



## **MASTER THESIS**

### **THE ANALYSIS OF ECONOMIC DEVELOPMENT AND RESILIENCE DYNAMICS OF MEDIUM-SIZED TOWNS**

**A Methodological Approach and a Test on Cases of Montargis and Vendôme in France**

presented by

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## SUMMARY

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Literature on economic development and resilience was mostly concentrated on larger cities and metropolitan regions. In that context, particular interest of researchers has been drawn to city-rankings and typologies based on comparative analysis of performance and identification of the best cases. However, despite their intermediate position and important role within urban hierarchy, medium-sized towns still lack the appropriate attention of researchers. Our contribution to public consideration was a research on dynamics of economic development and resilience factors of medium-sized towns. Our research was aiming to: 1) identify characteristics of medium-sized towns and their modes of economic development; 2) evaluate economic development and resilience strategies.

In that respect, we conducted an analysis of theoretical framework and concepts relating to medium-sized towns, economic development and resilience. Furthermore, we developed a methodology for evaluation of economic and resilience dynamics that was tested on two selected cases: Montargis and Vendôme in France. Lastly, the final outcome of our research was a design of typology that enabled identification of town models within the scale of attractiveness and diversity.

## CONTENTS

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|                                                                                            |    |
|--------------------------------------------------------------------------------------------|----|
| ACKNOWLEDGEMENTS.....                                                                      | 3  |
| SUMMARY .....                                                                              | 5  |
| INTRODUCTION.....                                                                          | 9  |
| FIRST CHAPTER: THEORETICAL FRAMEWORK.....                                                  | 14 |
| 1.1. Outline of Concept and Issues.....                                                    | 14 |
| 1.1.1. Static Approach.....                                                                | 15 |
| 1.1.2. Dynamic Approach.....                                                               | 18 |
| 1.1.3. Towards Typology.....                                                               | 21 |
| 1.2. Identity Shaped by Context.....                                                       | 26 |
| 1.2.1. History Matters.....                                                                | 27 |
| 1.2.2. Geography Matters .....                                                             | 31 |
| 1.3. Dynamics of Economic Development.....                                                 | 34 |
| 1.3.1. Impact of Economies of Agglomeration.....                                           | 35 |
| 1.3.2. Impact of Knowledge Economy and Innovation .....                                    | 37 |
| 1.3.3. Between In-Place and Productive Economy .....                                       | 39 |
| 1.3.4. Between Diversity and Specialization.....                                           | 44 |
| 1.4. Dynamics of Economic Resilience.....                                                  | 49 |
| 1.4.1. Framing the Notion.....                                                             | 50 |
| 1.4.2. Measures of Resilience.....                                                         | 55 |
| SECOND CHAPTER: SUGGESTED METHODOLOGICAL APPROACH .....                                    | 58 |
| 2.1. Step I: Literature Research .....                                                     | 58 |
| 2.2. Step II: System of Indicators .....                                                   | 59 |
| 2.3. Step III: Case Selection.....                                                         | 61 |
| 2.4. Step IV: Quantitative Analysis .....                                                  | 64 |
| 2.5. Step V: Typology Design.....                                                          | 64 |
| 2.6. Step VI: Resilience Scenarios .....                                                   | 66 |
| THIRD CHAPTER: TEST OF THE METHODOLOGY ON TWO FRENCH CASES: MONTARGIS<br>AND VENDÔME ..... | 67 |
| 3.1. Setting the Context: ZE Montargis.....                                                | 67 |
| 3.2. Setting the Context: ZE Vendôme .....                                                 | 72 |
| 3.3. Analysis of Economic Development: ZE Montargis .....                                  | 77 |
| 3.3.1. Demographical Dynamics.....                                                         | 77 |
| 3.3.2. Spatial Dynamics.....                                                               | 79 |
| 3.3.3. Business Dynamics.....                                                              | 83 |

|                                                                                              |     |
|----------------------------------------------------------------------------------------------|-----|
| 3.3.4. Institutional Dynamics .....                                                          | 90  |
| 3.4. Analysis of Economic Development: ZE Vendôme .....                                      | 93  |
| 3.4.1. Demographic dynamics.....                                                             | 93  |
| 3.4.2. Spatial Dynamics.....                                                                 | 95  |
| 4.4.3. Business Dynamics.....                                                                | 99  |
| 3.4.4. Institutional Dynamics .....                                                          | 105 |
| 3.5. Applying Typology: Attractiveness, Diversity, Resilience .....                          | 108 |
| 3.5.1. Type I: Attractiveness to Population & Diversity of Population .....                  | 108 |
| 3.5.2. Type II: Attractiveness of Space & Diversity of Space .....                           | 109 |
| 3.5.3. Type III: Attractiveness to Business & Diversity of Business .....                    | 109 |
| 3.5.4. Type IV: Promoting Attractiveness & promoting Diversity .....                         | 111 |
| 3.5.5. Observing Resilience Trajectories: Resolution Scenarios of Territorial Dilemmas ..... | 112 |
| 3.6. Discussion.....                                                                         | 115 |
| CONCLUSION .....                                                                             | 118 |
| BIBLIOGRAPHY .....                                                                           | 120 |
| LIST OF TABLES .....                                                                         | 134 |
| LIST OF FIGURES .....                                                                        | 136 |





## INTRODUCTION

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Globalization has its own spatial logic. Some places are well situated to benefit from the new transnational, post-industrial, information economy; others less so (Knox and Mayer, 2009). In her works “Cities in a World Economy” (2001) and “A Sociology of Globalisation” (2007) Sassen argued that the process of globalization created new forms of articulation between different geographic regions; while at the same time their roles in the global economy were transformed. Consequently, some regions became export processing zones, others labour reserves or specialized service centres (Sassen, 2001). Such spatial division resulted in two outcomes. Firstly, differences between attractive and unattractive, competitive and uncompetitive territories were greater than ever before (Knox and Mayer, 2009). Secondly, in order to maintain competitiveness, territories constantly needed to adjust their internal structure in response to external technological, economic and demographic changes (Klaesson et al., 2011).

Cities in particular were seen as catalysts and nodal points for global processes to land locally and to facilitate the globalization of countries and regions (Sassen, 2001). On the other hand, cities provided opportunities for complex economic activities that could be brought to global scale and that could assure participation of local actors in global interactions (Huriot and Bourdeau-Lepage, 2009). Moreover, importance of cities in world’s development was articulated very clearly on the occasion of the Informal Ministerial Meeting on Urban Development and Territorial Cohesion in Leipzig, Germany: “Our cities possess unique cultural and architectural qualities, strong forces of social inclusion and exceptional possibilities for economic development. They are centres of knowledge and sources of growth and innovation. At the same time, however, they suffer from demographic problems, social inequality, social exclusion of specific population groups, a lack of affordable and suitable housing, and environmental problems” (Leipzig Charter on Sustainable European Cities, 2007).

Challenges that follow globalization are diverse and they have been rather well covered in literature (Friedmann, 1986, 2002; Benko and Lipietz, 2000; Sassen, 2001, 2007; Scott, 2001; Taylor, 2003). To mention some of them, demographic change raised challenge of ageing population, shrinking cities and intense processes of suburbanisation. The decline of

traditional manufacturing industries has led to job losses, increasing immigration pressures on national welfare systems and more vulnerable labour markets. As effect of social polarisation, many cities faced special segregation of low-income and marginalised groups. Urban sprawl was considered to be one of the main threats to sustainable territorial development that was often connected to costly public services, overexploitation of natural resources, insufficient public transport and city congestion (European Commission, 2011). Along with these global challenges, there was the increasing pressure of competition between cities (Begg, 1999; Pichler-Milanovic, 2005). “This competition takes places on all spatial levels affecting specific fields of development. On the urban level, cities strive after an improvement of their competitiveness and hence, a better positioning in the European or national urban system” (Griffinger et al., 2010: 4).

### **Problem definition**

And while larger cities were considered to be the type of organisation the most capable of global economic changes (Johnson, 2008), medium-sized towns seemed to be left aside and far less a subject of scientific discussion (Bell and Jayne, 2006; Léo and Philippe, 2011). According to ESPON (European Observation Network, Territorial Development and Cohesion), roughly half of the European population is living in small and medium-sized towns. In fact, in 2006, out of 367 million inhabitants in ESPON-countries, about 40% of them were living in one of 16,000 small towns, and 32% in one of 3,100 medium-sized towns. In contrast, 400 larger cities counted 28% of the total population (IRO, 2006).

Overall, smaller towns constitute the most important class of cities in Europe in terms of demography. Likewise, they face the competition with larger metropolitan regions, but also cope with different challenges coming from global economic, social, environmental and technological changes.

### **Research questions**

Three main groups of questions were addressed in our research:

- a. How do medium-sized towns deal with global competition? What is their position in urban hierarchy?
- b. What were crucial factors of their success or decline? Can we draw some models that portray today's medium-sized towns?

- c. And finally, what is the future of medium-sized towns going to be like? Will they resist to external shocks of global changes? Or are they destined to imitate larger cities in order to survive?

To address these questions, we explored medium-sized towns and their development dynamics and resilience. As it will be presented further on, literature suggested that medium-sized towns had specific potentials that allowed them to compete with larger cities. Traffic congestions, high property prices, social segregation, crime and pollution were some of disadvantages of larger cities that made medium-sized towns more attractive to population and investments. Secondly, studies on economic performance of cities showed that size was not the crucial factor of success and growth. On the contrary, their resilience and economic growth seemed to be much more related to innovative and network strategies and building on local comparative advantages, resources, know-how and distinctiveness (Knox and Mayer, 2009).

## **Research aims**

Hence, this research started with two aims as follows:

- a. Identification of characteristics of medium-sized towns and their modes of economic development:**

Identifying features of medium-sized towns that differentiate them from larger or smaller urban units; indentifying their position and role in urban hierarchy; indentifying characteristics of economic development and strategies to face challenges of competition and global economy.

- b. Evaluation of economic development and resilience strategies:**

Evaluation of attractiveness and diversity of economic development; evaluation of economic resilience to external shocks; creation of typology based on characteristics of development; assessment of sustainability of modus of economic development and capacities to respond to global challenges.

## **Research methodology**

In line with above mentioned aims, our research methodology was based on six main stages. Firstly, we explored literature relating to three subjects: medium-sized towns, economic

development and economic resilience. Secondly, we recreated a system of indicators of economic development dynamics settled within the framework of two dimensions: degree of attractiveness and degree of diversity.<sup>1</sup> Thirdly, selection of cases was limited to two medium-sized towns in Centre region in France. Fourthly, we carried out quantitative analysis of dynamics of economic development of two medium-sized towns. The analysis was based on a system of indicators and encompassed several segments: a) analysis of historical and geographical context; b) analysis of demographical dynamics; c) analysis of spatial dynamics; d) analysis of business dynamics; and e) analysis of institutional dynamics. Fifthly, town typology was proposed based on their degree of attractiveness and degree of diversity. Sixthly, based on the results of the analysis and typology of towns, we explored approaches of selected towns to solving territorial dilemmas of economic resilience.

Selection of two cases was based on five conditions. First, population size threshold of medium-sized towns needed to correspond to French context (20,000 – 200,000 inhabitants); second, cases had administrative status of municipalities; third, cases met morphological condition of continuity of the built-up area; fourth, existence of labour market and daily commuting flows; and fifth pragmatic condition of availability of data and location in Centre region.

## **Research structure**

Therefore, our research will be presented within three main parts. The first chapter will give overview of theoretical framework by discussing different approaches of conceptualizing medium-sized towns. Moreover, we will explore main characteristics of economic dynamics and economic resilience with a special focus on development of medium-sized towns. We will argue the importance of contextual setting that shapes development and resilience of towns. Also, we will study the impact of economies of agglomeration and knowledge economy on towns, as well as outcome of strategic orientation towards in-place economy or productive economy, diversity or specialization. Second chapter will present our methodological approach to analyse dynamics of economic development and resilience that is

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<sup>1</sup> System of indicators for analysis of dynamics of economic development of small and medium-sized towns was already created by a working group of Ecole Polytechnique in Tours, France (see: Demazière, C. and Hamdouch, A. (2012), *Méthodes d'analyse des dynamiques de développement des villes petites et moyennes*. Ecole Polytechnique, Tours). For the purpose of this research, the system was adapted to fit the typology of medium-sized towns as was presented in further text.

based on a system of indicators. Further on, we will test our methodology on selected cases. Lastly, based on results of economic performance, we will illustrate the application of town typology on selected cases of Montargis and Vendôme.

Economy and cities have been sources for diverse theoretical explorations, especially in recent years. The recognition of cities as engines of local development within globalized economy, encouraged not only planners and policy actors to rethink dynamics of cities, but also, it demanded an engagement of broader expertise such as economists, sociologist, and geographers. Complexity of city development can be observed in growing number of studies, articles, and reports worldwide; and each has been providing an insight to some of important dimensions of economic development of cities.

For the purpose of this research, we limited our theoretical framework to main characteristics of economy towns: economies of agglomeration, strategies of local economic development and economic resilience.

Accordingly, the first part of this chapter explored static and dynamic approaches towards concept of medium-sized towns with particular reference to French context. The aim was to understand the variety of criteria across literature that observed the distinction between different urban scales and hierarchy. The following part of the chapter presented an overview of literature on contextual and economic dynamics of medium-sized towns. In particular, on the importance of geographical and historical specificities of territory that determined local development. Furthermore, we referred to literature studying main economic processes that shape towns, with a special focus on specialisation, attractiveness and resilience.

### 1.1. OUTLINE OF CONCEPT AND ISSUES

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“As is the case with most generic terms, everybody knows what small and medium sized towns are – until one is asked to define it precisely” (OIR, 2006: 27). In general, medium-sized towns are seen either as less developed, declining cities that face difficulties in coping with new economic dynamics; or as places of ideal balance between urban and rural ambience (OIR, 2006). The particular difficulty lays in the fact that different groups of

researchers such as geographers, sociologists and economists are using one definition, while political-administrative system another one.

In the following text we presented overview of definitions medium-sized towns existing in scientific literature and national policy documents. We observed two different streams to the concept and relating issues: static and dynamic approaches. The first one was considering population size and thresholds as basic criteria for distinction, while the last one broadened the scope by adding functional, morphological and socio-economic criteria to definition of concept. Finally, we presented some examples typologies of medium-sized towns that were result of different mentioned approaches to city analysis.

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#### 1.1.1. STATIC APPROACH

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Scientific literature established the size of population as the basic quantitative criterion in defining medium-sized town. However, it recognized that exclusive usage of size is not enough in dealing with urban issues (Demazière, 2011b). On the contrary, authors would agree that the criterion of population size might serve only to distinguish large metropolitan conurbations from other urban systems of less importance and more limited in space (Veron, 2006).

Some researchers used threshold values to distinguish large urban areas, medium and small towns and rural areas. Such an approach resulted in variety of thresholds depending upon characteristics of countries and their total size of population of studied cities. For instance, European authors claimed medium-sized town to count 20,000 to 200,000 inhabitants, although there were variations around upper and bottom limits: 20,000 – 100,000 (De Esteban Alonso and Lopez, 1989; Santamaria, 2010; Taulelle and Vanier, 2010); 50,000 – 100,000 (Vinuesa Angulo, 1989; Thompson 1995); 50,000 - 200,000 (Boyer, 2003). The ESPON<sup>2</sup> group of researchers used two thresholds for classification of medium-sized towns: 50,000 – 100,000 for larger medium-sized towns; and 20,000 – 50,000 for smaller medium-sized towns (IRO, 2006). Authors from northern America and Australia used thresholds closed to European ones: 50,000 – 500,000 (Henderson, 1997; Seasons, 2005; Simard and Simard, 2005), 98,000 – 170,000 (Vey and Forman, 2002); 50,000 – 250,000 (Clancey,

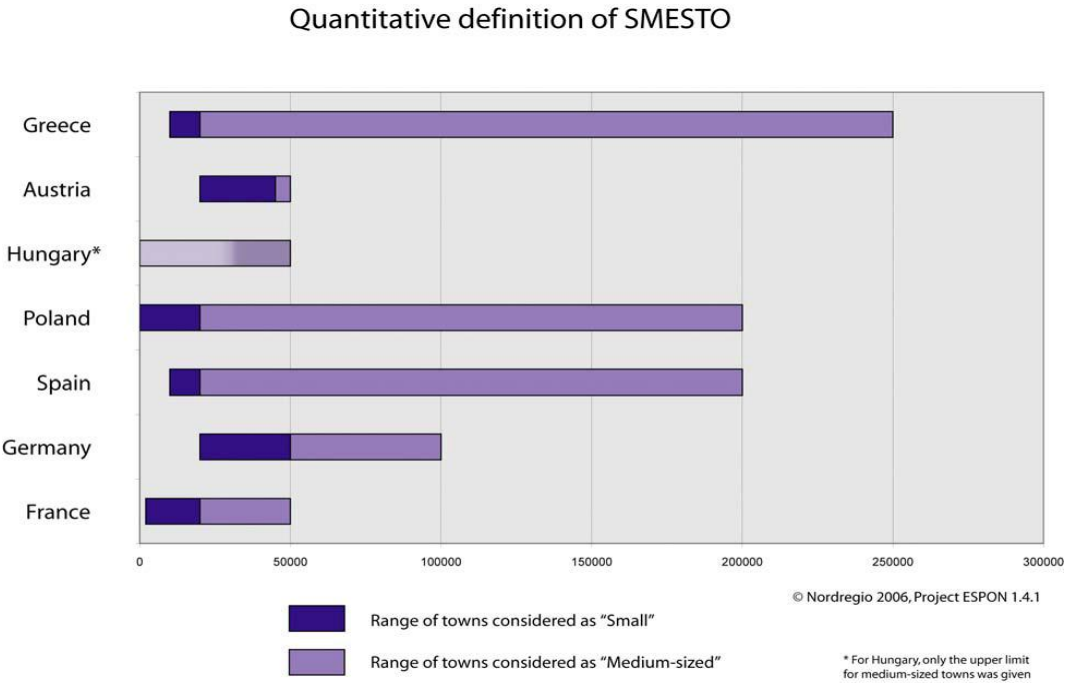
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<sup>2</sup> European Observation Network, Territorial Development and Cohesion.

2004); 20,000 – 200,000 (Bruneau, 2000); or 20,000 – 100,000 (Bell and Jayne, 2006). Nevertheless, urban researchers from southern America defined relatively higher threshold for their medium-sized towns: 50,000 – 1 million (Rodriguez and Villa, 1998); and 100,000 – 1 million (Sanchez and Propin, 2001; Pulido, 2004).

These variations point out the fact that a wider national context needs to be taken into consideration when approaching medium-sized towns. “A city of 20,000 inhabitants in Norway, in northern Scotland or in Portugal can play functions within its territory that corresponds to those usually found in cities with more than 100,000 inhabitants in Germany or in France” (Carrière, 2008: 16). The main logic follows the thought that a medium-sized town of 20,000 inhabitants can play more important role in Hungary than a town of the same size in Italy; as much as a large city in France with of about 300,000 inhabitants is considered small in China or Mexico. Following figure (Figure 01) shows how various thresholds of population size were used for definition of small and medium-sized towns in different European countries.

Figure 01: Thresholds used for the definition of small and medium-sized towns in a selection of European countries



Source: Data gathered via the questionnaire sent to the ESPON 1.4.1. project's national experts

(Source: IRO, 2006)



Given these facts, it seems that the concept of medium-sized town comes directly from practitioners, elected officials and city managers, planners and promoters of development policies (De Roo, 2007) who identified medium-sized towns as a category facing challenges different from those in front of smaller or larger cities (Léo et al., 2010). Likewise, medium-sized town is more a category of urban planning policies, and less a stabilized concept in human geography or regional economy (Behar, 2009).

In France, it is generally considered that small towns count from 3,000 to 20,000 while medium-sized towns from 20,000 to 100,000 inhabitants (Taulelle, 2010). This threshold was adopted by Federation of Mayors of Medium-sized Towns (FMVM), while Inter-ministerial Delegation of Territory and Regional Attractiveness (DATAR) used a broader threshold for medium-sized towns: 30,000 - 200,000 inhabitants. However, since the 1990-s National Institute of Statistics and Economic Studies (INSEE) has been using a different notion when referring to cities: 1) urban unit (fr. *unité urbaine*) corresponds to basic definition of a town. It took the continuity of build-up area and number of inhabitants as main criteria. Thus, urban unit can be a municipality or a group of municipalities that has an area of continuous built-up area (no break of more than 200 meters between two buildings) with at least 2,000 inhabitants; 2) urban area (fr. *aire urbaine*) was defined as a group of municipalities consisting of an urban centre of more than 10,000 jobs, and rural municipalities with at least 40% of the resident population works in the centre of in communes attracted to it. They are classified as *small* with 500-5,000 jobs and *medium* with 5,000-10,000 jobs (INSEE, 2012). The second definition combined urban and rural and took mainly into account a commuting of working population given the fact that 40% of active population within this zone worked in the main urban pole (Taulelle, 2010). In France, zoning of territories (fr. *zonage*) enables researchers to consider different urban scales and parameters, which are useful for targeted urban analysis. Therefore, medium-sized towns can be also approached as employment zones (fr. *zones d'emplois*), living areas (fr. *bassin de vie*) or group of municipalities (fr. *EPCI*). Each of these scales delimited differently population size and by this challenged the meaning of existence of size thresholds. “The question of the threshold leads to an impasse. It has the merit of seeking to identify the subject of the examination, but due to a fluctuating environment, any attempts to frame [...] leads immediately to challenge its limits” (Taulelle, 2010: 2).

