quality of services. We propose in this study to locate the geographical concentration and specialization of economic activities and especially industry after analysing the Algerian local development dynamics.

Introduction

Local industrial development in Algeria can be divided into two major periods since 1970. The first one was characterized by an administered economy which involved the 1970s and 1980s. During these decades a sectoral approach of the development prevailed at the expense of local development. Then a second period began from the 1990s and lasts until the present days following the liberalization of the economy and therefore the decline in state intervention. Thus the State had to be more concerned with local development in particular to coordinate the private investment. But, have we changed local development dynamics?

There are at least three forms of local development (Charif.M- 2010): endogenous development (Garofoli.G- 1992), the dynamics of public authorities (H.Shmitz-1990) and finally the exogenous dynamics. The first is based on a strong interaction between the political and the social levels, strong relations between actors in the locality, and a high degree of autonomy. The dynamics of government presupposes a centralized local development with state coordination and control. Exogenous dynamics is through the attraction of FDI (Foreign Direct Investment). What kind of local development dynamics is developed in Algeria?

1. Evolution of industrial local development in Algeria

Local development in Algeria has long been marginalized in favor of a sectoral development carried out as part of an administered economy. At independence in 1962, Algeria inherited through the GPRA (Provisional Government of the Algerian Republic), the General Directorate for planning and economic Studies, which was attached in 1963 to the Presidency. This management was the precursor of the Algerian economic planning organization. In 1965,

this structure was integrated into the Ministry of Finance and Planning. It was only until the launch of the first four-year plan (1970-1973) that functional structures of a State Secretariat for planning (SEP) were implemented. The SEP was however suffering from the inferiority of its legal status. Indeed, the weight of its arbitrage resulted from its power of persuasion with respect to sector leaders and the direct intervention of the head of the State (A. Benachenhou-1980). Regionally, there was the creation of the Economic Planning Animation Services (SAPEC) in 1971 to address the lack of local capacity for study. SAPEC also suffered from the inferiority of their legal status because they do not participate to the executive of the "Wilaya" (this is the most important local structure hierarchically), institution to which they belonged. It took until 1979 for them to be raised to the status of DPAT (Departments of Planning and Territorial Development) which sit on the executive of the "Wilaya". These structures had to manage local programs. In 1966 was implemented the first regional program called "the special program of Ouargla". The first regional development programs were known as "special programs of development." From 1970 to 1973 (first four-year plan) special programs were complemented by the local equipment plan (PEL). In 1970, 05 types (PEL) were implemented to consolidate all the actions of local equipment.

- ✓ The first type: (EP) plans for full employment to create permanent and temporary jobs assigned to agricultural work or infrastructure.
- ✓ 2nd kind: (DIL) plans for the development of local industry, they cover the following sectors: crafts, tourism, and hydrotherapy.
- ✓ 3rd kind: (DCF) plans for the development of community facilities. It is about creating community facilities to improve the living conditions of the population, conducting sanitation works.
- ✓ 4th kind: (DER) plans for rural development and agricultural production projects in the traditional sector
- ✓ 5th type: (RECLS) plans for renovations and equipment of the Saharan local communities.

The PEL experienced the same limits as the "special programs" that preceded them.

- They were not based on a national planning policy.
- The design of the PEL experienced shortfalls because of the insufficiency of the technical competence of local authorities. In an attempt to overcome these limitations the SAPEC were created but these services are not effective as they do not attend meetings of the executive of the "Wilaya" as mentioned above.

During the second four-year (1974 to 1977) there have been attempts to remedy these 02 boundaries by introducing (PCD) municipal development plans completed by the (PIL) local industry plan. During the second four-year plan, the "Walis" (they are in charge of the "wilayas" and, regionally, they represent the most important responsible hierarchically) that once were acting simply by delegation of the line Ministry (Interior Ministry) became authorizing officers of the local budget. The "Walis" and the central administration are the true holders of power decision about the implementation of investment projects. However, "local authorities, "Wilayas" and "communes" (or districts, these are the structures at the lowest regional level) are assisted entities as the funding of their equipment is 90% state» (A- Bouzidi 1988- p 63). Industrial zones (ZI) were developed to accommodate industrial investments which were essentially state. They defy logic of decentralization or regionalization. At the end of the second four-year plan 73 ZI were built on an area of 15 000 hectares with no land use plan. The majority of industrial areas was conducted between 1966 and 1977. An industrial zone was to be

composed of at least five industrial enterprises and provide at least 1,000 jobs in an area of 50-2000 hectares.

Regarding the communal development plans (PCD), they can be classified into 03 categories:

1. Communal plans of agrarian revolution in the second four-year plan (agrarian revolution consisted in giving lands to the landless peasant) involved 580 communes.
2. Semi urban PC: involved 70 predominantly urban towns
3. The P.M.U: Urban Modernization Plan, applicable to urban areas for the benefit of local communities where industrial investments of national importance were implemented. They involved 30 municipalities.

Concerning the PIL, it was to be the basis for the creation of a decentralized state industry. Its purpose was to alleviate the negative effects of industrialization process undertaken by public enterprises in terms of job creation, implementation of local resources in order to meet local needs and decentralization of development.

In fact, the period from 1967 to 1977 was dominated by a sectoral approach and state (proactive) economic development of Algeria; it took until the 1980s for the implementation of a territorial approach. Indeed, the first law on spatial planning was enacted in 1987, completed in 2001. The latter was to meet the need to locate the investment at national, regional and local levels hence the creation of the SNAT (National Scheme of Territory Development), SRAT (Regional Scheme of Territory Development) and PAW (Territory Development Plans of the "Wilayas"). SNAT locates the main intellectual, economic, transport and communication infrastructures. Concerning the Regional Scheme on Territory Development, 9 regions have been located by the law of year 2001 : NORTH-CENTRAL, NORTH-EAST, NORTH - WEST, CENTRAL HIGHLANDS, HIGHLANDS EAST, HIGHLANDS WEST, SOUTH EAST, WEST SOUTH and the BIG SOUTH.

This new approach should respond to the regional imbalance that resulted from a sectoral approach focused mainly on industry. In addition, the private sector has been asked to complete the action of the state for non-strategic investments (heavy industry and hydrocarbon industry remained a state monopoly). The State, during the 1980s, decided to focus on the completion of investments in progress. Thus, OSCIP (Body for Monitoring and Coordination of Private Investment) was established in 1983 under the supervision of MPAT (Ministry of Planning and Territory Development). Its goal was only to give a technical approval but the final approval depends on private investment regional Commissions as the commission of private investment of the "wilaya" (CAW) or the (CNI) or National Investment Commission. At the end of the 1980s, especially since the drastic fall of oil price in 1986, all economic indicators were red, especially foreign exchange reserves were equivalent to less than one month of imports in 1989 from which the recourse to the International Monetary Fund (IMF) in the period 1989/ 1998.

During the 1990s, territorial development braked sharply. Indeed, as part of the privatization of public enterprises, which was a measure of the SAP (Structural Adjustment Plan implemented between year 1995 and year 1998), several local companies have been closed aggravating deindustrialization which began in the 1980s. Indeed, before its restructuring, the local public enterprises (EPL) reached the number of 1324 companies spread over the entire national territory and employed nearly 220,000 workers. The restructuring undertaken since 1994 (according to the Finance Law that prepared the privatization of enterprises) resulted in the dissolution of 935 EPL (Herizi.R- 2012). Industrial zones designed to implement the development plan objectives in the context of a planned economy no longer suited the Algerian economy in the process of liberalization under the auspices of the IMF. Thus, new industrial

areas called "new generation areas" are being developed in addition to the renovation of the former ones. These areas are now called "Integrated Industrial Development Zones" or ZIDI or clusters. They were proposed by the MPPI (Ministry of Participation and Promotion of Investment) in 2007 (MPPI, February 2007). They were designed to implement the new industrial strategy based itself on the poles of competitiveness and excellence located by the SNAT 2025 in Sidi Abdellah, Boughzoul, Bouinan for the first poles. Six clusters have been identified by the SNAT 2025, namely:

- ✓ Sidi Abdellah (ICT) Bouinan : food biotechnology and sports medicine
- ✓ Oran, Mostaganem and Sidi Bel Abbés- Tlemcen: organic chemistry, energy and space technology and finally telecommunications
- ✓ Constantine, Annaba, Skikda: mechanical, biotechnology, metallurgy and petrochemistry
- ✓ Setif, Bejaia, Bordj Bou Arreridj, M'sila: plastics, food biotechnology and Productique
- ✓ Medea, Boughzoul, Laghouat: renewable energy, biotechnology, environment, health, agriculture and food, pharmaceutical industry
- ✓ Ouargla Hassi Messaoud, Ghardaia: petrochemistry, Saharan agronomy, biotechnology of arid areas.