Moreover to French context, during 1960-s and 1970-s, medium-sized towns were in focus of public policies due to their growth in population and as an attempt to depolarize the territory

through the network of eight equilibrium cities. Thus in 1971, about 200 municipalities of medium size between 20,000 and 100,000 inhabitants were included in public renovation programs to “strengthen the urban fabric of France and to develop services and facilities in these towns” (Taulelle, 2010: 3). During the 1990-s and 2000-s, university policy, development of productive systems and networking of cities encouraged medium-sized towns to strengthen their position against larger cities (Santamaria, 2010).

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### 1.1.2. DYNAMIC APPROACH

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For the aforementioned reasons of territorial contexts and scales in conceptualisation of medium-sized towns, researchers proposed additional criteria for qualitative approach to urban issues. Saint-Julien (2011) saw no point in using determinants such as small or medium at all. “Besides the statistical parameter, the concept needs a model that combines economic, social and territorial functions in these *in-between towns*“ (fr. *villes d’entre-deux*) (Saint-Julien, 2011: 44). The size of cities will always be used as a basic indicator (Maturana and Terra, 2010), but very often additional criteria are associated, such as urban density, surface, continuity of the built-up area or migration home-work of the population (Veron, 2006).

As seen by many authors, cities are places where different functions (economic, cultural, political and administrative) are gathered and shaped in a way that makes them important for the rest of territory (Julien and Pumain, 1996; Leo and Philippe, 1998; Beaverstock and al., 1999; Rosenblat and Cécille, 2003; Bolay and Rabinovich, 2004; Zuliani, 2004; Taulelle, 2010; Nadou, 2010; Demazière, 2011a). In literature, qualitative criteria in distinction of concept have been rather numerous: demography, functions, urban equipment, connectivity and accessibility (Carrière, 2008); services, equipment, activities, territorial occupation (Bolay and Rabinovich, 2004); or centrality (Demazière, 2011b). DATAR as well defined a medium-sized town as more than just an intermediate area. In fact “medium-sized towns play intermediary roles between various urban levels, between sociability and openness to the global, between heritage and new technology, between residential economy and the productive economy” (De Roo, 2007: 4).

Some authors remarked urban functions to be the most important parameters since they were related to size and proximity (Taulelle, 2010; Santamaria, 2010; Nadou, 2010; Demazière, 2011a). Cities bigger in size have more enlarged urban functions compared to smaller towns.

On the other hand, functions of smaller towns depend on proximity to other more important ones that might limit their influence on the territory (Taulelle, 2010). Therefore, medium-size towns would be defined as “intermediate functional centres” (IRO, 2006: 59), which would be in line with the Central Place Theory of Christaller (1933). The Theory highlighted a relation between demographic size of a city and functions gathered in it. Each city supplies a particular types of goods (basic goods in smaller towns and specialised goods in larger cities), thus forming levels of hierarchy. That particular degree of centrality ranks a city to be medium-sized or small in urban hierarchy by considering proximity to urban functions (Christaller, 1933). Today, Christaller’s Theory is considered to be limited since the lifestyle and mobility opportunities have changed. It was concluded that consumers of higher economic status tend to be more mobile and do not use centres providing only lower order of goods. Also, having the trend of population moving away from cities to live in smaller ones, development of transport sector and new ways of working (i.e. online), give a new perspective to medium-sized towns within urban hierarchy (IRO, 2006).

Another perspective comes from analysing medium-sized towns within the territorial context (fr. *plaques territoriales*) (IRO, 2006; De Roo, 2007; Nadou, 2010). The first type of context is the location within or at the fringe of a large agglomeration. This situation causes overlaps of agglomeration and medium-sized town’s area by making the latter a peri-urban town. The second type is the situation where medium-sized town is part of a network with small or other medium-sized towns. They are independent from larger metropolitan city and share their social and economical capacities. The last territorial context that defines medium-sized towns is the one where city is a pole in rural areas. This is usually the case of small towns acting as services centres in the context of rural economy or agricultural business (De Roo, 2007). In addition to relation of medium-sized town against large city, due to increasing traffic speed and expanding communication networks, many medium-sized towns have been taken over by metropolises in a process of urban sprawl. On the other hand, some of them face urban decline if being off the main transport axis for the reason of global search for the cheapest production location at the proximity to large cities (Knox and Mayer, 2010). ESPON put this phenomenon briefly: “Agglomerations on the one hand need medium-sized towns in order to compete on an international scale since their competitiveness is based on having efficient network. On the other hand, medium-sized towns need large cities since they are parts of connected urban system; but they also depend on their rural hinterlands” (IRO, 2006: 95). In fact, “medium-sized towns have the opportunity to reevaluate rural areas and preset the golden

middle in spatial planning, combining advantages of metropolises and rural areas” (IRO, 2006: 96).

Moreover to above mentioned advantages, the shift towards new model of economic growth ignored the size as a factor, but emphasized flexibility and integration in urban networks. This process of globalization gave medium-sized towns an opportunity to reinvent themselves and gain a new significance in global economy (Sassen, 2009). Literature provided various studies referring to factors of economic growth (Jacobs, 1961; Roberts and Sykes, 2000; Pecqueur, 2000; Teisserenc, 2002; Florida, 2002; Magnaghi, 2003; De Propriis, 2005; Sassen, 2009; Knox and Mayer, 2009; Demazière, 2011; Hamdouch, 2011-2012; Demazière and Hamdouch, 2012). Authors indicated the importance of both exogenous and endogenous development. The first exogenous development was based on attracting companies and residents through policies and overall investment climate. Medium-sized towns in that context are seen as affordable places with lowest costs for business investment. The second endogenous development was building on local comparative advantages, local resources, local products and local distinctiveness (Knox and Mayer, 2010). We explored more on these factors of economic growth in following chapters.

The main focus of dynamic approach to medium-sized towns seemed to be on network, relations with its territory, urban hierarchy and socio-economical intermediation. For Bellet and Llop (2004) medium-sized towns, as being in-between two extremes (large cities and small towns), play intermediate role on their territory (Bellet and Llop, 2004). They have several functions: 1) supply function means the provision of a region’s population with necessary goods and services; 2) housing function and building grounds; 3) labour market function to keep small structures and renew local economic entities; and 4) cultural function that includes leisure and tourism (IRO, 2006). Medium-sized towns are producers of dynamics, competition and have the capacities to create networks on local, national and international levels (Bellet and Llop, 2004). Furthermore, they have a great potential for development of creativity and innovation that can reorganize relations between rural and urban worlds (Christopherson, 2004) and can become innovative cities (Mendez and Mercier, 2006). The potential of medium-sized towns to generate growth and equilibrium between large metropolitan centre and rural areas within processes of decentralisation, enforcement of service sector and local policies and actors are highlighted in literature (Ganau and Vilagrasa, 2003; Zuliani, 2004; Simmard and Ouellet, 2009).

To summarize this part on distinction criteria with some conclusions given by ESPON: there are three main criteria used in defining and delimiting urban areas: 1) administrative criterion based on legal and administrative status of municipalities where towns are used by the state to organize a country; 2) morphological criterion used indicators such as continuity of the built-up area, number of inhabitants, proportion of urban settlements in order to define a town as a physical object; and 3) functional criterion corresponded to town as an economic and social entity, so it includes indicators such as daily community flows, or interactions between territories (IRO, 2006).

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### 1.1.3. TOWARDS TYPOLOGY

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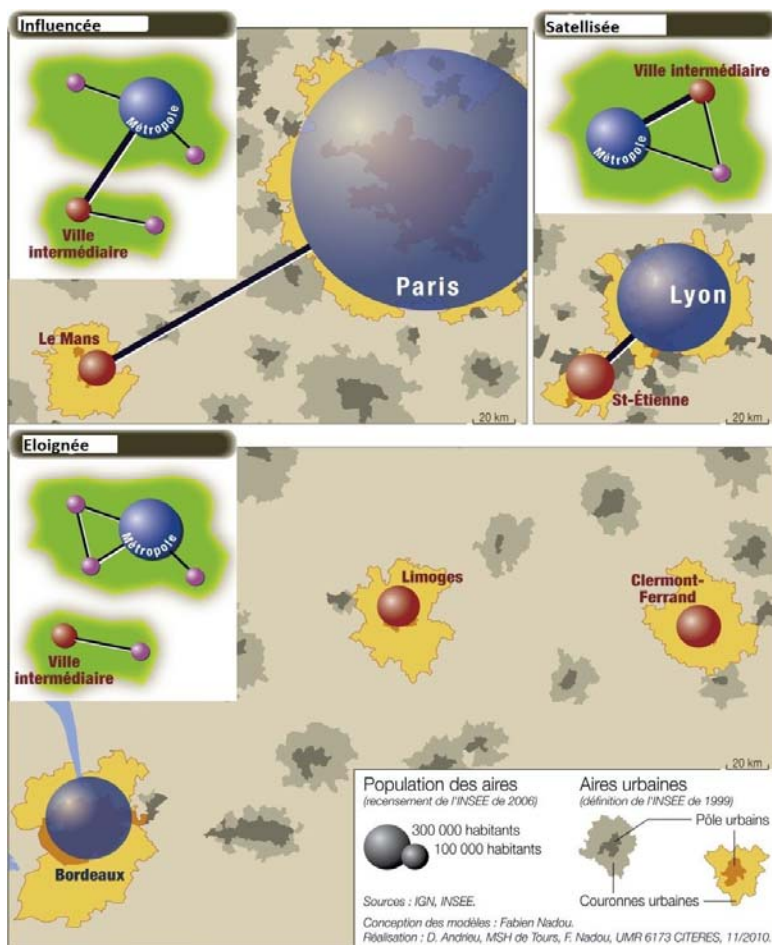
In spite of lack of continuous study of medium-sized towns' typologies, there are researches which are more or less in indirect relation (IRO, 2006). In order to systemize various concepts of cities and their dynamics, literature defined some typologies that reflect diversity of urban issues. According to ESPON, studies on medium-sized towns are usually grouped around three main categories of analysis: a) the first is considering spatial position of cities. Thus, medium-sized towns can be agglomerated, networked or isolated; b) the second typology is based on socio-economic performance in which towns are categorized into dynamic, declining, restructuring or potentially developing towns; and c) the last category is related to governance and administrative units that use national criteria in defining towns (IRO, 2006).

The complexity of urban analysis is even harder to unfold knowing that the question of scale is discussable and difficult to identify. There is no common agreement among authors on whether the analysis should be conducted on micro or macro level. Micro level seems to overlook the importance of wider territory and global processes; while on the other hand, a macro level tends to miss small local particularities and falls into dangerous generalizations (IRO, 2006). In this chapter we gave overview of some typologies in order to demonstrate the place of medium-sized towns in urban classifications.

In France, the spatial classification of medium-sized towns was presented by DATAR in 2007 (De Roo, 2007). French authors generally refer to that particular typology, i.e. authors participating on the conference "Small and Medium-Sized Cities, a New View" in 2010 in Tours (Santamaria, 2010; Leger, 2010; Nadou, 2010). The above mentioned typology

identified three types of medium-sized towns (Figure 02): 1) towns close to large areas that kept their autonomy and maintained the exchange with other surrounding towns, thus creating a network that prospers due to proximity of nearby dominant city (i.e. Blois, Albi or Bourges in France); 2) towns with industrial background being on the outskirts of the larger city. They provide to the whole system with manpower, infrastructure and equipment (i.e. Dreux, Vierzon or Chatellerault in France); and 3) towns with strong administrations that are rather resistant and turned to their local particularity (i.e. Arles, Rochefort or Orange in France).

Figure 02: Example of spatial typology of medium-sized towns



(Source: Nadou, 2010)

Likewise, an example of socio-economic typology came from Furdell and Wolman (2006) that identified: 1) towns with population of at least 50,000 that were the primary city in a metropolitan area; 2) towns with population of at least 50% of the population of the primary city in their metropolitan area, and 3) cities with population of at least 150,000 regardless of whether they were the primary city in a metropolitan area. Based on two additional variables – city economic conditions (analysing employment, annual wages and establishment) and residential economic wellbeing (household income, unemployment rate, poverty rate, labour force participation rate and per capita income), towns were categorized into two types. The first type is a town with strong, moderate or weak residential economic wellbeing; and the second one is a town with strong, moderate or weak economic conditions (Furdell and Wolman, 2006).

An interesting typology was proposed by Hildreth (2006) in his research of economic role and performance of English medium-sized towns: 1) industrial city; 2) gateway city; 3) heritage or tourism city; 4) university knowledge city; 5) city in a capital city or large city-region; and 6) regional services city (Hildreth, 2006).

The attempt to classify towns within certain typology is under its way across the Atlantic as well. Pulido (2006) specified Venezuelan cities within urban hierarchy as large cities; incomplete city-metropolises; intermediate cities; cities in transition; and medium-sized towns. The three basic characteristics used for such typology were exchange capacity (capacity to integrate into global networks); autonomy (capacity to produce and manage their financial resources); and leadership (capacity to polarize adjacent spaces) (Pulido, 2006). Moreover to Latin American approaches, authors Bolay and Rabinovich (2004) identified portrayed three levels of intermediation: 1) local and regional scale: this level is marked by relations between the city and its environment. Here it can be observed production sector, agriculture development, small industries and services linking rural and urban economies, as well as land development and politico-institutional spheres; 2) national scale: this level puts an accent on integration of city into urban networks, contacts with other parts of the country and dependence of local administration on central government; and 3) international scale: level that estimates the relationship between city with the world beyond national borders, the international role and proactive approach to globalization, and position of the city on the world map (Table 01) (Bolay and Rabinovich, 2004).



Table 01: Typologies of cities according to their urban functions

|           |                                         |                                                                                                                                                                                                                                                             |
|-----------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>  | <b>Regional market</b>                  | The city is a driving force for the production and exchange of goods and services at the level of the local and immediate regional economy.                                                                                                                 |
| <b>2</b>  | <b>Service centre</b>                   | The city offers a number of public services – healthcare, secondary and tertiary educational institutions – as well as private services – banks, businesses, leisure and information centres – for both the urban community and the surrounding population. |
| <b>3</b>  | <b>Regional capital</b>                 | The city hosts various provincial and/or national political and administrative institutions for the territory in which it lies.                                                                                                                             |
| <b>4</b>  | <b>Economic location</b>                | The city develops a concentrated national and international strategy as a large-scale industrial and trade centre, by making the necessary infrastructural investment and facilitating the action of economic agents.                                       |
| <b>5</b>  | <b>Tourist centre</b>                   | The city makes use of its comparative advantages – location, natural resources, historic legacy, culture, etc. – to promote activities linked directly to domestic and/or international tourism.                                                            |
| <b>6</b>  | <b>Communication hub</b>                | Owing to its strategic location and development of relevant infrastructure, the city acts as a platform for the exchange of persons, goods and information.                                                                                                 |
| <b>7</b>  | <b>Metropolitan periphery</b>           | The growth and development of the city depends directly on its integration within a metropolitan area with its underlying national and international dynamics.                                                                                              |
| <b>8</b>  | <b>National/international interface</b> | The city's geographic location and its development strategy endow it with a role shaped primarily by ever more international exchange mechanisms.                                                                                                           |
| <b>9</b>  | <b>Cities in a con-urban area</b>       | The city's development depends on its integration within an agglomeration of several urban municipalities linked together at various levels of the urban framework, with each municipality retaining its own identity.                                      |
| <b>10</b> | <b>Association of a group of towns</b>  | Several small towns in a preponderantly rural region constitute a group and influence each other.                                                                                                                                                           |
| <b>11</b> | <b>Urban region</b>                     | Settled areas within diffuse urban zones.                                                                                                                                                                                                                   |

(Source: Bolay and Rabinovich, 2004)

Besides works of urban researchers, major global organizations such as United Nations, World Bank or OECD seemed to lack the interest in more detailed analysis of towns. In fact, those organizations do not provide detailed research on city hierarchy. OECD made its first classification of urban-rural typology during 1990-s categorizing TL3 regions as predominantly urban, intermediate and predominantly rural. In 2009, that classification was updated by the criterion of accessibility to urban centres (remoteness). In other words,



medium-sized towns were simply defined as intermediate regions with a certain degree of remoteness (OECD, 2006).

Nevertheless, European Union through creation of territorial cohesion policy recognized cities to play a central role (AESOP, 2012). For that purpose, a distinction of European territories has been set. European Commission in the “5<sup>th</sup> Report on Economic, Social and Territorial Cohesion” developed a nomenclature of territorial units for statistics, called NUTS 1, 2, 3. The classification was combined with a distinction between areas located close to city centre and areas that are remote. Thus, European Commission categorized NUT3 regions into five categories: 1) predominantly urban regions; 2) intermediate regions, close to a city; 3) intermediate, remote regions; 4) predominantly rural regions, close to a city; and 5) predominantly rural, remote regions. Here, medium-sized towns were defined either as close intermediate regions, or remote intermediate regions (EC, 2010).

In addition to European typologies, ESPON (2009) proposed four urban typologies of medium-sized towns, each of which was considering different aspect: 1) morphological urban area (MUA) depicts the continuity of the built-up space with a defined level of density. Cities are classified as being inside MUA or not; and there is no specific view on medium-sized towns; 2) degree of urbanization that used the criterion of population density. Medium-sized towns were identify as in-between highly dense and less dense areas; 3) functional urban areas (FUA) can be described by its labour market basin and by the mobility patterns of commuters, and includes the wider urban system of nearby towns and villages that are highly economically and socially dependent on a major urban centre. It made a distinction between metropolis, large, medium and small town; and 4) city types based on various socio-economic parameters of which the most important ones were size, economic structure, economic performance and key drivers of competitiveness. Thus, that last typology identified 13 types of towns: a) knowledge hubs; b) established capitals; c) re-invented capitals; d) national service hubs; e) transformation poles; f) gateways; g) modern industrial centres; h) research centres; i) visitor centres; j) de-industrialized cities; k) regional market centres; l) regional public centres; and m) satellite towns (ESPON, 2009).

To conclude, due to complexity of concept and issues involving cities, there is no common approach among researchers or policy creators in their distinction of cities. It seems to us that definition, scale and questions around medium-sized towns depend on the purpose of analysis. Hence, some authors would be using on morphological criterion in other explore

cities as physical objects in the space; other researchers interested more in cities as places of diverse interactions of people, ideas and goods, would focus on socio-economic dynamics and/or urban governance policies.

## 1.2. IDENTITY SHAPED BY CONTEXT

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In recent years, literature examining importance of historic events on economic development has emerged (Nunn, 2009). “It has moved beyond simply estimating reduced-form causal relationships between historic events and economic development. For many studies, the goal is also to explain exactly how and why specific historic events can continue to matter today” (Nunn, 2009: 66). The impact of historic events was illustrated by authors through multiple equilibrium, when historic events have permanent effects if they cause a shift from one equilibrium to another (Murphy et al.; 1993; Acemoglu, 1995; Mehlum et al. 2003). Other authors studied impacts on economic development in the long run in cases when historic events change so called *deep determinants* such as local institutions (Acemoglu et al., 2002; Engerman and Sokoloff, 1997, La Porta et al., 1998). On one hand, historic events can have long-term impacts if they permanently affect culture or norms of behaviour (Nunn, 2009). On the other hand, some authors argued that knowledge, education and technology can also be channels through which historic events have long-term impacts (Glaeser, 2004; Acemoglu et al., 2005b; Comin et al., 2007). For example, “past technology levels [of a society] can have a direct causal impact on current economic development” (Nunn, 2009: 85).

Likewise, literature signalled geographic factors such as ecology, climate and natural endowments as determinants of long-term economic development as well (Kamarck, 1976; Rappaport and Sachs, 2003; Sachs and Warner, 2001). In particular, Diamond (1997) explored how geography can have an impact through history by showing the unequal level of development of territories during pre-industrial, industrial and post-industrial periods due to geographic determinants (Diamond, 1997). To illustrate, the domestication of plants and animals in pre-industrial period or technological advance in industrial period tended not to spread as quickly in Americas or Africa as in Eurasia (Nunn, 2009).

In the following text we studied the way historic and geographic characteristics participate in development of medium-sized towns. We started by observing major historic transitions in economic development and the way they made an impact on cities. Then, we explored the timeline of French policies of regional development and importance of considering separately particular events in history of towns. In terms of geographical context, we referred to literature on geography of globalization and its factors that determine economic development of territories; as well as to the roles of towns within new spatial economy through centrality and protection of local products and practices.

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### 1.2.1. HISTORY MATTERS

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Unlike the static approach to development that refers to status *before* and *after* without explaining the process that leads from one state to another, the dynamic analysis studies movement in its duration. Thus, an interest in economic dynamics means studying economic phenomena in the process of change over time (Bosserelle, 2010). Literature sources on history of development of towns, especially of those in Europe, are not difficult to find (Huriot and Bourdeau-Lepage, 2009).

Since their first appearance more than 6,000 years ago, cities have experienced three main historically important transitions in socio-economic development (Table 02). The first agricultural Neolithic revolution affected the lifestyles of humans: from hunting and gathering to agriculture and settlement. Domestication of plants and animals gave more control over food supply and encouraged the exchanges of food surpluses. Fortified towns provided protection, but were also concentrations of sales, retailing, trade and craft (Huriot and Bourdeau-Lepage, 2009). The most powerful obstacle for the growth of cities was transportation costs, thus the supply area was limited for both towns and their rural hinterland (Bairoch, 1985). The constraints were also coming from institutions that controlled and protected the pre-industrial economy of their towns (Weber, 1947). There was an institutional control of quality of goods produced, markets and prices being often hostile to innovation and new ideas (Bairoch, 1997). In terms of production, the value of agricultural production was much greater than that of industrial one. Industry was dispersed across rural areas and was linked to agricultural activity (Puiz, 1997). Moreover, the dispersion of industrial production was caused by high transportation costs and no growth of returns because the production had

place in small individual units with few fixed assets. Also, the production was spatially dispersed, meaning that production that required high skills and access to goods and services (i.e. production of clothes) was concentrated in towns, compared to the production that was simple and standardized (Hohenberg and Lees, 1992). Thus, the town was the centre where manufactured goods were exchanged for food and raw materials (Huriot and Perreur, 1992).