Companies specialized in ICT and pharmaceutical industries are already located in Sidi Abdellah city. SNAT (2008) includes the creation of the ZIDI in the guideline 4 "attractiveness and competitiveness of the territories". According to the MPPI, the cluster or ZIDI is an innovative territory with institutional, industrial and research potential that can integrate harmoniously into the international competitiveness. The creation of these ZIDI should be done in areas where there are concentration of companies, availability of infrastructure, proximity to university and research institutions and finally quality of services. The pattern of ZIDI is developed by the MIPI (Ministry of Industry and Investment Promotion established in 2008 in replacement of MPPI). The name changes namely MIPI instead of MPPI (Ministry of Participation and Investment Promotion) to mean that now industrialization is the main goal of the ministry rather than privatization. The MPPI has totally failed to remedy deindustrialization. So the MIPI has selected 29 wilayas for the establishment of 42 multi-purposes and specialized ZIDI. Their implementation is performed, from 5 pilot wilayas, by the ANIREF which is "the National Agency for Intermediation and Regulation of Land" created in 2007. The 5 wilayas are: Annaba, Oran, Sétif, Bordj Bou Arreridj and Blida. The ANIREF is responsible for regulating the land and real estate markets for economic activity. The ANIREF and the ANDI (National Agency for the Development of Investment) are the execution levels of new investment system introduced in 2006 (law on investment). Since 2006, investment skills are organized into three levels:

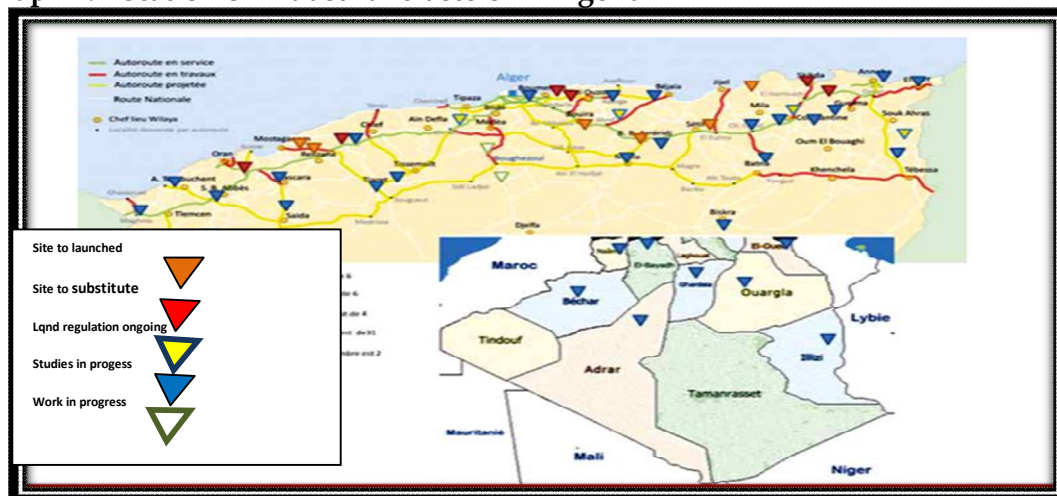
- ✓ The strategic level represented by the CNI (National Investment Council), under the authority and the presidency of the Head of Government, which decides on the investment strategy and consider and adopt projects of national interest and investments of more than 2 billion dinars since 2016 and 1,5 billion dinars before.
- ✓ The political level represented by the MIPI (since 2008, MPPI before) which develops the national investment policy and ensures its implementation through the DGI (General Directorate of Investment)
- ✓ A run level represented by ANIREF and ANDI under the control and direction of the MIPI.