The second great transition in economic development was a period of two industrial revolutions in 18<sup>th</sup> and 19<sup>th</sup> centuries. That was the period of changes in sectors of agriculture, manufacturing, mining, transportation and technology that altogether, had a profound impact on every aspect of society. Advances in agricultural technology increased productivity to a larger scale, available workforce for industry and demand for manufactured goods (Bairoch, 1997). Thus, industrial plants were built and due to their high requirement for energy and raw materials, they were located near a pool or nearby cities. This moment was very important for medium-sized towns since industry followed own spatial logic by developing in chosen places, which were not necessarily important cities of that time. Industrialisation happened in villages and small mining towns, or even more in entirely new cities-factories that were grouped around a large firm (Huriot and Bourdeau-Lepage, 2009). On the other hand, railway dramatically reduced the costs of transport, so the industry moved from mines to suburbs (Mumford, 1964). The industrialisation period was also marked by the expansion of markets, the development of mass production and a new way of company organizations (the owners and the managers are not the same people, so the strategic decisions are separated from production itself). Services such as accounting and advertising appeared and stayed concentrated in the largest cities which also marked the history of medium-sized towns - they became and stayed places of production. City dwellers were able to move faster and less expensive; urban mass transportation was followed by a spatial extension of cities and suburbanisation of the population. Thus, separation of place of residence and workplace was inevitable (Huriot and Bourdeau-Lepage, 2009).

The last transformation to global economy with its implications on cities and regions has been the subject of research of many authors worldwide (Friedmann, 1986; Castells, 1989; Giddens, 1991; Massey, 1991; Amin and Thrift, 1994; Merlin, 2007; Christopherson, 2004; Bell and Jayne, 2006; Sassen, 2009; Bosserelle, 2010; Demazière, 2011). Most authors agree that the transition started in early 1970-s (Amin and Thrift, 1994). World economy has been affected by globalization, thus according to Amin and Thrift (1994), we are witnessing its reorganization in seven aspects: 1) increasing centrality of the financial structure which

established the power of finance over production; 2) increasing importance of knowledge as a factor of production; 3) transnationalization of technology; 4) rise of global oligopolies, in other words companies are going global; 5) rise of transnational economic diplomacy of the globalization of state power; 6) rise of global cultural flows and deterritorialized signs, meanings and identities; and 7) rise of new global geographies (Amin and Thrift, 1994). More precisely on the last point, Sassen (2009) emphasized that the geography of economic globalization was more strategic than globalizing, especially when it comes to coordination, contracting and financing of global economic transactions. Second, the centre of gravity of many transactions to which we refer as global economy was in the North Atlantic region. According to author, that concentration on North Atlantic region promoted the development western regulatory frameworks and standards. Third, the strategic geography of globalization was partly implanted in national territories, such as global cities (Sassen, 2009). The Golden Age period from 1950 until 1973, established an intensive growth centred on mass consumption; new standards of production and consumption; it was a period of rising purchasing power of employees, increased profits and new investment. It was also marked by new ways of business organization: divisions started to represent a profit centre, each of them was in fact autonomous system organized within decentralized structure. Finally, Golden Age was a period of growth of service activities (Bosserelle, 2010). Likewise, “in the late 1970-s the spatial development potential and the specific flair of small and medium-sized towns were rediscovered by urban planners. [...] Qualitative growth and the renewal of historic centres were some new tendencies” (IRO, 2006: 89). However, “some areas appear disconnected from the new development trends, while others reap, *volens nolens*, the investments. [...] It is within this context of inequality in front of the crisis and economic renewal that local development initiatives are born” (Demazière, 1997: 59).

Table 02: Historical transitions in socio-economic development and their impact on medium-sized towns

| Transition in socio-economic development | Impacts affecting medium-sized towns                                                                                                                                                                                                                                             |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Agricultural transition</b>           | town fortification; simple concentration of sales, retailing, trade and craft; local control of goods, markets, and prices; small production units; simple and standardize production.                                                                                           |
| <b>Industrial transition</b>             | increased productivity; industrial workforce; population growth; industrialisation of towns with resources; towns as places of industrial production; increased accessibility and connectedness with surroundings.                                                               |
| <b>Post-industrial global transition</b> | raise of service sector; decline of industrial production; transnationalization; importance of knowledge; rise of new geographies; mass consumption; purchasing power; increased profits and investments; global cooperation, competition and flow; decline of rural hinterland. |

(Source: author)

Referring to French context of post-war changes in economic development, Merlin (2007) distinguished three periods of policies of localization of economic activities that affected medium-sized towns: 1) during the period of Golden Age, French policy was strongly oriented towards a partial transfer of economic potential from Paris region to province, which according to author, had some significant results, although mainly in towns within the ring of Paris Basin. This was also a period of creation of eight metropolises of equilibrium (Lyon, Marseille, Lille, Toulouse, Bordeaux, Strasbourg, Nancy, and Nantes) that initiated the reinvention of not only those cities, but also of their networks of surrounding medium-sized and small towns; 2) since 1967, a decentralization policy has been applied within Paris region in order to spatially balance job creation, especially in new towns. That policy became dominant during the 1980-s. Besides creation of new towns, French policy was oriented towards medium-sized towns as well. In fact, medium-sized towns were seen as urban centres to accept and to fix rural migrants by offering them jobs in industry and in the service sector, providing them housing and living conditions more pleasant than in large cities. In addition,

medium-sized towns had to benefit from the development while at the same time enjoying in benefits of rural surroundings (Taulelle, 2010); 3) since 1990-s French policy has been driven primarily by market conditions, but also in correlation to European policies. However, cities themselves grouped in associations according to their location, potential and willingness to cooperate. Medium-sized towns in particular were mobilized around their regional metropolises in order to benefit from their development opportunities (Merlin, 2007; Taulelle, 2010).

Besides facing challenges of global events that impact the economic development, medium-sized towns are also determined by their unique local history. In fact, historic events can play a significant role in building the reputation of the city and in making it recognized outside its territory (Paulsen, 2006). Local historic events impacting towns are numerous, but to give some examples: installation of international corporation that developed a specific production sector; war or local conflicts; arrival of certain population groups such as immigrants; local decisions and policies, etc. The events can be as diverse as there are cities, and not all of them value history in the same way. Moreover to that last point, in discussing resilience of territories, Hamdouch et al. (2012) argued that a common history is not necessary a common destiny. On the contrary, “neighbouring territories with more or less the same industrial history and facing the same shocks at the same time, may adopt different resilience paths” (Hamdouch et al., 2012: 20). Consequently, factors of historic determination need to be considered from case to case when analysing development of medium-sized towns.

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### 1.2.2. GEOGRAPHY MATTERS

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Many researchers such as Braudel (1972, 1981, 1984), McNeill (1963, 1974), Jones (1981), Crosby (1986) and Diamond (1997) have placed geography at the centre of their explanations of success of certain territories in economic development. On one hand, authors explored geographic factors that determined economic development of certain territories in the past (Kamarck, 1976; Diamond, 1997; Rappaport and Sachs, 2003; Sachs and Warner, 2001). Diamond (1997) in particular, explored how geographic determinants had an impact through history by showing the unequal level of development of territories during pre-industrial, industrial and post-industrial periods (Diamond, 1997).

Recent works concentrate more on geography of globalization, thus they analyse ongoing processes and their unequal impacts on territories (Castells, 1989; Amin and Thrift, 1994; Nunn, 2009; Sassen, 2009). According to Sassen (2009) “the geography of globalization contains a dynamic of spatial dispersion and centralisation. It has been proved that the massive spatial dispersion of economic activities at metropolitan, national and global levels, which we associate with globalization, has actually created new forms of territorial centralization of top management and control operations” (Sassen, 2009: 114). Nevertheless, “there is an account, increasingly prevalent, in which the processes of globalization are seen to have produced borderless geographies with quite different breaks and boundaries from what went before. Whether we see the global economy as a “space of flows” (Castells, 1989), as almost without a border (Ohmae, 1990), as necklace of localized production districts stung out around the world (Storper, 1991), as the centralization of economic power and control within a very small number of global cities (Sassen, 1991), or as something in between these extremes, it is clear that geography is now globally local rather than vice versa (Amin and Thrift, 1994: 5).

Foremost, what has been recognized as crucial for economic development of medium-sized towns and where geography mattered the most are transport costs, human health, agricultural productivity and proximity of natural resources (Gallup, 1998). Literature made a distinction between first and second types of geography that determined the development of medium-sized towns. The first one includes coasts, mountain ranges and natural endowments and it has been proved the correlation between high costs and low quality of first nature geography. For instance, some of conclusions were that propensity to disease lowered productivity, or being landlocked raised transport costs (Sachs and Warner, 2001; Rappaport and Sachs, 2003). Second type of geography was described as geography of interactions between economic agents. To illustrate, firms moved into locations with good geography, and by working they raised productivity, and created an uneven distribution of activity and spatial income disparities (Venables, 2006).

Overall, geography in economic development medium-sized towns is closely related to analysis of proximity and spatial concentration of economic activities (Venables, 2006). The fact that transport and trade costs savings are a direct benefit of spatial proximity, it has been well illustrated by Hotelling model (1929): if travelling costs are less, then consumers might not care whether they go to the nearest provider or not. If travelling costs are greater and a provider gets far away, consumers do not follow, so provider is no longer in a cluster



(Hotelling, 1929). However, Venables (2006) argued on two issues regarding proximity: firstly, product and labour market differently appreciate proximity. According to the author, the product market is long range, so reductions in transport costs will increase market access for firms. On the other hand, labour market operates within narrower area, so if transportation lasts too long, the access is lower. Secondly, some sectors of economic activities demand closer proximity of firms to consumers, while others less so. Venables (2006) illustrated how some skill-intensive parts of the sector prone to clustering, networking and thicker labour markets, while others such as production can be outsourced and moved to low-cost locations which are generally in small or medium-sized towns (Venables, 2006). Moreover, Williamson (1956) argued that geographic inequality often arises from spatial concentration during development (Williamson, 1956). This means that dense configurations of economic activity work better than sparse or fragmented ones (Venables, 2006).

From the point of view of medium-sized towns, the logic of geography of globalization was illustrated in previously through Christaller's Theory of Central Places. Centrality as the extent of an area for personal service activities offered within a town centre has two perspectives: 1) functional perspective means that a centre provides different functions for its surrounding hinterland (i.e. supply, housing, labour, culture); 2) spatial-geographic perspective means that a centre is situated more or less in the middle of a region in order to minimise the distance to its consumers (IRO, 2006). Moreover to that, Sassen (2000) argued that even though the combination of spatial dispersal and global integration contributed to a strategic role for certain major cities, towns fulfil equivalent functions to those of world cities but at trans- and sub-national levels. Thus, they are part of networks of cities (Sassen, 2000). Analysing the same issue, but in French context, Lacour (2006) argued that dynamics of medium-sized towns was more or less determined by proximity to Paris region. However, medium-sized towns are not threatened but choose more proactive role to use the opportunity to benefit from the proximity to larger cities, i.e. land offer or sharing economic activities. Therefore, "physical distance between cities can assure forces of protection, consolidate a local labour market, provide services to businesses and to people that chose financial reasons to relocate" (Lacour et al., 2006: 31).

Another point in geographical shaping of identity of medium-sized towns is the valorisation of local. Amin and Thrift (1994) remarked that "the pressure posed by globalization is to divide and fragment cities and regions, to turn them into arenas of disconnected economic and social processes and grouping. Nevertheless, these places continue to embrace singular

and common identities in order to live in, or challenge, the global. Therefore, globalization does not necessarily imply a sacrifice of the local” (Amin and Thrift, 1994: 10). Preservation of local products, production processes and know-how are examples of valorisation of geography and local distinctiveness of small and medium-sized towns. Early beginning of 20<sup>th</sup> century, France policy recognized the importance of a geographical name to identify and protect products whose characteristics are related to local know-how. The first Designation of Origin for food products (fr. *Appellation d’origine protégée*, AOP) is a protection of unique and non-reproducible local product, stressing that the entire production process is done in a single area. The second Protected Geographical Status (fr. *Indication géographique protégée*, IGP) is a protection of geographical name and is rather based on the product’s reputation, history and special qualities coming from the area, so it does not insist to be produced in a single area. Finally, Traditional Specialty Guaranty (fr. *Spécialité traditionnelle garantie*, STG) aims to protect a tradition of production that differs from other similar products of the same category. Therefore, protection of geographical origin allows taking into account cultural and biological diversity, since the whole process depends on biological and geographical characteristics, local knowledge and local practices. In fact, these elements are part of the product specificities (Berard and Marchenay, 2007). For medium-sized towns this is an opportunity for growth, since small manufacturing units and local products can become a driver of economic development and compete at a larger geographic scale (Knox and Mayer, 2009).

### 1.3. DYNAMICS OF ECONOMIC DEVELOPMENT

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According to Lever (1997) in globalized economy, nation-states lost economic power against cities and regions that became centres of growth. Secondly, technological progress facilitated transfer of information, goods and people, thus creating new urban hierarchy based on accessibility and connectivity. Finally, production system changed in favour of more flexibility that offered medium-sized towns opportunities to change their economic structure and development (Lever, 1997). It was during 1970-s that the globalized economy began to focus more on services and less on manufacturing. Business services in particular were sensitive to size and accessibility to technology, information, knowledge and encouraging

environment, which they usually found in larger urban conurbations (Léo et al., 2011). According to authors' research on French cases, medium-sized towns suffer from such trends and they grow at a slower rate due to three main reasons: lack in business services, lack in research activities and lack in higher skilled labour (Léo et al., 2011).

In following chapter we explored four main concepts in economic development of medium-sized towns. Firstly, we presented medium-sized towns as a result of pushing and pulling forces that concentrate or disperse population and activities within territory. Secondly, given the scope of new globalized economy, we placed medium-sized towns and new opportunities within knowledge economy and innovation. Lastly, we exposed two strategic dynamics of economic development facing medium-sized towns: balancing between production economy and in-place (also called residential) economy; and between sectorial specialisation and diversity in economic activities.

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### 1.3.1. IMPACT OF ECONOMIES OF AGGLOMERATION

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Spatial configuration of economic activities is the outcome of a process involving two opposing types of forces: agglomeration and dispersion that push and pull consumers and firms (Fujita and Thisse, 2002). In 18<sup>th</sup> century, authors Cantillon (1755) and Smith, (1776) explored the way cities form urban hierarchy and exchange activities. However, in 19<sup>th</sup> besides already recognized the link between market and proximity as crucial for exchange, von Thünen (1826) introduced the variable of increasing returns. Von Thünen's conclusion was that production costs and transport costs explain the dispersion of production out of the city (Pouyanne, 2004). In 20<sup>th</sup> century Weber and Lösch (1909) developed their models of locations and urban hierarchies based on these variables until Marshall's final analysis of economies of agglomeration (Huriot and Bourdeau-Lepage, 2009).

Economies of agglomeration refer to the benefits that firms obtain when they locate in close proximity to other firms, people, capital, goods and services (Hildreth, 2006). Therefore, there are advantages that come when firms and people locate near one another in cities and industrial clusters (Glaeser, 2010). Thus pulling forces to agglomeration are: 1) market size: better access to markets and suppliers of goods and services; 2) larger labour markets: better access to range of specialised skills and workforce; 3) knowledge spillovers: possibilities of exchanging ideas and learning from other firms' innovations (Hildreth, 2006).

Moreover, literature depicted the nature of economies of agglomeration through economies of location and economies of urbanization (Marshall, 1920; Hoover, 1937; Jacobs, 1969; Jouvaud, 1996). Economies of location concentrated on agglomeration of firms within the same production sector that benefit from their specialisation. These agglomerations produce a variety of the same product in order to attract customers by a wider range of choices, and on the other hand they attract other firms producing similar goods and services, thus increasing their productivity (Huriot and Bourdeau-Lepage, 2009). Nevertheless, economies of urbanization developed by Jacobs (1969) come from agglomeration of different sectors within a city, which enforces diversity of economic activities. In fact, the proximity of different firms was seen as beneficial if they happen to be clients of one another, contractual partners or if they use complementary goods and services, such as production of shoes and clothes. The diversity of economic activities is considered to be a risk reduction factor, since strictly specialised agglomerations would be more sensitive to changes of the market (Huriot and Bourdeau-Lepage, 2009). Diversity as a factor of sustainability and stability was proved in analysis of decline of cities with dominant mining or textile industries (Hohenberg and Lees, 1992; Hohenberg, 2004).

In contrast, dispersion forces in combination with the agglomeration ones, are shaping the economy of cities as well: 1) spatial concentration of natural resources and equipment; 2) transportation costs of people depending on land prices and wages; industrial goods to be delivered out of the city; and transportation costs of farm products to be delivered to the city; and 3) competition between firms that explained by Hotelling model (1929) affects the firm to move away from its opponent to use the distance as a protection of competition in price (Huriot and Bourdeau-Lepage, 2009).

The movement of population across the territory can be illustrated by von Thünen's model as well. If we consider correlation between proximity and transportation costs, then according to the model, centre of the city would attract the population who wants to save costs on transportation. However, prices of land and housing due to demand increase according to their proximity to the centre. Thus, location further from the centre would provide more space, but it would also increase transportation costs. Moreover, amenities and quality of life of places in general play an important factor that can influence the movement of population (Huriot and Bourdeau-Lepage, 2009). According to von Thünen's model, if revenue is considered to be the only condition of choosing a location, then the richer population would be settled farther away in suburbs than the poorer population. On the other hand, if richer

population favours transport savings and benefits of proximity, their location will be closer to the centre of the city (Hurriot and Bourdeau-Lepage, 2009).

When it comes to differences between large cities and medium-sized towns in that context, “larger cities benefit from urbanisation economies, while medium-sized cities are unlikely to do so. Instead, they tend to benefit from localisation economies within the industry (or industries) located in or near to the city” (Hildreth, 2006: 16). Unlike large cities, medium-sized towns offer economies of location based on better specialisation. “[...] They [medium-sized towns] are cheaper locations to live, work and run a business if compared with large cities, because they have shorter commuting and lower land and wage costs” (Hildreth, 2006: 16).

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### 1.3.2. IMPACT OF KNOWLEDGE ECONOMY AND INNOVATION

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Creation and development of knowledge based society and knowledge economy are perceived as one of the most important priorities of modern society and its lifestyle development, as well as of social, economic, political development, science and technological progress (Melnikas, 2010). “Knowledge based society is the society which is characterized by values of predominance of creativity and creative activity, as well as values, which express generation, spread and use of new knowledge” (Melnikas, 2010: 524).

The knowledge economy is often contrasted with industrial modes of production in which land, resources and manual or physical labour are crucial for growth (Bastalich, 2010). Therefore, in knowledge economies, economic clusters consist in knowledge and act upon knowledge itself for productivity and growth (Castells, 1996; Cooke, 2002; Kostianen and Sotarauta, 2003). According to Cooke (2002), there are three main characteristics of knowledge economies: 1) knowledge ages rapidly and new knowledge is constantly replacing the old one; 2) scientific knowledge is highly valued and the scale and economic penetration of scientific knowledge exceeds distinctly the previous economic development phases 3) knowledge economies are especially characterized by exploitation of new knowledge in order to create more new knowledge (Cooke, 2002).

Knowledge-based activities favour proximity, so generally cluster in specific urban areas that are as vibrant and creative. The main reason is to benefit from the agglomeration of other

knowledge-based industries and knowledge workers (Yigitcanlar, 2010). Logic behind clustering of knowledge-based activities was argued by Malmberg, Sölvell and Zander (1996). The accumulation of knowledge and competitiveness are inter-related through three processes. Firstly, it is the question of the nature of the innovation process. Problem solving, repeated interaction between related firms, and need to exchange knowledge through face-to-face contacts – lead to favouring certain territories. Secondly, the ability to gain access to informal and formal networks of knowledge exchange, as well as to social capital is reserved for insiders on certain territory. At the same time, it is the barrier to diffusion of knowledge. Thirdly, attraction to outside resources is enhancing the process of knowledge accumulation within the territory (Malmberg et al., 1996).

In terms of development of medium-sized towns, researcher remarked that the engagement in knowledge economy can have a significant impact on the modernisation of existing industries through technology adoption, the diversification of existing industries into new economic sectors, the transplantation of industry and creation of new indigenous industries (URBACT, 2010). Moreover, in the evolving knowledge economy, the competitiveness of towns will depend on their ability to provide lively and attractive environments for knowledge creation and exchange. Thus, many local actors have invested in development of urban knowledge clusters and in favourable conditions by providing to local people with necessary skills and qualifications (van Winden, 2010; Partridge 2010). In that particular matter, universities are expected to play a major role in driving the enlargement and diversification of the industrial knowledge base that underpins innovation. The reason is for that universities are considered to be reliable networks and resilient to market turbulences (Arhweiler et al., 2011).

When it comes to innovation, according to Moulaert and Mehmood (2010) Territorial Innovation Models (TIMs) are models of regional innovation in which local institutional dynamics play a significant role as catalysts in innovative development strategies (Moulaert and Mehmood, 2010). There are four groups of TIMs: 1) milieu innovateur (Aydalot, 1986); 2) industrial district (Becattini, 1987); 3) regional systems of innovation (Cooke, 1996; Edquist, 1997); 4) new industrial spaces (Storper and Scott, 1988; Saxenian, 1994). Authors argued that quality of life in local and regional communities depended on the growth of prosperity and would appear as a positive externality of higher economic growth. Therefore, models of territorial innovation highlight the instrumentality of institutions in the economic restructuring and enhanced competitiveness of regions and localities. Nevertheless, the critique comes from being restricted in view of economic development which was that innovation and

knowledge will improve the economic performance of a territory, and by this contribute to overall prosperity (social, political and cultural) (Demazière, 2012).

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### 1.3.3. BETWEEN IN-PLACE AND PRODUCTIVE ECONOMY

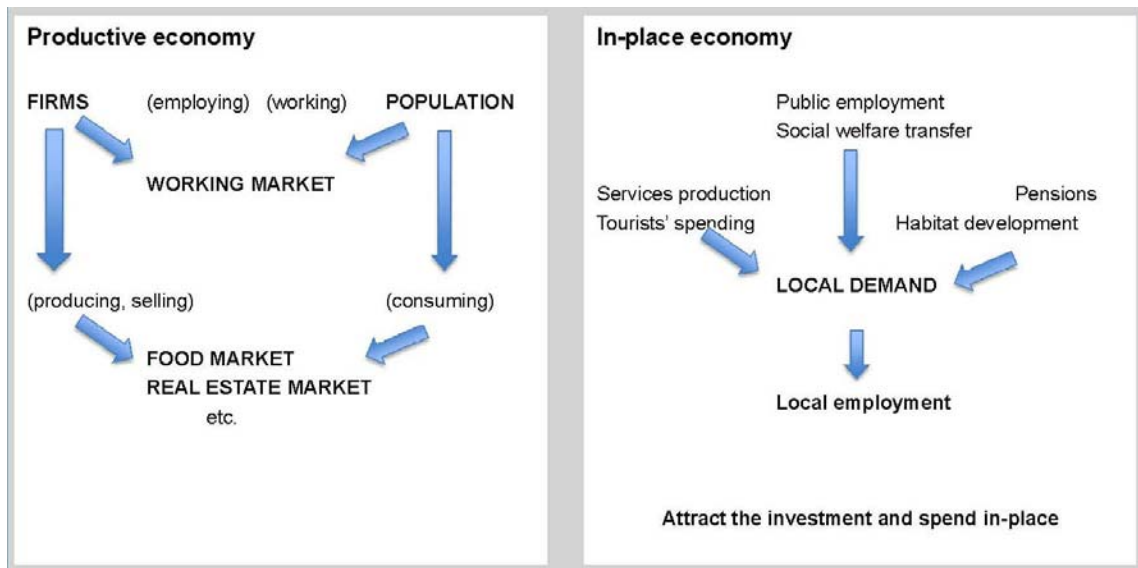
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During the period of Golden Age in France, medium-sized towns had three main functions: 1) absorption of rural exodus; 2) industrial development; and 3) social and economic modernization (De Roo, 2007). Towns were often selected by firms whose rapid expansion was based on the standardized production and less skilled workforce (Saint-Julien, 2003). Nevertheless, beginning of 1980-s that economic system was changed by globalization. Impact of lowering of borders was particularly strong for industrial sector: foreign competition in performance, continuous search for gains in productivity; outsourcing of some production processes, as well as growth of service sector (Demazière and Hamdouch, 2012). Cities changed in their urban and population structures as well. Firstly, their growth was accompanied by urban sprawl. The population of suburbs grew more than in centres of cities, mainly due to better transportation possibilities at lower costs. Secondly, population got older, which affected the ratio between working population and pensioners, and consequently put an accent on services over production sector (Huriot and Bourdeau-Lepage, 2009). “Productive activities of medium-sized towns are depending on firms’ strategies and how they mobilize productive resources of territories. [...] Every firm has its own localization strategy for mobilization of local resources, thus today’s economy of medium-sized towns should combine productive economy and economy of services” (De Roo, 2009).

The term of residential economy (fr. *économie résidentielle*) was introduced by Laurent Davezies (2000) and was later on broadened to in-place economy (fr. *économie présenteielle*). Institute for Statistics and Economic Studies (INSEE) defined the concept of in-place economy as “economy based on local economic activities for production of goods and services that meet the need of people in the area, both residents and tourists” (INSEE, 2012). Thus, in-place economy comprises activities in domains such as: education, health, welfare, government, retail trade, hotels and catering, construction, financial activities, domestic and passenger transport. In contrast, productive economy is defined as “production of goods mainly consumed outside the area, as well as service activities for corresponding companies” (INSEE, 2012). For instance, activities of productive economy are agriculture, wholesale

trade, industrial production, business services, research, activities in energy sector, etc. Overall, the production economy is determined by the attractiveness of the city to business, by its competitiveness and employment skills; while in-place economy is determined by the attractiveness of the city to residents and tourists, by good living environment, heritage, and quality of provision services, culture, health and schools (Figure 03) (De Roo, 2005).

Figure 03: Dynamics of productive and in-place economies



(Source: author based on presentation “Les villes petites et moyennes de la région Centre: économie et actions publiques”, Forum des élus des villes moyennes de la région Centre, Chinon, 2011)

Table 03: Classification of activities within productive and in-place economies in France

| Productive economy | Types of activities                                             |
|--------------------|-----------------------------------------------------------------|
| Production         | Agriculture, forestry and fishing                               |
|                    | Mining, energy, water, waste management and pollution           |
|                    | Manufacture of food, beverages and tobacco products             |
|                    | Chemical and pharmaceutical industry                            |
|                    | Manufacture of rubber and plastic                               |
|                    | Metallurgy                                                      |
|                    | Manufacture of electrical and electronic products and machinery |
|                    | Manufacture of transport equipment                              |
|                    | Manufacture of other industrial products                        |



| In-place economy                                                              | Types of activities                                                    |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Superior services</b>                                                      | Information and communication                                          |
|                                                                               | Financial and insurance activities                                     |
|                                                                               | Real estate activities                                                 |
| <b>Human services</b>                                                         | Trade, car repair and motorcycle                                       |
|                                                                               | Accommodation and food                                                 |
| <b>Collective services</b>                                                    | Public administration, education, healthcare and social security       |
| <b>Scientific and technical activities; Operational services for business</b> | Scientific and technical activities; operational services for business |
| <b>Transport and logistics</b>                                                | Transport; logistics                                                   |
| <b>Construction</b>                                                           | Construction                                                           |

(Source: Nomenclature de l'activité française NAF 17, NAF 38)

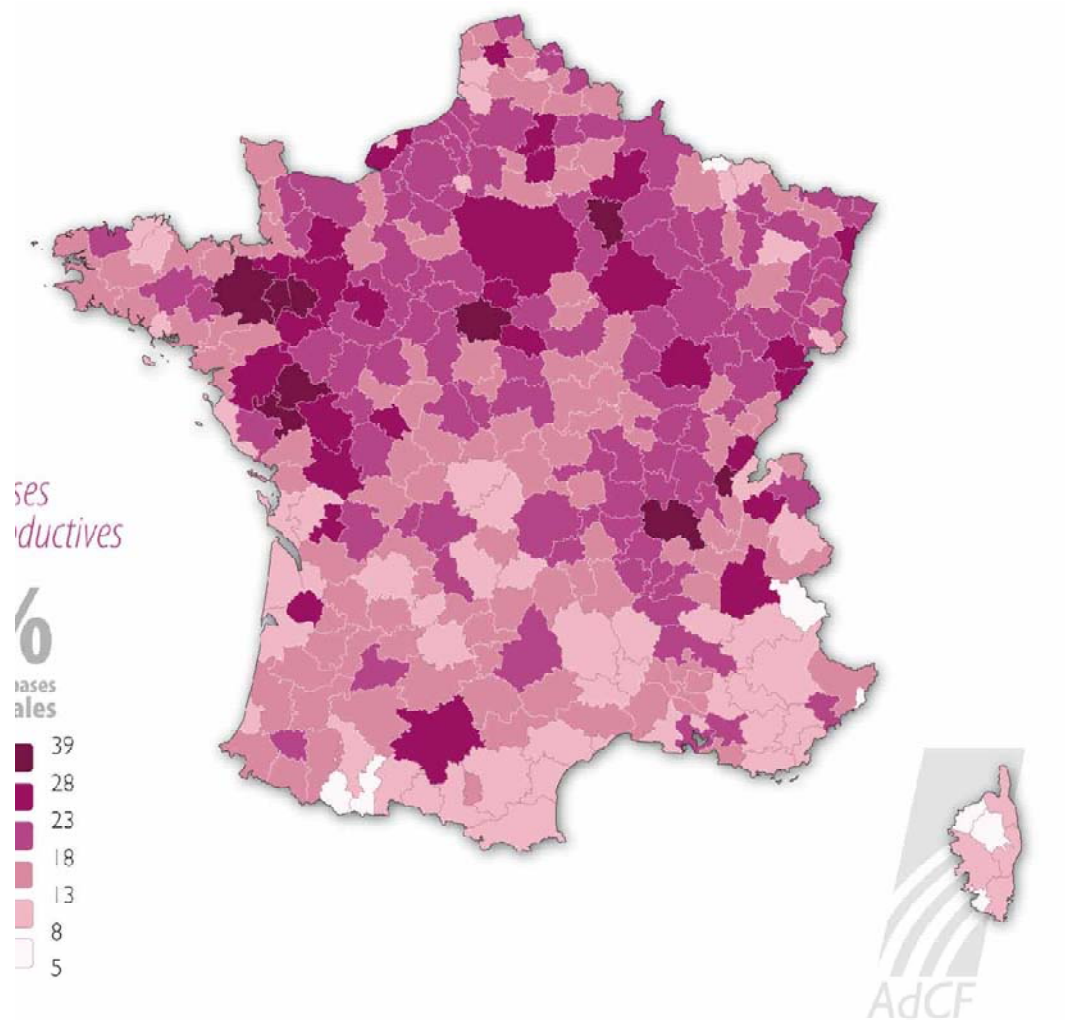
Even though some elected representatives do not believe in-place economy can create either wealth for its territory or jobs for residents (Demazière, 2010-2011), official statistics showed that in France in more than half of living areas (fr. *bassin de vie*) of villages and towns in-place economy was dominant in overall local economy. Particularly in rural areas, in-place economy was strongly based on tourism; while agricultural activities and food production lost their dominant position in local economy in majority of living areas in France (Ambiaud et al., 2009). In current public debate in France, many consider in-place economy to be the key driver of economic development, just as productive economy (De Roo, 2009). Inasmuch in most regions the income of pensioners account for 30% of disposable income in the territory, and those of officials for another 30%; and productive economy weighs less than the consumption that actually attracts national and multinational companies to localize and to sell (Godet, 2009). Moreover, in-place economy is considered to be a stabilizing factor for a territory. It allows the capture of foreign income and is not exposed to global competition because it cannot be relocated (INSEE, 2012). However, in-place economy has the disadvantage of providing jobs that are often paid less and that are not as “fixed” as in productive economy (mainly due to seasonality of tourism and lower skill levels) (INSEE, 2012). In addition, the market range of productive economy is wider and can become a driver

of economy at a national scale because of its potential to create exportable added value (Godet, 2009).

In France according to statistics, in-place economy appears to be the major part (53% in average) of economic basis of territories. In total 54 employment zones have more than 60% activities in in-place economy but they differ in profile. Some medium-sized towns rely primarily on tourism (Briançon, Lourdes, la Tarentaise or Calvi), other are more specialized in income of commuting (Altkirch, Saint-Louis, Santerre-Oise), and finally some towns benefit from income coming from pensioners (Villeneuve-Sur-Lot, Montçeau-les Mines, or Montluçon) (Davezies, 2010). On the other hand, French productive economy based mostly on strong industrial sector is still related to metropolis (Ile-de-France 36%; Lyon 30%; Nantes, Orléans and Toulouse). Despite the fact that small and medium-sized towns such as Perpignan, Narbonne, Beziers, Gap or Digne have significant productive economy; most of towns (especially those located in the south) rely on income from non-productive sectors (Davezies, 2010).

As a result, some towns developed strategies to attract wealthy retirees and young professionals and to encourage development of service activities (Godet, 2009). “The development of the cultural, sport, tourism, transport, or the consideration of personal services are parameters that allow a city to meet its residents and attract newcomers. Indeed, those services contribute indirectly to the development of the territory” (Demazière, 2010-2011: 147). However, researchers argued that medium-sized towns that attract particular groups such as migrants, working population and retired population, should not build their development on a single pillar, but on a strategy to replace some employment in productive economy (i.e. industrial jobs) by jobs in residential services. The residential services are essential to meet the changing need of the inhabitants (De Roo, 2009), but in-place economy requires the implementation of proactive public development strategies that includes culture and tourism (De Roo, 2005).

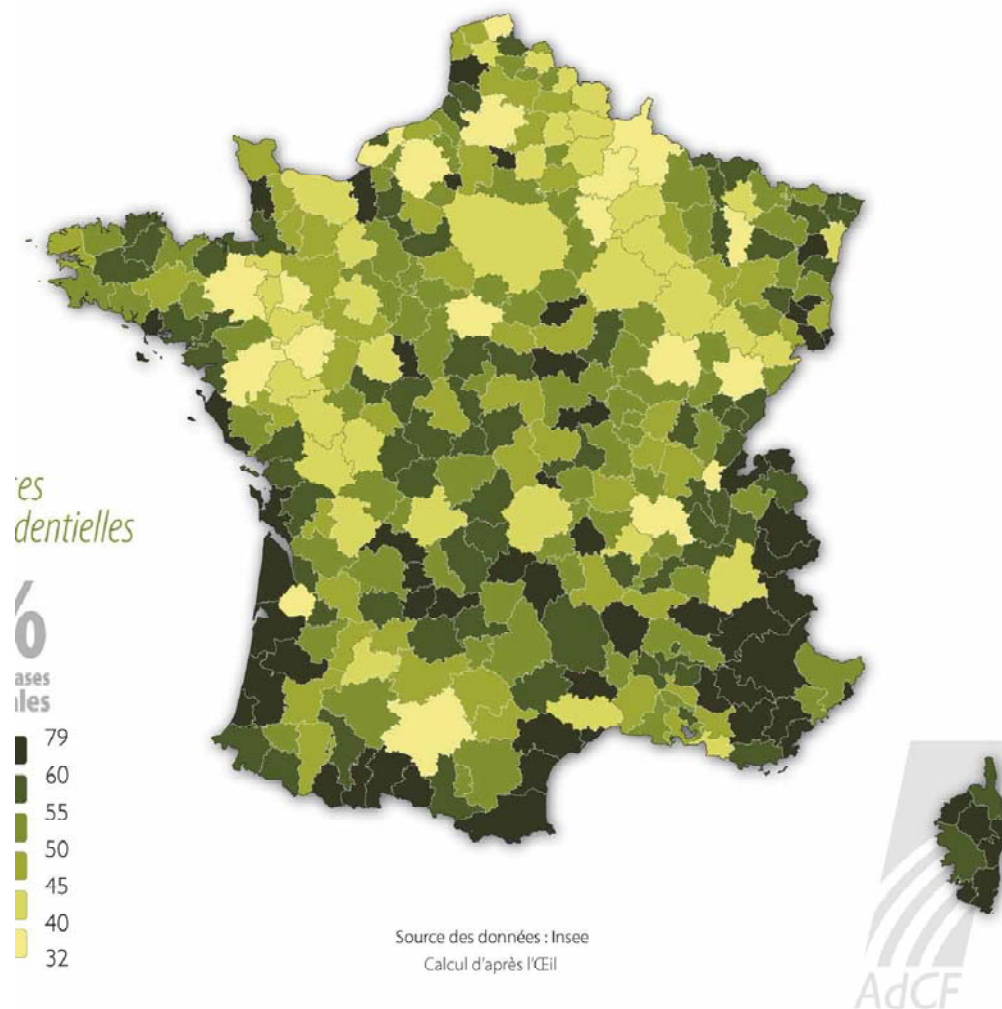
Figure 04: Productive economy in employment zones in France



Number of employment in productive economy in colours: the darker the colour, the higher the percentage of employment in productive economy.

(Source: Devazies, 2010)

Figure 05: In-place economy in employment zones in France



Number of employment in productive economy in colours: the darker the colour, the higher the percentage of employment in in-place economy.

(Source: Devazies, 2010)

#### 1.3.4. BETWEEN DIVERSITY AND SPECIALIZATION

Since 1980-s, cities have seen a profound change in their economic base such as disappearance of old enterprises, restructuring of existing groups, creation of small businesses, sub-contractions of large business groups, growth of service sector, etc. (Conseil

économique et social, 1998). In terms of nature of economic development, medium-sized towns can pursue diversity of activities or more specialised economy. In fact, degree of specialisation of towns depends on forces of agglomeration: 1) firms from different sectors would have no common interest to locate in the same town. Therefore, they would locate in different towns rather than in the same town. However, if they were clustered together, town would grow in size; 2) intensity of economy of localization varies greatly from one sector to another. For example, in a textile sector, there might be little interest to develop many small firms, while in contrast superior services focus on a very large number of firms because benefits derived from proximity are much larger. Thus, the specialization of a town is related to its size (Huriot and Bourdeau-Lepage, 2009). In addition, firms operating in different sectors and at different stages of production process will choose to locate in different-sized towns (Duranton and Puga, 2001). So, cities of a similar size would develop similar functions (Polèse, 2005).

A town is specialised when a significant share of its workforce is involved in certain economic activities. It is the process by which a town is dedicated to production of a narrower range of goods and services compared to the range of consumption (Demazière and Hamdouch, 2012). Attractiveness of medium-sized towns depends on „capacity of the production system to generate specific resources, production niches and new activities to establish an exchange with its exterior surroundings“ (IRO, 2006: 114). Specialisation based on specific resources has the capacity to attract investment and become a driver of local development (Pecqueur, 1989). Moreover, medium-sized towns can benefit from their specialisation through wider scale of specialized labour and local accumulation of skills that can increase productivity of goods and services (Huriot and Bourdeau-Lepage, 2009). On the other hand, „specialisation of a limited number of production branches could create an obstacle concerning the adaptation to the new economic environment“ (IRO, 2006: 116). Thus, specialisation in one specific sector makes town vulnerable for the reason that it becomes exposed to endogenous or exogenous shocks that might negatively impact that particular sector, and thus the majority of town's economy (Floch and Morel, 2007; Demazière and Hamdouch, 2012).

Nevertheless, diversity of local activities attracts customers wishing to have a wide range of choices; it provides access to labour pooling, knowledge spillovers and links between producers of goods and services (Krugman, 1991). Through diversifying economic activities,

towns position themselves on new markets adding new businesses and activities to already existing ones without necessarily having any connection between them. Aims of diversifying is to allocate investment to reduce risks for development; renewal of mature products and competitive position (Aftiss, 2010). Finally, diversity is a factor of durability, stability, and comprehensive insurance (Hohenberg and Lees, 1992; Hohenberg, 2004). Researches on local economic development suggested that instead of specialisation on selected industries, successful cases of medium-sized towns rather built networks and economic cooperation between local actors (Glaeser, 2010; Léo et al, 2012; Bouba-Olga et al, 2012; Carrier and Demazière, 2012). Therefore, researches showed that the best chances of success have towns that develop economic activities that are independent, but are also likely to support each other to create the effect of critical mass (Léo and Philippe, 2011). However, local economy of small and medium-sized towns faces difficulties if diversity of activities is unreasonably forced by local actors (Demazière, 2001b).

Structuring industries and their massive investment were for a rather long time seen as alone capable of shaping production system and leading to long-term economic development. However, the growth of service activities and decline of manufacturing jobs, seem to challenge that perception (Léo et al, 2012). In fact, this leads to the previous distinction between in-place and production economies. Some activities benefit from the resources coming outside the area (i.e. productive sectors), while others from the resources of resident households and tourists (i.e. in-place economy and services). Anyhow, medium-sized towns are specific and heterogeneous, as are their levels of specialisation or diversity of activities within productive or in-place economies. “Each of medium-sized towns can assume different roles in terms of functionality: administration, residential services, tourism, research and development or production” (Demazière and Hamdouch, 2012: 25). Therefore, city types are shifting and small and medium-sized towns are searching for new roles and identities. In order to remain competitive, medium-sized towns are making places more attractive to local inhabitants and potential foreign investors by promoting local special resources, cultural values, and local know-how (IRO, 2006).

Networking based on Glaeser’s spill-over effects (1998) is a tool to diversify or to specialise economic development. Within production economy of medium-sized towns, networking of economic actors can be observed through clusters and local production systems.

“Clusters are characterised as networks of production of strongly interdependent firms (including specialised suppliers), knowledge producing agents (universities, research institutes, engineering companies), bridging institutions (brokers, consultants) and customers, linked to each other in a value-adding production chain” (OECD, 1999: 5). Moreover, according to Hamdouch (2010), clusters build on a specific combination of networks involving an ensemble of varied organizations and institutions that: a) are defined by respective geographic localization occurring at variable spatial scales and within specific institutional environments; b) interact formally and/or informally through inter-organizational and/or interpersonal regular or more occasional relationships and networks; c) contribute collectively to the achievement of all kind of innovations (technological, organizational, social, cultural, etc.) within a given industry or domain of activity, i.e. within a domain defined by specific fields of knowledge, competences and technologies (Hamdouch, 2010).