ANDI examines investor records for the granting of benefits (tax exemption ...). ANIREF offers (ordinance 2008) the concession of land for the benefit of investors in ZIDI by the

auction procedure or private sale (or over the counter sale). The private sale is authorized by the "Wali". These transactions involve state properties like the residual assets of dissolved companies, surplus assets of the existing economic public companies. The grant is open to any natural or legal person, Algerian or foreign, enjoying his/her civil rights and providing a fixed address. The concession is granted for 33 years renewable 2 times or a maximum of 99 years. Actions to build ZIDI are the promotion of the industrial networking for the benefit of enterprises in need of innovation, the development of new technologies, the export support, and the upgrading of companies (ANIREF 2010). The financing of ZIDI is done by the "industrial competitiveness promotion fund" which is a special Treasury allocation account (CAS) established in 2000 (finance law of year 2000) which the authorizing officer is the Ministry in charge of the MIPI. It is mainly funded by allocations of the state budget and external financing as MEDA. This is the act for the funding, from the European Union, of some operations such as upgrading of enterprises in the framework of the Euro -Mediterranean Partnership launched in Barcelona in 1996. Monitoring the implementation of the investments is provided by ANIREF and CALPIREF (Assistance Committee for the Location and the Promotion of Investments and land Regulation) which is a structure of the "wilayas". The CALPIREF is about to be deleted in 2016 for its inefficiency.

The cities that appear most competitive and promising for cluster's creation, according to ANIREF, are: Algiers, Annaba, Bejaia, Blida, Constantine, Oran, Sétif, Sidi Bel Abbes, Skikda, Tizi Ouzou, Tlemcen. They almost all already have major assets such as the presence of universities, the proximity of the EAST / WEST highway, a railway network and industrial experience. These favorable regions to clusters are located in the card below.

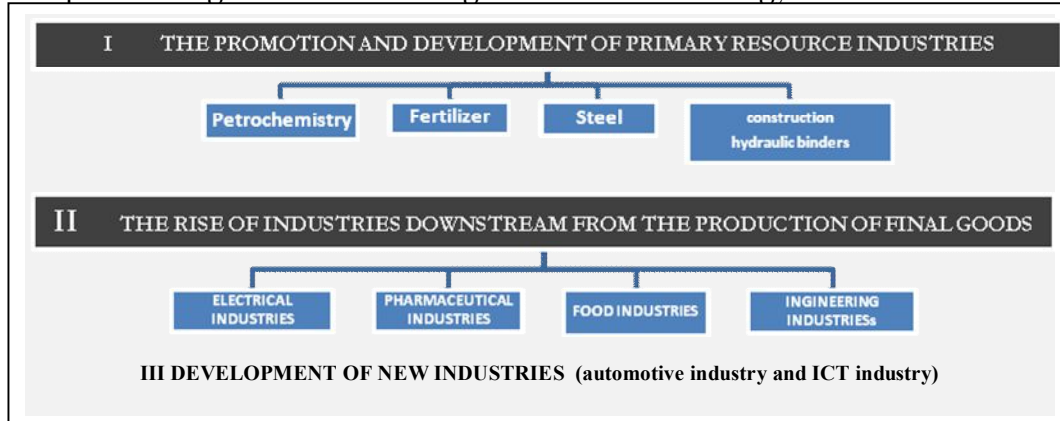
Graph 1: Location of industrial clusters in Algeria



Source: ANIREF (National Agency of intermediation and Land Regulation), Dec. 2015

Pilot clusters are being established in the food industry, more specifically in the industrial tomato (used as a raw material to produce industrial products) in Annaba and Guelma, dates (Biskra and Ghardaia), drinks and milk (Bejaia) in the framework of the DEVED Program of Sustainable Economic Development in cooperation with the German GIZ (Deutsche Gesellschaft für internationale Zusammenarbeit). Similarly, a cluster is being developed in the mechanical industry in Constantine and Rouïba, places where are located SNVI (National Company of Industrial Vehicles) and ENMTP (Public Works Equipment Company). The creation of these clusters is a part of an industrial strategy developed in 2007 that we can present schematically as follows.

Graph 2: The guidelines of the Algerian industrial strategy



Source: MPPI (Ministry of Participations and Investment Promotion): Preliminary draft white paper: "Strategy and industrial development policy" - 2007.

We find that the mechanical and food industries are part of industries that must perform a trace-back upstream. Indeed, the national food industry imports most of its inputs and has a very low export capacity. To remedy this situation consortiums to pool resources in creativity, innovation and expertise, in order to face international competition, are in progress. Existing industrial zones are rather corporate storage, spaces that do not correspond to clusters. We can point among the achievements of ZIDI, the industrial park of Sidi Khettab created in 2012 in Relizane (west of Algiers in the Oran "wilaya"). This industrial zone has a strategic position due to its proximity with the East / West Highway, the presence of a railway and a university and the nearby port of Mostaganem . A project is in progress for the creation of a company which will produce pipelines for transportation of hydrocarbons and water.