On the other hand, local production systems place network between companies in the centre; they affirm the necessary dialogue between companies and territory (Pecqueur, 1989). According to the author, local production systems are characterized by: a) specialisation of production around a product essential to the economy of the area (i.e. textiles, mechanical, cooking, furniture); b) sectors, technologies and products are compatible with the small size production units, so to allow the use of know-how historically present on the site; c) multitude of small and medium sized enterprises without a leading company. In fact, no multinational company is playing a role in structuring the system; d) system of interdependence between small and medium enterprises is very narrow; e) condition of minimum density is very important; f) production of these systems is large enough to cover a significant share of national production and export. The weight of export is an important feature because it shows the openness of these systems to the outside and their involvement in global competition (Pecqueur, 1989).

Within in-place economy, medium-sized towns diversify or specialise their activities by building on their endogenous potential, including the strengthening of their social and cultural networks (IRO, 2006). In order to meet the local demand and to attract tourists, towns are investing in public infrastructure according to the changing demographic profiles (growing retired population in most cases of European towns). The shift toward service sector is profound and probably irreversible. Most of French medium-sized towns have deficit of business services, research activities and highly qualified population (Léo, et al., 2012). However, according to authors, medium-sized towns sooner or later will be in advantageous



position in developing services especially those within knowledge economy due to concentration limits of metropolises. Thus, medium-sized towns would become alternative solutions for both location of services and knowledge creation (Léo, et al., 2012). Different aspects of community life are still stronger in medium-sized towns than in larger cities (Putman, 2000). Knox and Mayer (2009) highlighted that advantages of smaller towns come from leaner bureaucracies that make working across departments involving economic, social and environmental considerations easier. Furthermore, small towns are also advantages because they are able to develop a culture of sustainability through their social networks and civic capacities (Know and Mayer, 2009).

In his analysis of roles and economic potential of medium-sized towns, Hildreth (2006) concluded: 1) large cities produce more experimental and evolving products, where there is a high premium on innovation or design, while medium-sized towns concentrate on the production of standardise items; 2) large cities act as incubators for research and development and creation of new products that once their production is established, is decentralised to medium-sized towns because of lower costs; 3) medium-sized towns have less skill-intensive industrial production as a result of smaller and less diverse labour markets; 4) medium-sized towns tend to be stronger in manufacturing and weaker in services due to the concentration of highly educated workforce in large cities and due to costs of land; 5) medium-sized towns have smaller and less diverse local markets so opportunities to test new products and ideas are less (Hildreth, 2006).

Table 04: Difference between large cities and medium-sized towns based on simplified assumptions (derived from Henderson 1997)

|                                | Large cities                                                     | Medium-sized towns                                               |
|--------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
| <b>Agglomeration economies</b> | Urbanisation                                                     | Localisation                                                     |
| <b>Specialisation</b>          | Produce less standardised ad more evolving products              | Produce more standardised products                               |
| <b>Product development</b>     | Incubators from R&D with new firm creation spillovers            | Production of established products                               |
| <b>Skill base</b>              | Higher and more specialised skill base                           | Lower and less diverse skill base                                |
| <b>Sectors</b>                 | Stronger in knowledge-based services and weaker in manufacturing | Stronger in manufacturing and weaker in knowledge-based services |
| <b>Markets</b>                 | Larger and more diverse markets                                  | Smaller and less diverse local markets                           |

(Source: Hildreth, 2006)



To conclude, results of specialisation in one activity can be observed in numerous declining towns with strong mining or textile background. It made towns vulnerable to changes in global economy (Floch and Morel, 2007; Demazière and Hamdouch, 2012). “Regional economic change can be best understood as a moving landscape of growth pole that due to innovation and changing consumer preferences expand or contract over time. Hence, what used to be a core location in one stage of economic development may well become a less-favoured peripheral area in a subsequent phase (IRO, 2006: 115). However, studies proved that specialisation based on supporting already existing local knowledge and infrastructure, as well as networks within their respective areas can strengthen economic development of towns, increase competition, create national and international reputation and assure some visibility to the territory (Demazière, 2010-2011).

#### 1.4. DYNAMICS OF ECONOMIC RESILIENCE

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The recent growth of interest in resilience in urban and regional literature (Rose and Liao, 2005; Vale and Campanella, 2005; Stehr, 2006a, 2006b Foster, 2007; Hill et al., 2008; Pendall et al., 2008; Dawley et al, 2010; Simmie and Martin, 2010; Christopherson et al., 2010; Hamdouch et al., 2012) has been triggered by four major factors: a) succession of major environmental disasters affecting local communities worldwide, b) disturbances in ecosystems, c) raise of new economic geographies, and d) financial and economic crisis that have swept across the world since the year 2008 (Martin, 2011). Researchers especially in Europe and United States looked to transfer resilience to the domain of local economic development, given the current era of global economic integration, openness and interdependence (Dawley et al., 2010). However, “despite its currency, the question of regional resilience is at base, a very old and enduring question: why do some regions manage to overcome short-term or long-term economic adversity to maintain a high quality of life for regional residents while others fail” (Christopherson et al., 2010: 3.).

In following chapter, we presented definitions of resilience and its different interpretations. The complexity of the concept and the nature of resilience resulted in several different approaches that we explored in further text. Finally, we listed some attempts of researchers to measure economic resilience by vulnerability index.

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#### 1.4.1. FRAMING THE NOTION

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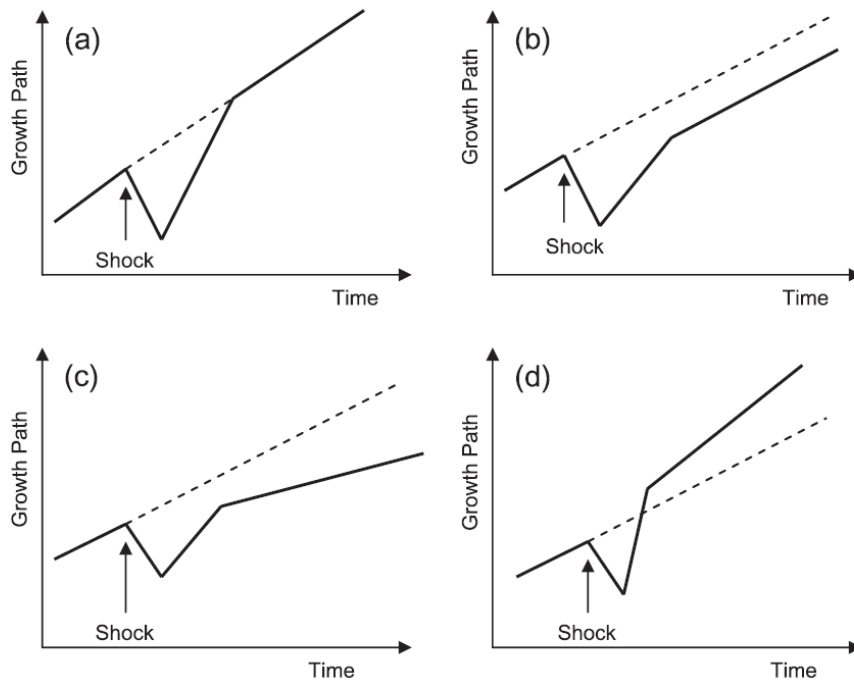
Lack of consensus on common definition of the notion of resilience, reflects the existence of different interpretations across the social, natural, physical and biological sciences (Martin, 2011). In fact, “the application of resilience to a local and regional economic context is a fertile but still developing field of inquiry. Much debate has emanated from the challenge of transferring resilience principles from a diverse disciplinary background, from psychology to ecology, with little or no geographical or territorial sensibilities” (Dawley et al., 2010: 652). “Different conceptions of resilience may well be needed for different circumstances” (Martin, 2011: 33).

Hamdouch, Depret and Tanguy (2012) pointed on four key factors important for framing the notion of territorial resilience. Firstly, the nature and temporality of resilience depend on the intensity and timing of the shocks. Slow and incremental disturbances end with more stabilized environment, rather than radical and brutal shocks that result in turbulent environment. Secondly, certain territories face better disturbances due to their adaptation and reinvention capabilities. Thus, authors differentiated two types of resilience: a) static resilience as capacity of resistance and adaptation to preserve specific bases of economic development; b) dynamic resilience as ability to anticipate future shocks and as capacity to create new resources and competences for the post-shock environment. Thirdly, path-dependency and territorial rent such as history, identity and specific resources of the territory affect the post-shock development. Fourthly, local actors and nature of their relations (competition, cooperation, networks, etc.) are as well playing significant roles in territorial resilience (Hamdouch et al., 2012).

Another observation came from Simmie and Martin (2010). According to them, in literature on resilience there are three different interpretations and uses of the term (Figure 06): 1) engineering resilience as ability of a system to return quickly to its pre-shock equilibrium. In case of economic system, any shock that moves the economy from its equilibrium state activates self-correcting adjustments to bring it back to previous state (Figure 06a); 2) ecological resilience (called also hysteresis concept) as capacity of a system to tolerate disturbance without collapsing. Economists use that concept to describe an economy moved from one equilibrium to another (superior or inferior to previous one) as a result of a shock (Figure 06b); and 3) adaptive resilience as adaptive capacity that enables the system to rearrange its internal structure after the shock. Therefore, adaptive economic resilience would

be the capacity of an economy to reconfigure in order to maintain growth path, employment and wealth over time (Figure 06c&d). This view is characterizing resilience as dynamic and evolutionary process (Martin, 2011).

Figure 06: Generic trajectories of territorial resilience



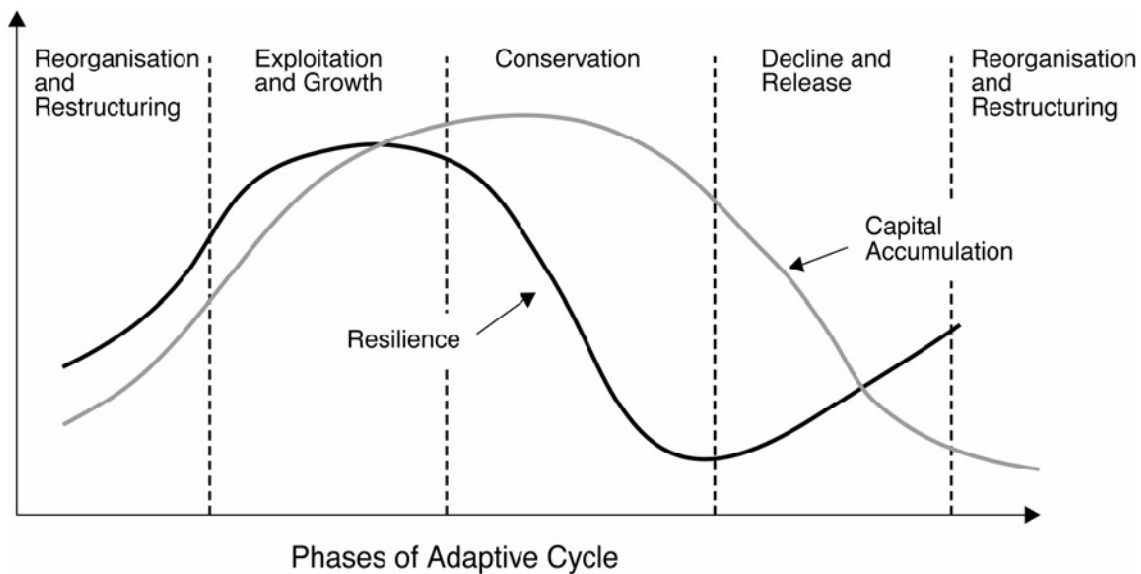
(Source: Simmie and Martin, 2010)

Adaptive resilience as an evolutionary approach to economic change seemed to be drawing attention of the most of authors (Dawley et al., 2010). Given the recognition that “regional economies evolve and move along open-ended developmental trajectories with an unknown endpoint” (Hudson, 2010: 3), proponents of an evolutionary approach understand the economic landscape as a “complex adaptive system” (Martin and Sunley, 2006: 573) which “can never be in equilibrium” (Dawley et al., 2010: 654). Furthermore, “a resilient region is not just economically successful but maintains economic success over the long term in face of the inevitable adaptation required by changes in international competition, shifts in consumer demand and other such shocks to the system” (Christopherson et al., 2010: 6). Authors argued that it was wrong considering resilience as an ability following an economic

shock to return to the previous equilibrium. Instead, they pointed adaptation as more useful concept in analysing economic resilience (Christopherson et al., 2010).

Likewise, in literature notions of path dependency, variety and adaptive cycles are relating to the one of economic resilience of territories. Path dependency or how the past shapes the future and its three dimensions, appear applicable to resilience thinking (Dawley et al., 2010). Firstly, shocks are often intertwined with the longer running processes of change (Pendall et al., 2008). For example, lost of jobs in a factory of an old industrial town is actually part of a wider process of deindustrialisation and economic change (Hudson, 2005; Pike, 2005). Secondly, vulnerability can be a result of functional, cognitive and political lock-ins that “ossifies over time, undermining previous growth paths and inhibiting adaptive behaviours” (Dawley et al., 2010: 656). To illustrate, specialisation of a town in one sector that fails to adapt to the context of global competition due to economic, social and/or institutional outlooks. Some authors identified delocking mechanisms such as drawing upon innovation, embedding external resources and diversification of economic activities (Martin and Sunley, 2006). Finally, resilience is based on constant change rather than on continuity. The emergence of a new industry or sectorial niche is stimulated by already existing resources, skills and experiences that gradually shape the dynamics of a town (Dawley et al., 2010). Variety is a second line of analysis in understanding resilience. “The variety of sectors and firm behaviours within a local or regional economy help support the argument that diversified economies are more adaptable because they act as a shock absorber, dissipating negative effects across an array of economic activities and places rather than concentrating and reinforcing them, and so helping to speed up any recovery therein” (Dawley et al., 2010: 657). The last adaptive cycles is a framework developed by Simmie and Martin (2010) that is to explore the change over time of sectorial resilience (Figure 07). Four phases of resilience have a “causal explanation behind the cycle and that is one of a growth and specialisation, leading to increased connectedness and dependency between firms which eventually leads to a more rigid and less adaptive system, hence reducing resilience to a shock or longer term structural decline” (Dawley et al., 2010: 659).

Figure 07: Resilience as a process – variations in resilience across the adaptive cycle



(Source: Simmie and Martin, 2010)

Another perspective on resilience comes from group of authors developing the notion of *territorial dilemma*. More in particular, resilience depends on the way key actors solve “territorial dilemmas” (Hamdouch et al. 2012) (Table 05). The solutions for solving territorial dilemmas that are characterized by specific contexts, temporalities and choices of actors, determine the resilience of territory (Hamdouch et al., 2012). The first territorial dilemma is the definition of the differentiation core. Actors’ choices to strengthen territorial distinctiveness, attractiveness and assets through reinforcing the existing resources, shift to new fields of activities, attracting newcomers and business, or combination of previously mentioned. The second territorial dilemma is adaptation and innovation strategy chosen to adapt to shocks (static resilience strategy) or to proactively embrace globalization (dynamic resilience strategy). In the first case, actors are in favour of defending local amenities, tradition and soil, while in the second case, actors are seeking to break with the existing in order to seize opportunities offered by globalization. Tools of these strategies can be various: i.e. development of clusters, building R&D, creative industries, integration of social cohesion, quality of life, environment-friendly production, etc. The third territorial dilemma is referring to the degree of openness of the territory and its networks that can determine the

nature of resilience dynamics. Thus, actors can encourage competition or autonomy (Hudson, 2010) through cohesion of inside actors and networks. Actors can also cooperate with other territories through outside networks; or they can find a way in-between competition and cooperation. The last territorial dilemma includes the timing and pace of resilience dynamics. In that case speed and time horizon (long, medium, short term) of the implementation of strategy affects the resilience of territories (Depret and Hamdouch, 2009, 2011; Hamdouch et al., 2012).

Table 05: The resolution of four territorial dilemmas of resilience

| Nature of territorial dilemmas      | Scope of configurations and potential trajectories |                       |                         |
|-------------------------------------|----------------------------------------------------|-----------------------|-------------------------|
| Core of territorial differentiation | Specialisation                                     |                       | Diversification         |
| Idiosyncratic Strategy              | Adaptation / convergence                           | Reaction / divergence | Pro-action              |
|                                     | Routine / continuity                               |                       | Rupture / “reinvention” |
| Degree of territorial “openness”    | Competition                                        | “Coopetition”         | Cooperation             |
|                                     | Proximity                                          |                       | Mobility / “Nomadism”   |
|                                     | Local                                              | “Glocal”              | Global                  |
|                                     | Centripetal forces                                 |                       | Centrifugal forces      |
| Speed and <i>Timing</i>             | Slow adaptation                                    |                       | Quick adaptation        |
|                                     | <i>Short term</i>                                  | <i>Medium term</i>    | <i>Long term</i>        |

Source: Hamdouch et al., 2012

Hamdouch, Depret and Tanguy (2012) concluded by drawing the difference between resilient territories and territorial resilience: “resilient territories are those that play an active role in deployment of globalisation, and that are able, in turn, to benefit from it for consolidating their future capabilities of resilience, through building on a genuine dynamics of differentiation and at the same time of openness vis-a-vis other territories” (Hamdouch et al., 2012: 20). On the other hand “territorial resilience requires a dynamics that should be at the same time: collective (density and quality of local and extra-local networks, processes of coordination and reciprocal commitments among actors, etc.); proactive (being able to re-think in advance or re-cast rapidly the territory and share a vision of its future; pragmatic (dealing smartly with the unexpected opportunities and constraints), and realistic (avoid the

pitfalls of looking for miracles, making chimera and committing in ambitious but hazardous policies and strategies)” (Hamdouch et al., 2012: 20).

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#### 1.4.2. MEASURES OF RESILIENCE

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For Christopherson, Michie and Tyler (2010) the success of a territory can be measured by current and past economic growth, employment rates, standards of living and quality of life. However, the difficulty comes from judging whether such success will be maintained in future in face of new challenges. Authors suggested two approaches to that issue. One way is to examine which town proved resilient in the past and to learn lessons from them; while the other way is to explore ability to adapt to whatever shock may arrive in future (Christopherson et al., 2010). Some of the factors that enable the resilience of territories have already been mention in the previous chapter. However, the literature listed some more such as: 1) strong innovation system (Howells, 1999; Clark et al., 2010); 2) creation of learning region (Archibugi and Lundvall, 2001); 3) skilled, innovative and entrepreneurial workforce (Patridge, 2012; van Winden, 2012); 4) diversified economic base, not over-reliant on a single industry (Floch and Morel, 2007; Simmie and Martin, 2010; Demazière and Hamdouch, 2012; Hamdouch et al., 2012); 5) successful university with strong links with local economies (Christopherson et al., 2010); 6) local policy in favour of industry and innovations (Michie and Oughton, 2001); 7) creativity and creative class (Florida, 2002).

In addition to attempts for resilience measurements, in 1994 UN Conference on Environment and Development had a special overlook on sustainability of small island developing states since they were identified as to be more economically vulnerable than other groups of countries. The outcome of the conference was the development of vulnerability index for small islands developing states. Within the conference scope, drivers of economic vulnerability were features as follows: a) high degree of economic openness rendering these states particularly susceptible to economic conditions in the rest of the world; b) dependence on a narrow range of exports, giving rise to risks associated with lack of diversification; c) dependence on strategic imports, in particular energy and industrial supplies, exacerbated by limited import substitution possibilities; d) insularity, peripherality and remoteness, leading to high transport costs and marginalization from the main commercial centres (Briguglio, 2004). What was particularly highlighted and common to medium-sized towns, was the recognition

that small states tend to be vulnerable because of their small size and insularity. Thus, they need to find export markets due to their small domestic market and lack of natural resources. At the same time, it was stated that the small size of the market limits the possibilities for diversification, attraction for foreign investment, and ability to benefit from economies of scale; as well as to the prevalence of natural monopolies and oligopolistic structures (Briguglio, 2004).

The economic vulnerability index developed by Briguglio, Commonwealth Secretariat and Crowards, include variables relating to: 1) economic openness – the degree to which a state is susceptible to economic conditions in the rest of the world. It is measure by exports, imports as a percentage of GDP; 2) export concentration – the extent to which a country lacks export diversification (trade in services included), which is measured by the export concentration index devised by UNCTAD (United Nations Conference on Trade and Development); 3) dependence on strategic imports – the extent to which a country’s livelihood depends on imports especially on imported energy, industrial supplies and food; 4) peripherality associated with insularity and remoteness, leading to high transport costs and marginalisation. It is measured by the ratio of FOB/CIF factors and the ratio of transport and freight costs to imports (Briguglio, 2004).

An alternative to vulnerability index was proposed by the Committee for Development Policy of the UN ECOSOC (United Nations Economic and Social Council) based on variables: share of manufacturing and modern services in GDP, merchandise export concentration, instability of agricultural production, instability of exports of goods and services, and population size. “The CDP Vulnerability Index assigns importance to instability, which implies that countries with relatively unstable export growth or agriculture production will register higher vulnerability scores. [...] The aim of the index is not only to capture the susceptibility to external shocks beyond domestic control, but also to measure the elements of structural fragility which render a county exposed to external shocks. The index is also assumed to capture the structural handicaps, explaining high exposure of the economy, namely economic smallness, which is measure with a population variable” (Briguglio, 2004: 5).

Based on vulnerability index, Briguglio (2004) defined four possible scenarios into which local economies may be placed according to their vulnerability and resilience characteristics (Table 06): 1) self made: highly economically vulnerable but at the same time have built their



economic resilience through the adoption of appropriate policies that enable them to cope with or withstand the effects of their inherent vulnerability; 2) prodigal son: relatively low degree of inherent economic vulnerability but whose policies are deleterious to economic resilience, thereby exposing them to the adverse effects of shocks; 3) best case: inherently vulnerable and which are relatively well governed economically; and 4) worst case: inherently high vulnerability by adopting policies that run counter to economic resilience (Briguglio 2004).

Table 06: Four possible scenarios with regard to vulnerability and resilience

|                                          | Territories that adopt policies to withstand vulnerability | Territories that adopt policies that exacerbate vulnerability |
|------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------|
| <b>Inherently vulnerable territories</b> | The “self-made” scenario                                   | Worst case scenario                                           |
| <b>Inherently resilient territories</b>  | Best case scenario                                         | The “prodigal son” scenario                                   |

(Source: Briguglio, 2004)

To conclude, the economic development of medium-sized towns is path-dependent, especially in terms of previous history of economic specialisation. Each town has its own development trajectory that is more or less sensitive to external shocks depending on town’s resilience. Studies have showed that diversity of economic activities provides opportunities to change and adapt development trajectory. On the other hand, the most vulnerable towns are those dependent on mono-industrial sector in decline such as traditional manufacturing. “Towns are challenged by a need to restructure and diversify their economic base while facing out-migration and a loss of financial capacity. Delocalisation of manufacturing has led to a loss of skilled jobs and the destruction of human capital. Outsourcing of the manufacturing of specific components has had similar negative consequences, with a loss of tacit production knowledge and the replacement of skilled production work by low-skilled assembly work. [... Thus,] to diversify their economies, towns have supported innovation and creation of stronger networks of local and global economies” (European Commission, 2011: 49).

## SECOND CHAPTER: SUGGESTED METHODOLOGICAL APPROACH

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Research questions “What are characteristics of economic development and resilience of medium-sized towns? Is it possible to draw some models of medium-sized city based on resilience, attractiveness and diversity of economic activities?” were addressed in this thesis by a comparative analysis of two medium-sized towns in France.

Research strategy was based on six main stages:

- Exploration of literature relating to: medium-sized towns, economic development and economic resilience.
- Creation of a system of indicators of economic development dynamics settled within the framework of two dimensions: degree of attractiveness and degree of diversity.
- Selection of cases limited to two medium-sized towns in Centre region in France: Montargis and Vendôme.
- Conducting quantitative analysis of dynamics of economic development on cases based on a system of indicators: a) analysis of historical and geographical context; b) analysis of demographical dynamics; c) analysis of spatial dynamics; d) analysis of business dynamics; and e) analysis of institutional dynamics.
- Creation of typology based on their degree of attractiveness and degree of diversity.
- Exploration of approaches in selected cases to solve territorial dilemmas of economic resilience.

### 2.1. STEP I: LITERATURE RESEARCH

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Exploration of literature was based on two approaches: a) search based on direct key words; and b) search based on indirect key words. More precisely, direct key words referred to sources treating definition of medium-sized towns, economic development of medium-sized towns and economic resilience of medium-sized towns as their main subjects. That literature had in its titles, summaries and key words some of these terms: 1) small town, medium-sized town, intermediate city, edge city, secondary city, in-between city, peri-urban town, satellite

town, etc.; 2) local comparative advantages, deindustrialisation, clusters, local production system, local heritage, local development, rural economy, agricultural business, endogenous development, local economy, residential economy, productive economy, etc.; 3) economic resilience, regional resilience, regional risks, industrial resilience, industrial, decline, regional innovation strategy, regional evolution, etc.

Likewise, indirect key words referred to sources treating definition of medium-sized towns, economic development of medium-sized towns and economic resilience of medium-sized towns as part of broader subjects. That literature listed in its titles, summaries and key words, terms such as: 1) urban hierarchy, centrality, world city, city-region, urban typology, urban function, agglomeration, metropolis, urban sprawl, rural area, hinterland, large city, etc.; 2) intermediation, urban-rural, remoteness, glocal, decentralization, urban positioning, local policies, centrality, proximity, economy of agglomeration, economy of localization, etc.; 3) economic adjustment, economic shocks, hysteresis, path dependency, urban disaster assistance, business cycle, stability of economic systems, growth dynamics, cyclical shocks, etc.

Main sources consulted for this stage were: a) journals on economic development, urban and regional studies, etc.; b) online databases (JSTOR, EBSCO, ScienceDirect, Wiley Online Library, etc.); c) French public database (La Documentation française, INSEE, Persee, etc.), d) Official reports (DATAR, INSEE, Chambers of trade and industry, Regional observatory, Economic research institute, ESPON, ATTRACT, etc.); e) forums and workshops (forum “Villes petites et moyennes, un regard renouvelé”, in Tours, “Les Sixiemes Journées de la Proximité”, Poitiers, AESOP in Paris, “Projet de Fin d’Etudes” Ecole Polytechnique, Tours, etc.)

## 2.2. STEP II: SYSTEM OF INDICATORS

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A basis of our system of indicators was a framework already developed by a working group at the Department of Ecole Polytechnique in Tours.

System of indicators used for the purpose of this research was consisting of 25 indicators, divided among four themes and two variables. Themes that our indicators referred to were as

follows: 1) demography; 2) space; 3) business; and 4) institutions. Likewise, indicators were also divided to point out the degree of attractiveness and the degree of diversity of economic development (Table 07).

Table 07: System of indicators for analysis of dynamics of economic development based on four themes and two variables

| theme/variable      | ATTRACTIVENESS |                                                                                | DIVERSITY |                                                                               |
|---------------------|----------------|--------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------|
| <b>DEMOGRAPHY</b>   | ind 01         | Growth rate of population                                                      | ind 15    | Population by socio-professional category                                     |
|                     |                |                                                                                | ind 16    | Population by education level                                                 |
| <b>SPACE</b>        | ind 02         | Migration home-work of working population (arrivals per leavings)              | ind 17    | Classification of activity zones                                              |
|                     | ind 03         | Number of equipment, amenities and services                                    |           |                                                                               |
| <b>BUSINESS</b>     | ind 04         | Number of major local and international investors                              | ind 18    | Employment by in-place economy and productive economy                         |
|                     | ind 05         | Number of tourists                                                             | ind 19    | Employment by sector                                                          |
|                     | ind 06         | Creation rate of firms and organizations                                       | ind 20    | Firms and complementary organizations by sector                               |
|                     | ind 07         | Number of local firms in clusters, SPL and production of labelled products     | ind 21    | Top employers                                                                 |
|                     |                |                                                                                | ind 22    | Clusters, SPL, labelled products by sector                                    |
| <b>INSTITUTIONS</b> | ind 08         | Number of education and R&D institutions                                       | ind 24    | Education branches, offered specialisations in education and R&D institutions |
|                     | ind 09         | Number of students and researchers                                             |           |                                                                               |
|                     | ind 10         | Number of financial institutions, chambers or antennas                         | ind 25    | Number of events (cultural, sport, etc.)                                      |
|                     | ind 11         | Number of activity zones                                                       |           |                                                                               |
|                     | ind 12         | Average price for land and real estate m <sup>2</sup>                          |           |                                                                               |
|                     | ind 13         | Local tax rate for land and real estate                                        |           |                                                                               |
|                     | ind 14         | Number of memberships in associations, federations, and twin towns cooperation |           |                                                                               |
|                     |                |                                                                                |           |                                                                               |

In addition to the system of indicators, we defined eleven contextual indicators that precede the analysis of economic development and resilience. Those indicators treated information on historical and geographical context (Table 08).

Table 08: Contextual indicators

| NUMBER | INDICATORS                                              |
|--------|---------------------------------------------------------|
| ind 01 | Official status (prefecture, sub-prefecture, no status) |
| ind 02 | Number of communes                                      |
| ind 03 | Total population number                                 |
| ind 04 | Spatial position (transport connections)                |
| ind 05 | History of economic development                         |
| ind 06 | Average annual natural balance rate                     |
| ind 07 | Average annual migration rate                           |
| ind 08 | Rate of local unemployment                              |
| ind 09 | Average income net per household                        |
| ind 10 | Dependency ratio                                        |
| ind 11 | Heritage                                                |

### 2.3. STEP III: CASE SELECTION

In selecting cases to test established system of indicators, we were following several criteria established by DATAR (De Roo, 2007) and ESPON (IRO, 2006):

- a. **quantitative criterion:** population size threshold of medium-sized towns considering French context from 20,000 – 200,000 inhabitants;
- b. **administrative criterion:** administrative status of municipalities;
- c. **morphological criterion:** continuity of the built-up area;
- d. **functional criterion:** existence of labour market and daily commuting flows;
- e. **pragmatic criterion:** availability of data, location in Centre region in proximity to Paris.

For the purpose of this research, a scale of employment zone (fr. *zone d'emploi*) was used for analysing dynamics of economic development of both Montargis and Vendôme. This scale seemed the most appropriate one since it concentrated on the economic dimension within a geographical and administrative area, i.e. manpower and job offer. According to INSEE “distribution in employment zones is convenient for studies of the local labour market. It also defines the relevant territories for local diagnostics and can guide the delimitation of territories for the implementation of territorial policies initiated by government or local

actors” (INSEE, 2012). Moreover, ESPON has been using the criterion of migration of working population in designing typologies of European cities. Functional Urban Areas (FUAs) are one of such spatial units. However, lack of statistical data for French FUAs, obliged us even more to find a similar scale provided by INSEE.

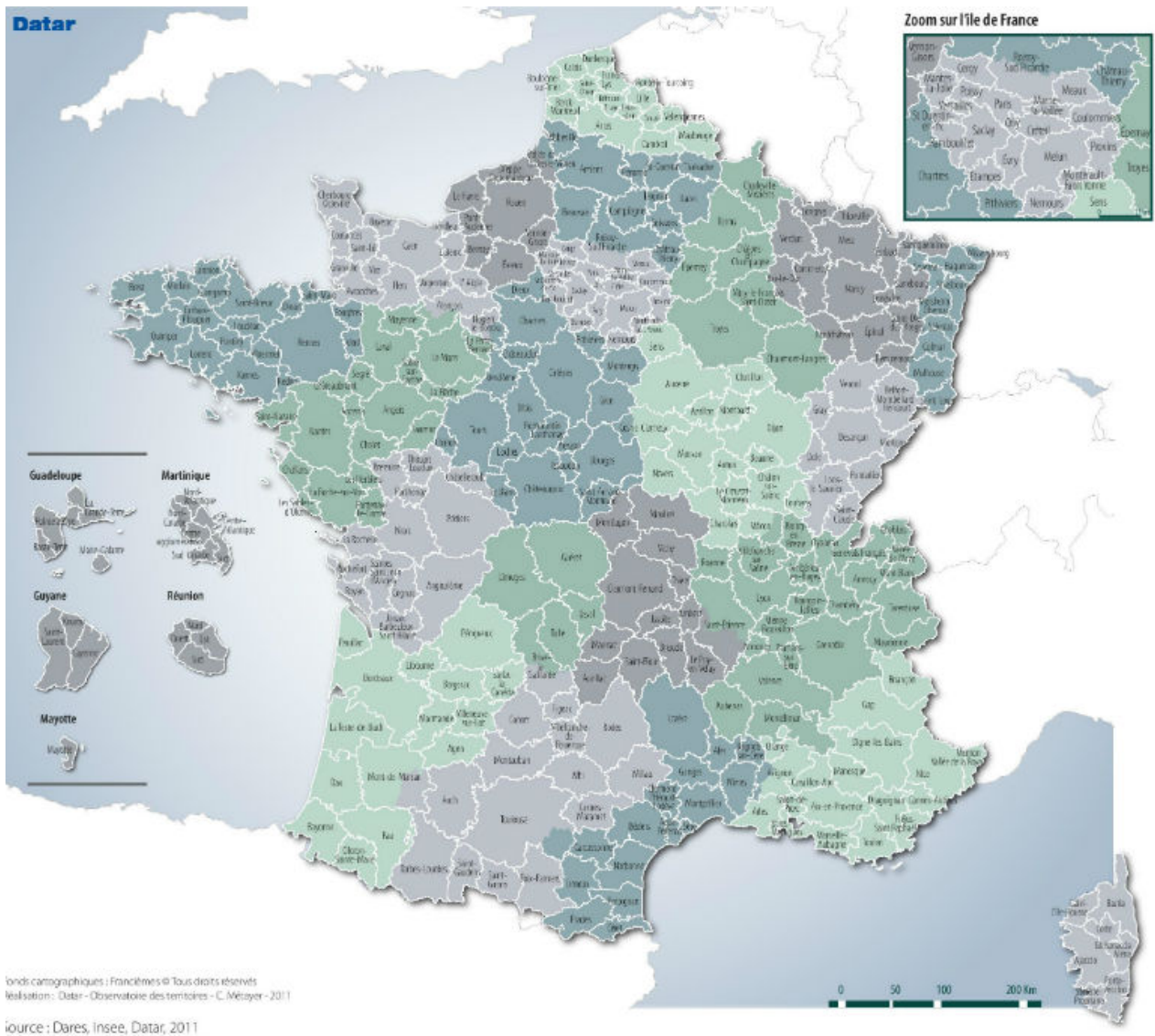
“*Employment zone* is a geographical area within which the most of working population live and work and in which organizations can find most of the manpower needed to fill job offers. The zoning is defined for both metropolitan France and overseas; and there were total of 322 employment zones in 2011” (INSEE, 2012).

#### **Functional Urban Area (FUA): Concept proposed by ESPON project 1.1.1**

Using municipality as a scale of analysis has often been considered as being too small for exploring regional development trends. On the other hand, alternative levels of spatial analysis such as NUTS 3 units were “too heterogeneous to portray the actual spatial patterns of society” (Antikainen, 2005: 447). Therefore, Functional Urban Area (FUA) considered the concept of travel-to-work as its principal criterion. “Principally, it is an agglomeration of work places attracting the work force from the surrounding area. If a certain share of the labour force in a defined fringe area are out-commuters it is attached to the municipality to which the largest portion of commuters goes. This method is good for defining the most pronounced employment centres to which the simpler threshold level of commuting applies. In many international studies, a commuting-flow threshold of either 15 or 20% is used to determine whether a municipality is attached to a particular centre or not” (Antikainen, 2005: 448).

Therefore, this research analysed dynamics within employment zones of two medium-sized towns located in Centre region in France: Montargis and Vendôme.

Figure 08: Employment zones in France in 2010



(Source: Observatoire des Territoires, 2010)

## 2.4. STEP IV: QUANTITATIVE ANALYSIS

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Employment zones Montargis and Vendôme were approached from two angles: 1) contextual analysis; 2) analysis of dynamics of economic development.

Contextual analysis was based on contextual indicators and exploration of historical and geographical characteristics of both zones. Sources for this type of analysis were available on websites of municipalities, their tourist offices, promotional brochures and programs

Research on economic development was directly referring to established system of indicators. Thus, quantitative analysis was conducted within four categories related directly to economic development:

- a. analysis of demographic dynamics;
- b. analysis of spatial dynamics;
- c. analysis of business dynamics;
- d. analysis of institutional/organizational dynamics

## 2.5. STEP V: TYPOLOGY DESIGN

---

Based on system of indicators distributed in order to indicate the degree of attractiveness and the degree of diversity, this research proposed a town typology as follows:

- **TYPE I: Degree of attractiveness to population & Degree of diversity of population:**  
Town can be more or less attractive to population, which can be observed in positive or negative growth rate of population during a period of time. Therefore, compared to other towns and/or regional-national average, degree of attractiveness to population can be low, average or high. On the other hand, town can have more or less



diversified distribution of population in terms of education or professions. The degree of diversity is indicated by Gini coefficient<sup>3</sup>.

- **TYPE II: Degree of attractiveness of space & Degree of diversity of space:** Area can be more or less attractive to working population living in other employment zones, but travelling to that particular area to work. Thus, ratio of arrivals and leavings of working population indicates the degree of attractiveness. Also, number and spatial distribution of equipment, services and amenities within the zone dictates the degree of attractiveness to residents and out-comers. Likewise, vocation of activity zones located in employment zones indicated a degree of spatial diversity.
- **TYPE III: Degree of attractiveness to business & Degree of diversity of business:** Town can more or less attract investors and tourists, and it can more or less encourage engagement in business activities. On the other hand, business activities can be more or less diversified between in-place economy or productive economy, as well as it can encourage sectorial specialization or dispersion of employment among several sectors.
- **TYPE IV: Degree of promoting attractiveness & Degree of promoting diversity:** Town can be more or less engaged in partnerships and networks with other towns; it can implement decisions and initiatives to attract students, researchers, and investors. Furthermore, town can promote diversity or specialisation through programmes and branches of educational and institutions or agendas (i.e. cultural, sport, or business events).

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<sup>3</sup> Gini coefficient (also Gini index or Gini ratio) is a measure of statistical dispersion indicating the inequality among values of a frequency distribution. Gini coefficient of zero expresses perfect equality where all values are the same; while Gini coefficient of one expresses maximal inequality among values (Gini, 1921).

## 2.6. STEP VI: RESILIENCE SCENARIOS

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Analysis of resilience was based on solution applied to solve four territorial dilemmas, while taking into account specificities in context, time, and decisions of key actors. Hence, economic resilience was considered within results of analysis of context and economic development in all four aspects (demographic, spatial, business and institutional dynamics) as follows:

- a. **Resolution of territorial dilemma no. 1:** Definition of territorial “core of differentiation”;
- b. **Resolution of territorial dilemma no. 2:** Implementation of strategies;
- c. **Resolution of territorial dilemma no. 3:** Degree of territorial openness;
- d. **Resolution of territorial dilemma no. 4:** Speed and timing of resilience dynamics;

## THIRD CHAPTER: TEST OF THE METHODOLOGY ON TWO FRENCH CASES: MONTARGIS AND VENDÔME

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In following chapter, we tested our methodology on two medium-sized towns in France: Montargis and Vendôme. Firstly, we set two towns within their geographical and historical context by presenting the main historic events and geographic characteristics shaping the territory. Secondly, we conducted a comparative analysis of economic development based on the system of indicators, which allowed us to draw some main conclusions on characteristics of development of Montargis and Vendôme and their economic resilience.

### 3.1. SETTING THE CONTEXT: ZE MONTARGIS

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Situated in the north-eastern part of Loiret department (Figure 09), the employment zone Montargis (further in text: ZE Montargis) is directly connected to neighbouring regions Ile-de-France and Burgundy. That strategic position compared to other employment zones in the same region played an important role in development of ZE Montargis. The zone belongs to Loing and Seine basin that also differentiates it from the rest of the region situated in Loire basin. ZE Montargis encompasses 95 municipalities with 122,767 inhabitants of which majority lives in the agglomeration of ten municipalities: Amilly, Cepoy, Chalette-sur-Loing, Conflans-sur-Loing, Corquilleroy, Montargis, Pannes, Paucourt, Villemandeur and Vimory. Municipality of Montargis is the biggest among them and it is as well a sub-prefecture of Loiret department. Neighbouring city of Orléans is a prefecture of the department and a capital of the region.

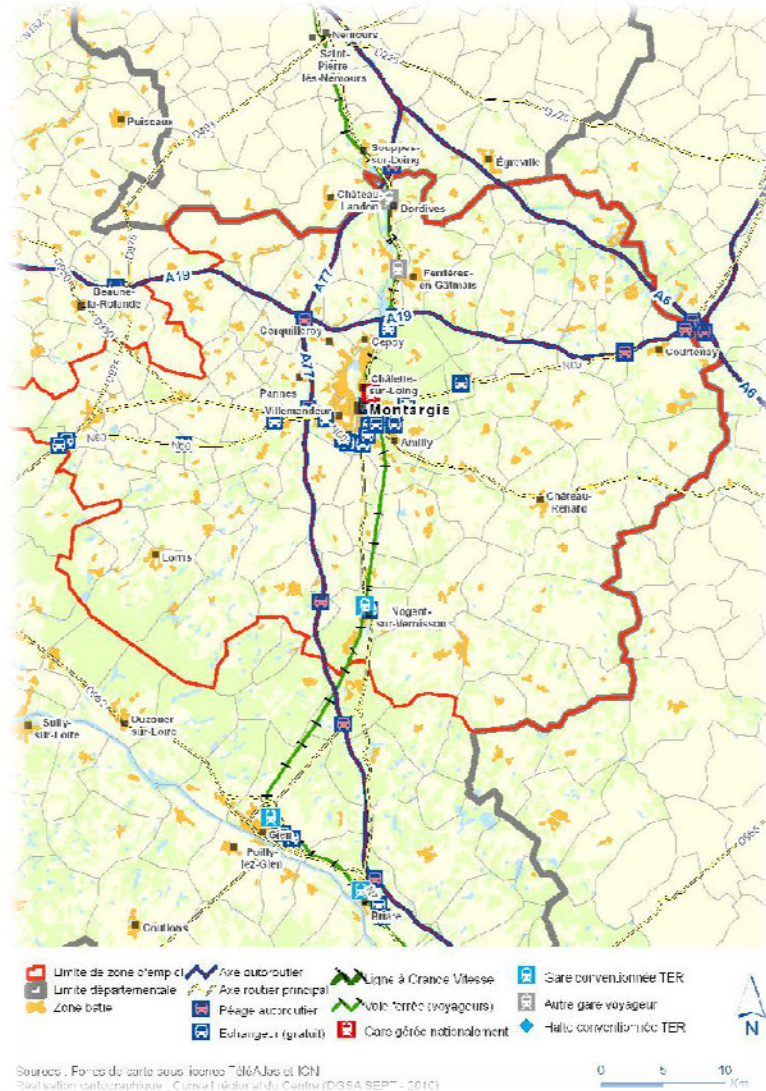
Figure 09: Location of ZE Montargis in Centre region



(Source: Observatoire Régional de la Formation et de l'Emploi, 2010)

Regarding its geographical position, ZE Montargis has an advantageous location of only 110 km from Paris. Other bigger neighbouring cities are Orleans and Gien to south, south-west, and Troyes to east in the neighbouring region Champagne-Ardenne. The area is situated at the crossroads of the national highways N7 and N60. It is also inter-connected by the network of seven motorways (A5, A6, A19, A29, A154). The national highway N7 and motorways A77 and A6 linking the zone with Paris region. In fact, motorway A6 of 30 km is connecting Paris to Lyon. There are more than 22 trains per day made by mainline trains or TER (line Paris-Nevers-Clermont). Due to its position on crossroad of national highways N7 and N60; TER train station Paris-Clermont, accessibility to the airports in Orly within less than 45 minutes, ZE Montargis has necessary infrastructure for connection of its territory to the surroundings (Figure 10). The zone is also part of an old county Gatinais with a large river system: Loing, Aveyron, Ouanne, Clery, Betz, Vernisson, Solin and Fusain; it is surrounded by eco-landscapes to the east and west (Gratinais), it has 14 parks and gardens, forests and valley of which the ones of regional importance are Montargis Forest and Loing Valley.