We can conclude, regarding the foregoing developments, that Algeria has implemented the dynamics of public authorities for the industrial local growth. This implementation must, however, be improved. We have seen through the above that this development has gradually been integrated into a regional planning approach to remedy the imbalances. These have been aggravated by a sectoral approach and a centralized financing that characterized the 1970s and 1980s. Would the measures taken to the liberalization of the economy since the 1990s, including the creation of ZIDI we have presented above, contribute to solve this industrial regional disequilibrium?

2. Using synthetic indices of Krugman and Herfindahl for measuring the concentration of specialization

Since the publication of the work of P. Krugman on economic geography which he is the founder, the focus is increasingly placed on aspects of homogenization and differentiation of spaces. The use of indicators to measure these aspects is essential.

The indicators we retain are the simple synthetic indexes of Krugman and Herfindahl to measure regional specialization and concentration.

The index of Krugman

The Krugman index is equal to the sum of the differences in absolute value between the industrial structure of an area and the rest of the reference area:

The regional specialization Krugman index is given by:

$$ISKj = \sum_i |s_{ij}^a - s_i|$$

Krugman index of geographic concentration:

$$ICKJ = \sum_i |s_{ij}^e - s_j|$$

i: sector $i = 1 \dots n$

j: Region, $j = 1 \dots m$

S_{ij}^e : The weight of the population occupied in industry i of region j among the total employed population of region j ; i : secteur, $i = 1 \dots n$

j : Région, $j = 1 \dots m$

$$S_{ij}^e = \frac{E_{ij}}{E_j} = \frac{E_{ij}}{\sum_i E_{ij}}$$

E : represents the employed population

S_{ji}^e : The weight of the employed population in the region j i industry among the total employed population in industry i ;

$$S_j = \frac{E_j}{E} = \frac{\sum_i E_{ij}}{\sum_i \sum_j E_{ij}}$$

S_i : The weight of the total employed population in industry i among the employed population;

$$S_i = \frac{E_i}{E} = \frac{\sum_j E_{ij}}{\sum_i \sum_j E_{ij}}$$

S_j : The weight of the total working population of the region j among the employed population;

$$S_j = \frac{E_j}{E} = \frac{\sum_i E_{ij}}{\sum_i \sum_j E_{ij}}$$

The value of the index is between 1 and 0. Closer to 0, the index means that the distribution is homogeneous (specialization and concentration) and therefore there is a relative lack of specificity. Closer to 1, the index of Krugman means there is specialization and regional concentration

The Herfindahl index

It is equal to the sum of the squares of the weight of all individuals. The Herfindahl index of specialization is given by the following formula:

$$IHH_j^s = \sum_i (s_{ji}^e)^2$$

The Herfindahl index of geographical concentration is:

$$IHH_i^e = \sum_j (s_{ji}^e)^2$$

With S_{ij}^e and S_{ji}^e : having the same meaning as above.

The value of the HHI is between $1/n$ and 1 and n is the number of sectors. This index takes the maximum value of 1 when the entire sector workforce is concentrated in a single area and takes the minimum value $1/n$ when the numbers are distributed evenly among the n zones.

Data source

The data are collected from the NSO (National Statistics Office of Algiers), the ANIREF (National Agency for Intermediation and Land Regulation), and the Ministry of Industry. They concern the year 2011 and 48 regions (48 wilayas).

In our case, these regions are divided into sub-regions (according to the survey conducted by the NSO in 2011).

The North- Central includes 10 wilayas (regions): Algiers, Blida, Boumerdes, Tipaza, Bouira, Médéa, Tizi Ouzou, Bejaia, Chlef and Ain Defla.

The North-west has 7 wilayas: Oran, Tlemcen, Mostaganem, Ain Témouchent, Relizane Sidi Bel Abbes and Mascara.

The North- East includes eight wilayas: Annaba, Constantine, Skikda, Jijel, Mila, Souk Ahras, El Tarf and Guelma.

The Highlands includes 14 wilayas : Djelfa, Laghouat, M'Sila, Setif, Batna, Khenchela, Bordj Bouarreridj, Oum El Bouaghi, Tebessa Tiaret, Saida, Tissemsilt, Naama and El Bayadh.

The Big- South includes 9 wilayas: Bechar, Tindouf, Adrar, Ghardaïa, Biskra, El Oued, Ouargla, Tamanrasset and Illizi.