Figure 10: Transport infrastructure and connection in ZE Montargis



(Source: Conseil régional du Centre, 2010)

The first mention of the name of Montargis was in Cesar's *Commentaries* when he noted down the existence of the village and its king Moritas. During the period of the Middle Age, the town was a strategic protection line against foreign invasion. Montargis inhabitants proved their courage during the Hundred Years' War when they fought English army and by thus King Charles VII awarded the town with privileges and title *Montargis-le-Franc*. In 1604, King Henri IV connected two rivers Loire and Seine that had huge benefits for the town. Montargis and its traffic on river channels grew significantly and had an important role in trade exchange of the entire area until the arrival of railway in 1863. During the French

Revolution, there was a strong wish to constitute a new department called Loing of which the centre would be Montargis, but it failed so the town was attached to Loiret department. The presence of military barracks *Gudin* and the School of Gendarmerie marked the town in both socio-economic and architectural point of view until being closed in 2010. The closure of long-time standing military barracks happened as well in towns: Le Mans and Chatellerault.

The important moment in area's timeline was the arrival of American entrepreneur Hiram Hutchinson who settled in Montargis and in 1857 built a rubber factory. At first, the factory oriented on footwear market and started by producing 5,000 pairs of shoes per day. Later on, it specialized in materials for automotive industry and mobility market. During the 19<sup>th</sup> and early 20<sup>th</sup> century, the growing and diversified business activity in ZE Montargis, mainly industries such as textiles, leather, glass plants, and mechanical industries attracted new ones to the region (Conseil régional du Centre, 2010). After the Second World War new industries of electronics, plastics, pharmaceuticals and chemicals appeared. Another company saw as well its business opportunities in the area. Sanofi is the leading company in pharmaceutical products and human vaccines with commercial presence in 100 countries. In ZE Montargis it located its manufacturing and distribution centre of pharmaceutical products.

What is less known is the significant presence of Chinese community in ZE Montargis that goes back to the beginning of 20<sup>th</sup> century. Li Shizeng arriving from China to Paris and from there to Montargis to study botanic and agriculture encouraged mayor of Montargis to develop closer relations with China by organising "Work-Study Movement". The aim of the movement was to offer young Chinese an opportunity to get better education and work in France. In 1920 more than 2,000 Chinese students came to France many of which worked in Hutchinson factory during the day, and studied during the evening. After discovering new western ideas and reforms, some of them returned to China and became highly positioned officials. To mention just some of them: Mao Zedong the leader of the Chinese revolution and a founder of the People's Republic of China, Zhou as Prime Minister, Deng as First Leader of China, Wang as famous theoretician, Cai as vice-president of General Assembly, etc. On the other hand, some of these students decided to stay in France and thus became important members of society.

Since 1968 population in the zone has increased from 90,684 to 122,767 (in 2008); the average annual natural balance rate was positive (+0.1% for period 1999-2008) as well as the average annual migration rate (+0.7% for period 1999-2008). In ZE Montargis there were 82

persons -19 and +65 per hundred persons of age 20-64. Therefore, zone's dependency ratio in the same year was 8 points higher than regional average (regional dependency ratio was 74). The rate of unemployment has been increasing since 2003. In 2011, the unemployment rate was 11.1% compared to 8.3% in the region. When it comes to the average household, there was a slow increase of households with couples without a child (from 46% in 1999 to 49% in 2008) with average annual income net of EUR 21,652 (3% lower than the regional average).

In terms of natural and symbolic heritage and amenities, ZE Montargis has a significant potential:

- two eco-landscapes Gatinais East and Gatinais West;
- one natural heritage inventory on the territory of 0.04 km<sup>2</sup> (fr. *ZNIEFF*);
- nodal areas of regional importance Montargis Forest and Loing Valley;
- recognized iconic environment: Acidophilous oak-hornbeam forests, wet meadows Molinie on the chalky, peaty or clayey-loam; alder-frênaies; oligotrophic and mesotrophic vegetation and amphibians;
- emblematic species: Belladonna, the Epipactis purple Barley in Europe, the Digital Yellow cudweed the woods; and Lucane Kite (beetle);
- Pralines Mazet with the tradition since 1636;
- Restaurant *La Gloire* in Montargis with 1 Michelin star;
- Michelin flowers (fr. *Les plus beaux detours de France*) for the most beautiful towns: 3 flowers to Montargis and Challette-sur-Loing, 2 flowers to Amilly and 1 flower to Pannes.

In ZE Montargis, nine authentic villages with mediaeval historical monuments and exceptional natural heritage have been recognized: Amilly, Cepoy, Challette sur Loing, Conflans-sur-Loing, Corquilleroy, Pannes, Paucourt, Villemandeur and Vilmory.

Cultural sites in the zone are as well numerous:

- House of Forest (fr. *Maison de la Foret*) in Paucourt,
- House of Nature and Water (fr. *Maison de la Nature et de l'Eau*) in Challette-sur-Loing ;
- Arboretum of Barres in Nogent-sur-Vernisson which attracts many tourists (14,000 entries in 2009);
- House of Art Crafts (fr. *Maison des Metiers d'Art*) in Ferrieres,

- House of Glass (fr. *Maison du Verre*) in Dordives ;
- Museum of Beekeeping (fr. *Musée vivant de l'apiculture gâtinaise*) in Chateaurenard;
- more than 192 cultural event for year 2012 among which the best known are Festival “MusiKair” in June and Festival “Jeune & Public” in January and February. In Amilly municipality, the important cultural event named “Fete de l’Europe” is organized every year in order to celebrate the twin towns’ partnership and intercultural dialogue

To conclude, ZE Montargis has the advantage of proximity to Paris (Ile-de-France in general), which has made it attractive to both population and business. Increasing population, positive annual natural balance rate and annual migration rate as well as the existence of transport infrastructure are mostly oriented towards the capital. More in particular, zone is attractive to population that is highly mobile (i.e. workers and students) and to retired population leaving the capital. Also, it is attractive to large groups looking for delocalisation of their production site out of Paris, and small firms having benefits from proximity to larger and denser market in Ile-de-France region. On the other hand, it has rich natural and historical heritage, and cultural agenda that promote local potentials out of the territory.

### 3.2. SETTING THE CONTEXT: ZE VENDÔME

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The employment zone Vendôme (further in text: ZE Vendôme) is situated on the north-western part of Loir-et-Cher department (Figure 11). It has a direct connection to neighbouring regions Touraine and Pays de la Loire. ZE Vendôme is well positioned and connected by SNCF train to cities Paris and Tours. The zone lies in Loir basin that divides it into numerous intersecting arms. ZE Vendôme includes 107 municipalities with 66,114 inhabitants. Majority of population lives in the agglomeration consisting of eleven municipalities: Azé, Lunay, Marcilly-en-Beauce, Saint-Firmin-des-prés, Saint-Ouen, Thoré-la-Rochette, Vendôme, Danzé, Rahart, La-Ville-aux-Clercs et Coulommiers-la-Tour. The municipality of Vendôme is a sub-prefecture of Loir-et-Cher department. The capital of the department is Blois, situated between cities Orléans and Tours.



Figure 11: Location of ZE Vendôme in Centre region



(Source: Observatoire Régional de la Formation et de l'Emploi, 2010)

ZE Vendôme is located 30 km north-west of the City of Blois and 170 northeast of Paris. Other bigger neighbouring cities are Orleans to east, Tours to south and Chartres to north. The zone is connected to its surroundings by a network of former road to Spain, the national road N10 (line Tours, Chartres and Paris); national road N157 (line Orleans, Le Mans and Rennes), and motorways A10 and A11 (connection with other neighbouring cities: Blois, Château-Renault, Chartres, Tours, Orleans and Le Mans). Railway network has two lines, the high speed train SNCF connecting the zone with Paris in 40 minutes, and train TER connecting Tours to Paris by going through Vendôme and Châteaudun (Figure 12). The landscape of the zone is dominated by crops, meadows and valleys (Loir Valley and Braye Valley). Also, the area is marked by three forest entities important both in terms of surface and ecological interest: forests of Montmirail, Fréteval and Vendôme. The area, especially Vendôme municipality has a high flood risk.

Figure 12: Transport infrastructure and connection in ZE Vendôme



(Source: Observatoire Régional de la Formation et de l'Emploi)

Latin *Vindocinum* was originally a Gallic oppidum replaced by a feudal castle. In the 5<sup>th</sup> century, Saint Bienheure introduced Christianity, and in 1030, the Abbey of the Trinity was founded. It was claimed that the abbey possessed a tear of Jesus that put the town on pilgrimage route. Due to its strategic position, the area saw several conflicts during the

middle Ages: wars between Normans and Bretons, France and the Plantagenet; as well as Hundred Years War. Thus, in 1277 Blanche of Castile and his son King Louis IX signed a peace treaty with the great vassals. During its history, the area passed by various marriages to the houses of Nevers, Preuilly and Montoire. In 19<sup>th</sup> century and the arrival of cavalry of 800 men to be stationed in former Benedictine house converted into barracks, the area was transformed. New bridges were constructed, streets of communes were gradually aligned and the track railway was completed by 1867. During the World War II, the area suffered a vast bombardment by German army but it finished by reconstruction of new districts and circulation.

Strong economic activities of the zone started developing in 15<sup>th</sup> century. Providing tiles, pottery and tannery at its beginnings to modern building materials for the entire Loire Valley, this area offered many job opportunities. The company Chavigny in St. Ouen is one of the first French traders of wood and building materials. Moreover, agriculture has dominated the local economy for a long time, but has converted to new values such as processing of poultry. The industrialisation, especially in the post-war period, came with the implementation of prominent factories Thales Avionics and Nacam (subsidiary of German Bosch Group). A difficult moment for the zone was the closure of the factory Thyssenkrupp Sofedit in 2009 due to economic crisis and decline of automotive industry. More than 120 jobs were cancelled and production lines moved to Le Theil in Orne and Sermaises in Loiret departments.

The population in the zone increased from 60,900 in 1968 to 66,114 inhabitants in 2008. The average annual natural balance ratio has been negative (-0.1%); and the average annual migration rate has been positive (+0.4%) since 1990. In ZE Vendôme, there were 85 persons -19 and +65 per hundred persons of age 20-64. That ratio is 11 points higher than the regional average (regional dependency ratio: 74). Unemployment rate in the zone was 7.5% that is below the regional average of 8.3%. When it comes to the average household in 2008, there was an increase of households consisting of pensioners (43%) with average annual income net of EUR 22,025 (1% below the regional average).

In terms of natural and symbolic heritage and amenities, ZE Vendôme has a significant potential:

- three eco-landscapes Grenne Vallye, Aigre Valley, and Loir Valley;
- two natural heritage inventory on the territory (fr. *ZNIEFF*);

- *Plessis Sasnieres Garden* is an ornamental garden with botanical collection of 3 ha;
- Michelin flowers (fr. *Les plus beaux detours de France*) for the most beautiful towns: 4 flowers to Vendôme municipality.
- labels: “*The most beautiful village in France*” (Lavardin); “*City of Art and History*” and “*Zero pesticide*” (Vendôme).

Cultural and historical sites in the zone are as well numerous:

- Commanderie d’Arville ;
- Musée-Spectacle Musiken-fête ;
- Botanic House Boursay;
- Chapel Saint-Jacques;
- Fortification Islette;
- Vendome castle;
- Abbey of the Trinity;
- Le Minotaure Theatre;
- more than 100 cultural event for year 2012 among which the best visited ones are *Prokino* in April (German language film festival), *Les Promenades Photographiques* from April until September, *Le festival Epos* (festival of short stories) in July, *Le festival du Film de Vendôme* (Film festival) in December, and *Les Rockomotives* (Rock music festival) in October-November.

In closing, due to its geographical location and transportation infrastructure, ZE Vendôme has been oriented towards Ile-de-France region and Tours. Industry has been part of its heritage since 15<sup>th</sup> century, thus during period of industrialisation, many large groups located their manufactures in the zone. Apart from developed industrial sector that saw the advantage in proximity to Ile-de-France and local know-how, and that has been the main driver of local economy, ZE Vendôme created cultural agenda to promote itself as creative place of film, photography, music and stories.

### 3.3. ANALYSIS OF ECONOMIC DEVELOPMENT: ZE MONTARGIS

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Analysis of economic development of ZE Montargis was based on the system of indicators. Four dynamics were explored: demographical dynamics, spatial dynamics, business dynamics and institutional dynamics.

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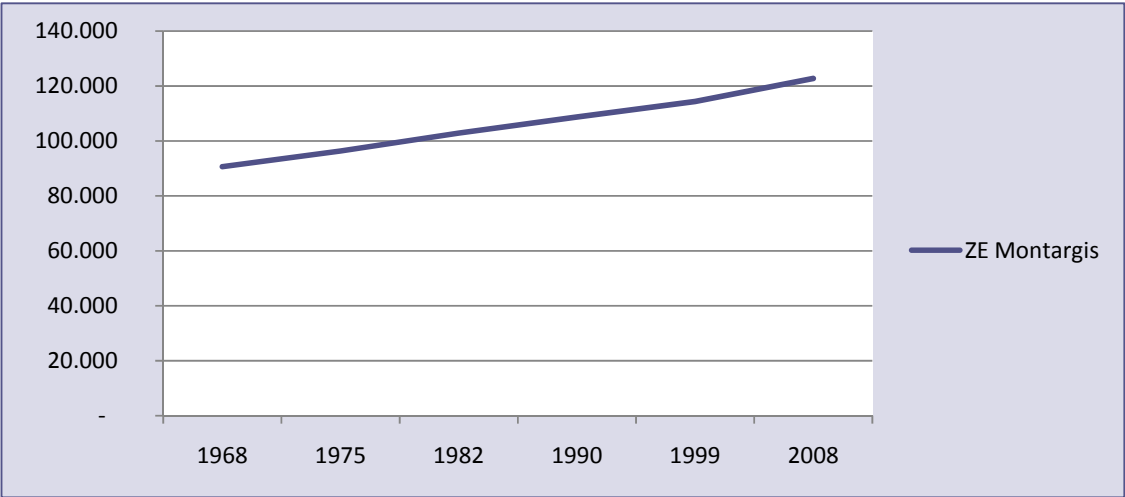
#### 3.3.1. DEMOGRAPHICAL DYNAMICS

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From 1968 until 2008 **the population in the zone increased** from 90,684 to 122,767; as well as the annual population growth rate (+0.8% in 2008). This growth in number of population in ZE Montargis was greater than the average of the region (the annual growth rate +0.4% in 2008) (Table 09).

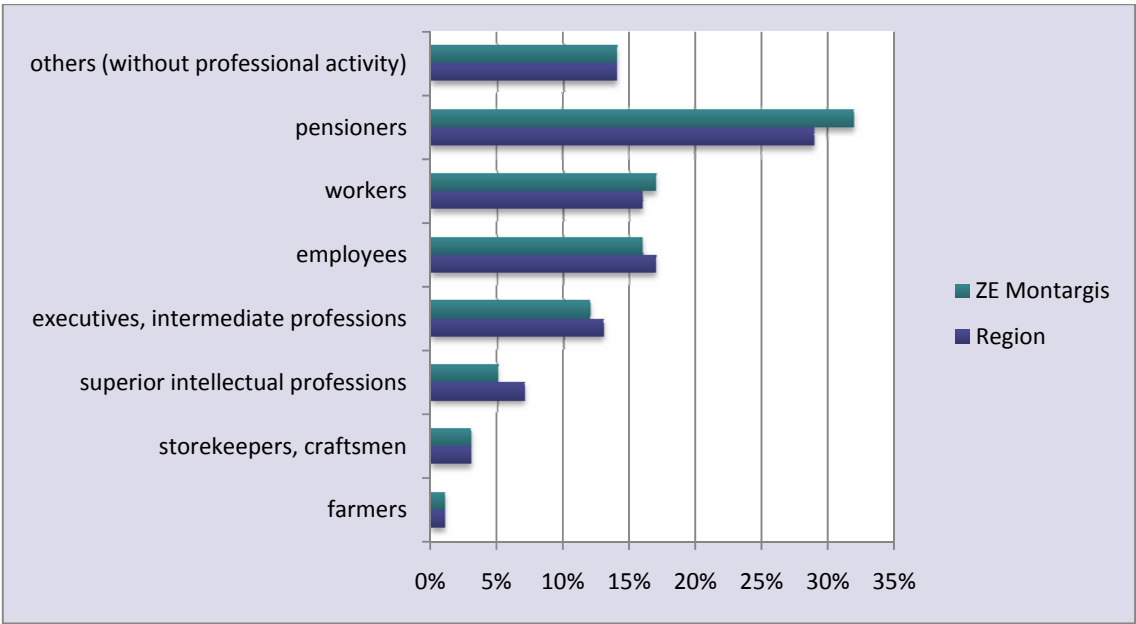
In 2008, majority of population had **professional or vocational certificate of secondary degree** (certificate of professional competence, CAP; vocational studies certificate, BEP). However, a significant percentage of population (22% of total population) did not have any education degree (above the regional average). Out of total population, 14% had diploma bac + 2 or superior to bac +2, which was below the regional average (Table 11). These results were complementary to the classification of population by professions. **Majority of population were pensioners or workers** and their percentage in total population was above the regional average. In contrast, percentage of superior and intermediate professions in total population was below the regional average (Table 10).

Table 09: Population growth in ZE Montargis (in number)



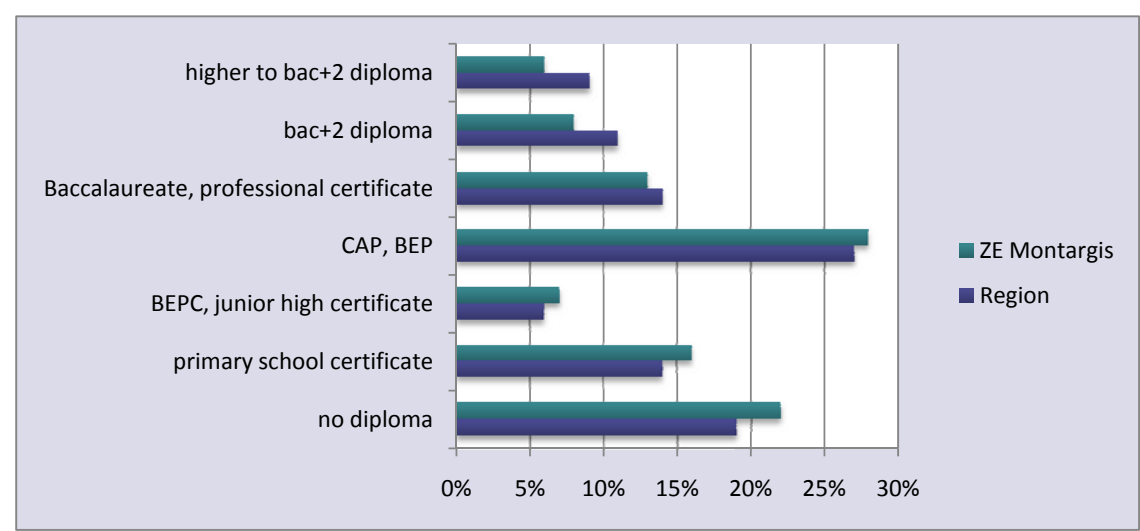
(Source: INSEE, 2010)

Table 10: Professions and socio-professional categories in ZE Montargis and Centre region in 2008 (in percentage)



(Source: INSEE, 2010)

Table 11: Education degree of the population age 15+ in ZE Montargis and Centre region in 2008 (in percentage)



(Source: INSEE, 2010)

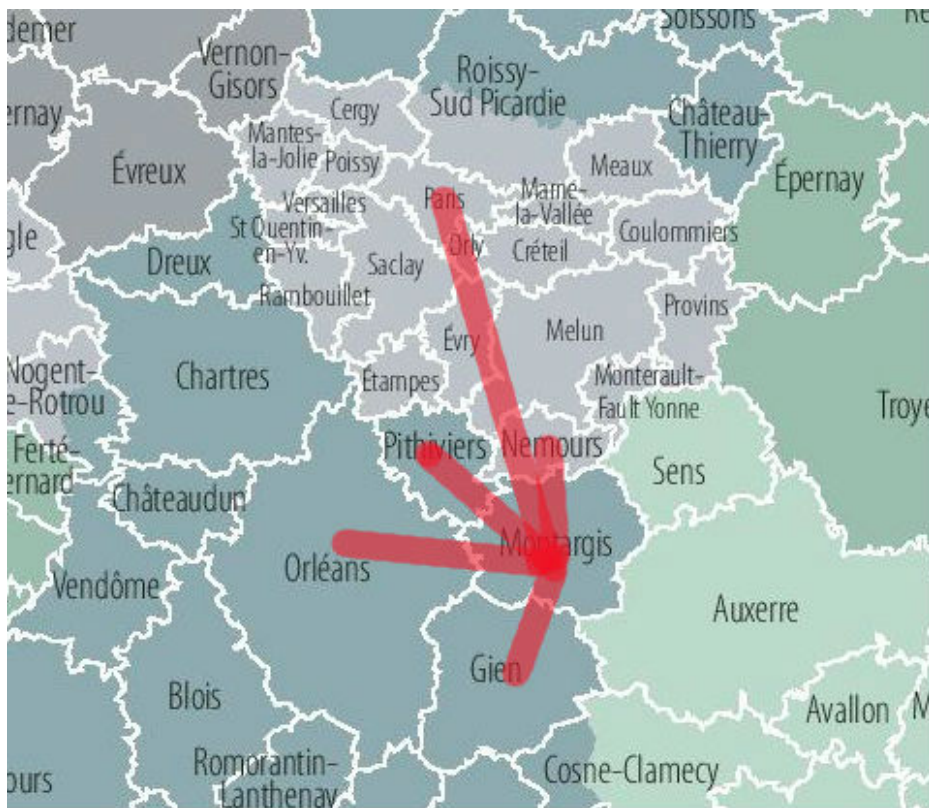
### 3.3.2. SPATIAL DYNAMICS

In 2007, **there was more migration of working population from the zone than to ZE Montargis**. More precisely, 10,480 (22%) of working population travelled out of ZE Montargis to work; compare to 5,290 (12%) that came to work in the zone (ratio 1 per 1.9 in 2007). Most of the working population that left the zone to work went to **Paris, Nemours, Orléans, Gien and Pithiviers** (Figure 13). Whereas, working population from other zones came from Gien, Ile-de-France, Bourgogne, Orléans and Pithiviers (Figure 14).