The selected sectors are industry, trade and services. The first concerns us because the Algerian economy is characterized by high deindustrialisation and industry requires more attention from the government, the services have become very important since trade liberalization induced by the Structural Adjustment Plan (SAP).

The Results

The calculation of concentration and specialization indexes for the regions is given by the following table:

	<i>Krugman index of the geographical concentration</i>	<i>Herfindahl index of the geographical concentration</i>
	Industry and trade and services	Industry and trade and services
The North-Central	0,03449195	0,00595892
The North-West	0,01189859	0,00223538
The North-East	0,00827712	0,00052417
The Highlands	0,01032798	0,00091148
The Big- South	0,00815403	0,0002858

The results show a weak value of the indexes, indicating a low concentration of activities, the North Central region being slightly more concentrated than the rest of the territory. On specialization, both indexes Krugman and Herfindahl show a difference between industry and services (including trade) for different regions. Thus, for the industry the North Central and Highlands are more specialized than the rest of the territory while for services the distribution is more homogeneous and regions are almost equally characterized by the distribution of services. These results corroborate those for industry we have obtained in our study (Belkacem, Herizi, Moussi- 2015). Indeed, statistically we detected an industrial concentration in the "wilayas" of Bejaia, Tizi- Ouzou, Algiers, Oran, Batna and Sétif. Algiers, Bejaia and Tizi- Ouzou are located in the NORTH CENTRAL region. Oran is located in the NORTH-WEST region and Sétif, Batna are situated in the HIGHLANDS region. We find that the industry is mainly located in the NORTH CENTRAL region which is the illustration of the regional imbalance in the industrial field.

Krugman Index of regional specialization Herfindahl index for regional specialization:

	<i>Krugman index of the regional specialization</i>		<i>Herfindahl index of the regional specialization</i>	
	Industry	Services and Trade	Industry	Services and Trade
The North-Central	0,14275824	0,05072461	0,65837145	0,5126852

The Nord-West	0,04518076	0,05610429	0,61575896	0,51346015
The North-East	0,0683363	0,03270737	0,62076696	0,50696931
The Highlands	0,11666802	0,06836481	0,63990162	0,51084734
The Big - South	0,0825884	0,05001336	0,62039208	0,50887396

These results are expected because there is a regional imbalance in terms of infrastructure and the North Central region which includes Algiers is better off. In addition, the majority of SMEs (Small and Medium Societies) and SMIs (Small and Medium Industries) and particularly in services comes from public business creation devices and jobs and resources are generally evenly distributed among regions or weighted by the size of the population.

We can conclude that local industrial development in Algeria is initiated, the components of clusters are being formed but their finalization field is late arriving. It faces significant obstacles; the main ones are the deindustrialization of the economy that began during 1980s and worsened by the SAP and also the fact that the Algerian State, to use an expression of G. Schelle (1958), maintains an obsessive relationship with its territory. In other words, financing of industrial territorial development remains highly centralized. Local public services, local taxes and local patrimony are marginal sources of income for regional authorities. Territorial industrial development is then very dependent on the resources and therefore the decisions of the State. Indeed, we have mentioned above, that during the 1970s and the 1980s the local development funding was 90% state (state budget). The local industrial development is now integrated in a territorial approach from the 1990s especially since the creation of the ZIDIs. This new conception has, however, maintained a centralized funding of the local industrial development. In fact, the creation of the ZIDIs is based, as we have presented above, on a special Treasury allocation account (CAS) funded by the state budget. Local authorities have also benefited from many resources intended for them such as the FNI (National Fund of Investment) created by the finance law of year 2009 which attributed to the regions a budget allocation of 48 Billions DA or 1 billion per "Wilaya" but these are still funds from the state budget. Similarly, there exists a mutual fund of local councils (FCCL), but its resources are highly dependent on the state budget such a part of the VAT (tax on added value) collected for the state budget. For example, the VAT collected is shared between the state budget (85%), the FFCL (10%) and the districts (5%) (K. Litamine- 2013- p 45). The consequence of this situation is the persistence of regional industrial imbalance that we have demonstrated in this work. Some regions have real potential for industrial development and could, thanks to the presence of universities, research centers ... become competitive clusters at national and international levels. Studies in this direction could be taken to determine more accurately these integrated areas (using clusters models or spatial econometrics).

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