Comparing the migration of working population in 2007 with that in 1999, there was an **increasing trend of migration of working population out of ZE Montargis**. In 1999, there were 8,340 inhabitants of ZE Montargis that were working in other zones of employment; while 4,440 of working population came to work to ZE Montargis. Thus, the ratio was 1 per 1.8 in 1999.



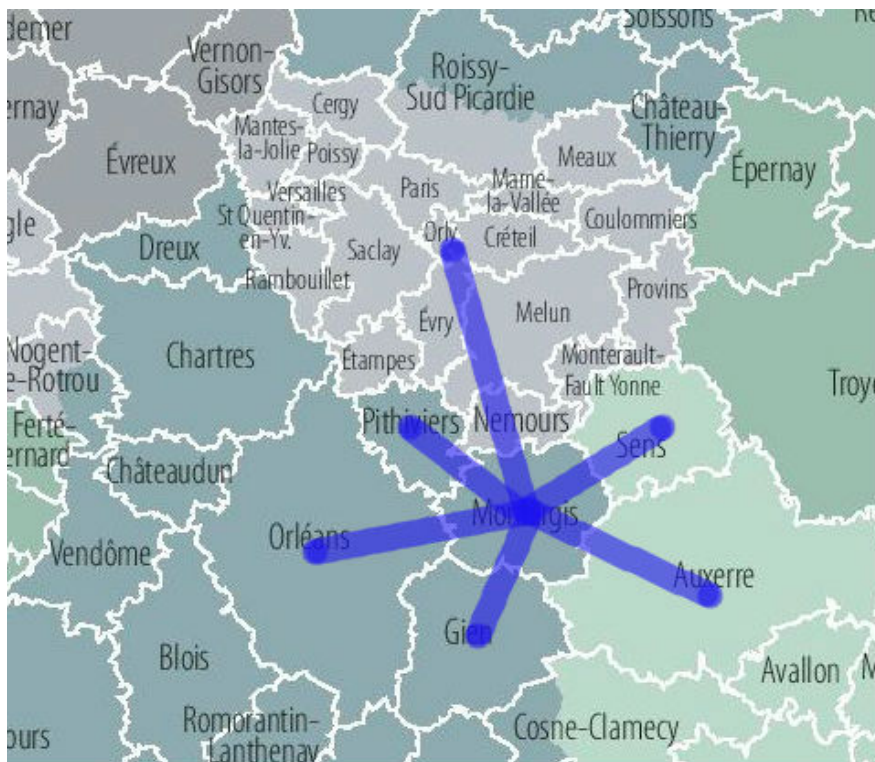
Figure 13: Migration of working population from ZE Montargis to other zones of employment in 2007



(Source: Conseil régional du Centre, 2010)



Figure 14: Migration of working population to ZE Montargis from other zones of employment in 2007



(Source: Conseil régional du Centre, 2010)

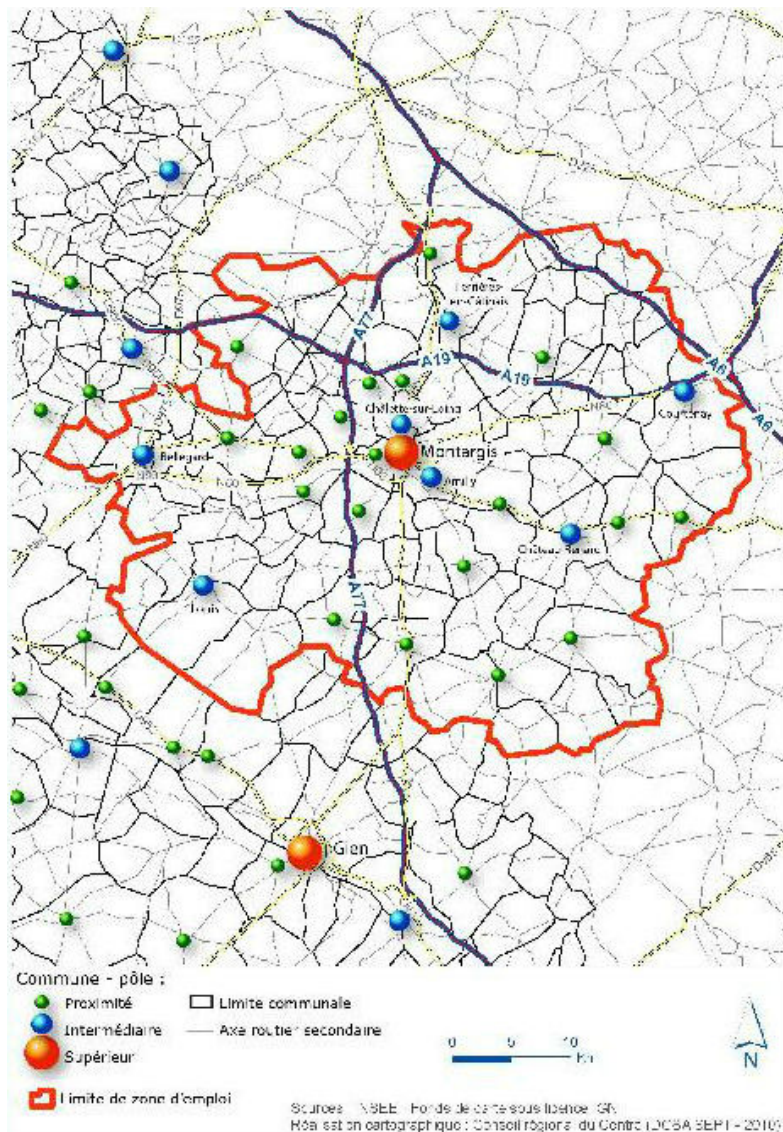
In ZE Montargis, **only Montargis municipality had equipment and services to population of upper range**<sup>4</sup>: hospital, clinic, six high schools and mediateque. Out of 95 municipalities in the zone, seven of them (Amilly, Bellegarde, Chateau-Renard, Courtenay, Ferrieres-en-

<sup>4</sup> INSEE classified equipment and services to the population based on the database „Base Permanente des Equipements“. Three levels of equipment and services were defined:

- Range of proximity: the post office, bank, savings bank, auto repair and farm equipment, bricklayer, plasterer painter, carpenter locksmith, plumber heating engineer roofer, electrician, hairdresser, restaurant, estate agent, supermarket, grocery, bakery, butchery.
- Intermediate range: cash, police, funeral directors, ITV, driving school, general contractor of the building, veterinary, laundry-dry cleaning, beauty care, supermarket, library stationery, clothing store, home furnishings shop, shop footwear, appliance store, furniture store, art store, sports and leisure, hardware store, drugstore, watch and jewellery.
- Upper range: police, ANPE, car hire-vans, temporary employment agency, hypermarket, frozen food, fish.

Gatinais, Lorris) provided intermediate range of equipment and services, while 20 municipalities had services of proximity within 15 minutes of range (Figure 15). However, spatial position of services is not balanced. Commercial zones were mostly situated on south as well as services from out of the zone (i.e. Fontainebleau, Melun and Paris) were competing with the ones existing in municipalities.

Figure 15: Equipment and services provided within ZE Montargis for the year 2010



(Source: Conseil régional du Centre, 2010)

As mentioned, municipality of Montargis had equipment of upper range such as hospital, clinic, six high schools and médiathèque. Moreover, Agglomeration Hospital Centre with emergency service was located in Amilly, but ZE Montargis lacks in general practitioners and nurses. In 2008, there were 89 doctor generalists on 122,767 inhabitants (1,380 inhabitants per general practitioner) and 95 nurses (1,292 inhabitants per nurse). Also, there were six local municipal markets: Montargis (2 markets), Chalette (2 markets), Amilly (1 market) and Cepoy (1 market) which had open days two days in a week.

When it comes to built amenities and provision of services and information, the entire zone counted 6 tourist offices, one Tourist Info-point and one Syndicate of Initiative. However, their central two-star-office was located in Montargis municipality. ZE Montargis offered 499 beds in 23 hotels (mostly two stars), 97 beds in a hostel and 499 places in 8 camping sites (two stars as well).

There were **more than 30 activity zones in ZE Montargis** of which most were artisanal b&vocation and occupying rather small surface (8% of total surface of activity zones in ZE Montargis). However, industrial zones were occupying nearly 40% of the total surface and the most important among them were located in Amilly (out of 114 ha, 44 ha still were not occupied). In municipality of Chalette-sur-Loing, there were three activity zones: ZA Saint-Gobain, ZA Grande Prairie and ZA Chateau Blanc of which only ZA Grande Prairie had some space still on the market, while the rest was occupied. When it comes to commercial zones, they were situated in Amilly (45 ha) and Villemandeur (55 ha). Activity zone of mixed vocation ZAC Arboria had 46 ha of which 15 ha (33%) were intended for firms and industries; and additional 54 ha were planned to extend the surface during the second phase of construction.

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### 3.3.3. BUSINESS DYNAMICS

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In terms of distribution of employment within in-place economy (fr. *sphere présenteielle*) and productive economy (fr. *sphere non-présentielle*), ZE Montargis followed the regional trend that was **in favour of responding to local demand and local consumption (residents and tourists)**. In fact, during the last decade percentage of employment within in-place economy increased especially in construction and commercial sectors. On the other hand, the

employment within productive economy (i.e. industrial manufacture) decreased in the zone (Table 12).

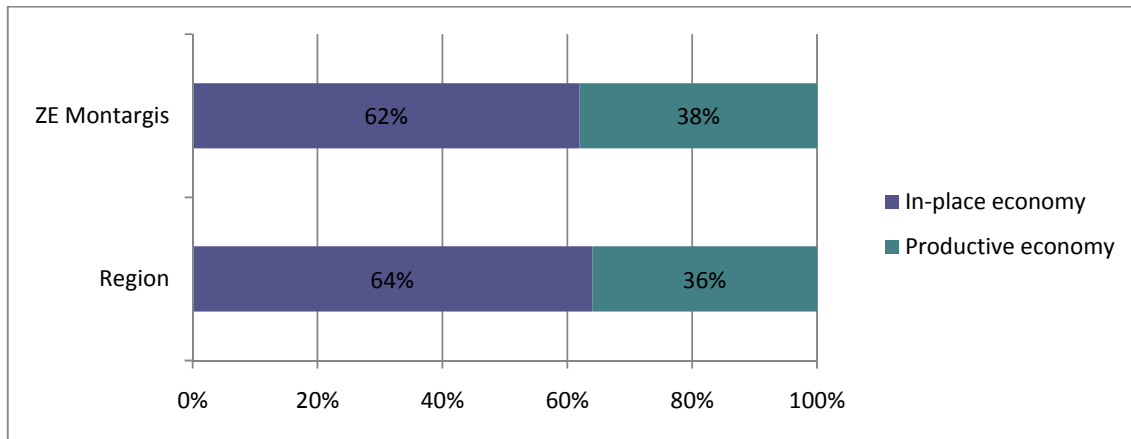
To be more precise, the decline of activities in production sector in ZE Montargis was 9% for the period from 1993 until 2010 (Table 13). However, it stayed as the dominant employment sector, especially in three domains: 1) **manufacture of plastic and rubber**; 2) **manufacture of transport equipment**; and 3) **manufacture of food, beverages and tobacco product** (Table 14).

Nevertheless, during the same period there has been a significant increase of employment within in-place economy: 1) **human services**; 2) **collective services**; and 3) **scientific and technical activities and operational services for business**.

Such balance of employment within in-place and productive economy was in line with the rank of top employers: 1) Agglomeration Hospital Centre (healthcare sector) with 1,000-1,500 employees; 2) Hutchinson SNC (manufacture of rubber and plastic products) with 1,000-1,500 employees; and 3) Faurecia Sieges d'Automobile (manufacture of transport equipment) with 250-500 employees.

In addition, the main business actors that provide the highest number of employment were: 1) Hutchinson (plastics and rubber), 2) Sanofi (pharmaceuticals and vaccines), 3) Ecologistique (factory in Courtenay specialized for chemical products, detergents, plastics); 4) ITM (food logistics), 5) Mory (specialist for supply chain management, transport and logistics); 6) Pakameco (plastics and packing); and 7) Pharmapost (printing office).

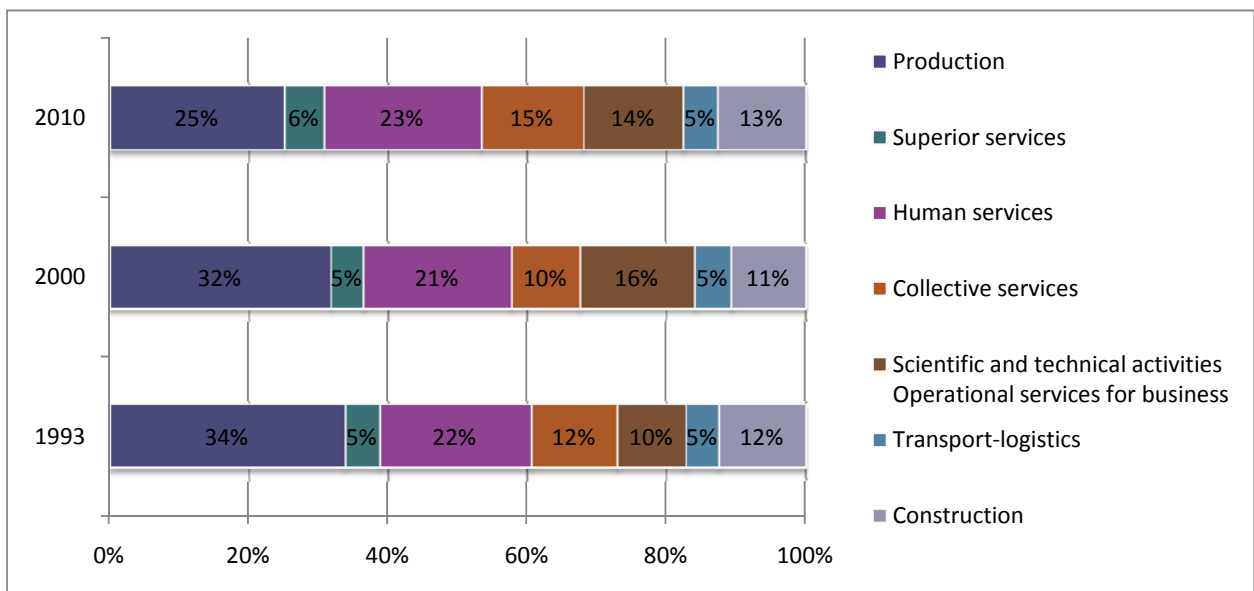
Table 12: Distribution of employment within in-place and productive economy in the region and in ZE Montargis in 2008 (in percentage)



Out of total employment (34,800) in ZE Montargis in 2008, productive economy counted 13,156 activities (37.8%); while in-place economy 21,644 activities (62.2%).

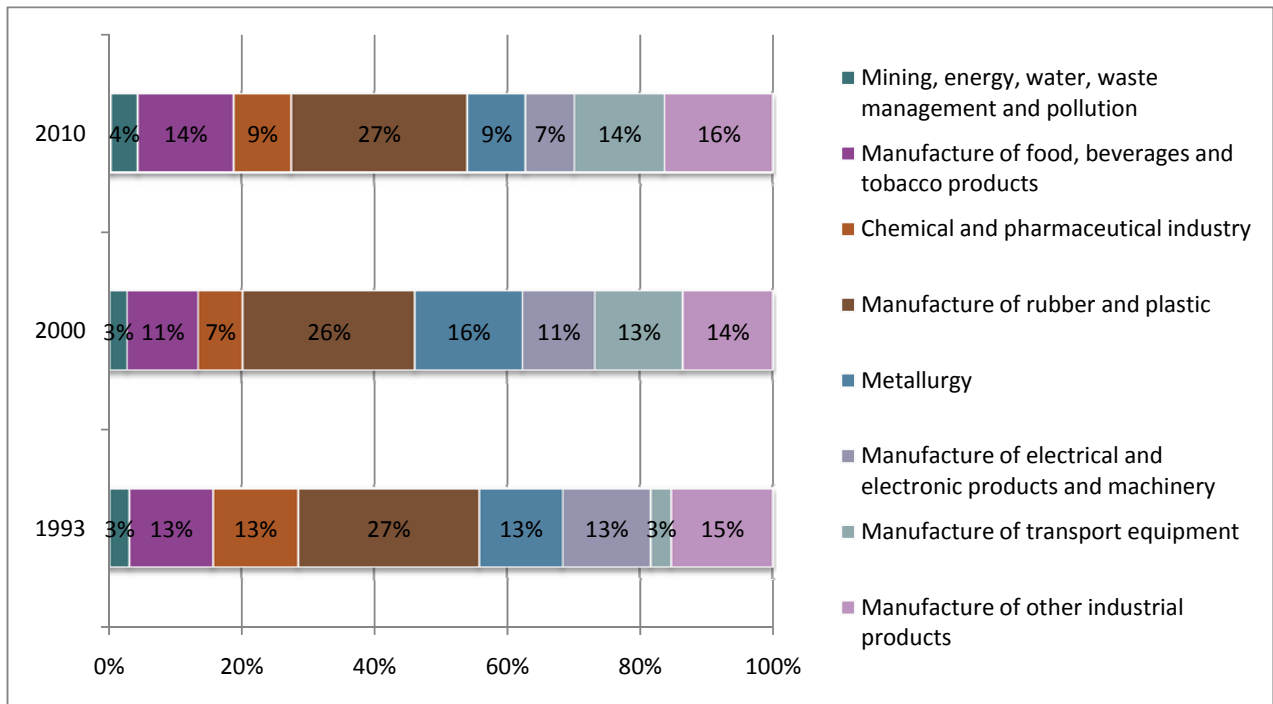
(Source: Conseil régional du Centre, 2010)

Table 13: Distribution and concentration of employment per activity sector in ZE Montargis in 2008 (in percentage)



(Source: Unistatis, 2010)

Table 14: Distribution and evolution of employment within productive economy in ZE Montargis (in percentage)



(Source: Unistatis, 2010)

Despite the economic crisis, **the number of newly created firms and organizations increased** in ZE Montargis in 2010 (+18% for firms; +17% for organizations compared to 2009). Majority of created firms and organizations were in two sectors: **construction and transport**. The three leading municipalities in ZE Montargis in terms of newly created firms and organizations were: Montargis, Châlette-sur-Loing and Amilly. When it comes to already present firms and organizations, they have been active in transport and construction sectors as well, and in most cases for at least **10 years (36%)**. The same trend could be observed at the regional scale where majority of firms and organizations have been active for more than 10 years in sectors of transport and construction.

ZE Montargis provided **education opportunities up to secondary degree** in: 1) six high schools (3 general and technological schools, 2 professional schools; 1 polyvalent school); 2) seven training centres (CFA) for apprentices in **mostly agriculture, transport and tourism**; and 3) one Health Institute for nurses. More precisely, in 2009, CFA in agriculture had the



highest number of students (more than regional average). Number of students in CFA in transport and logistics was also above the regional average, which given the fact that some of the largest companies in transport and logistics were installed in the zone: Ecologistique, Exdis, ITM, Mory, Pakameco and Pharmapost. In addition, Health Institute for nurses preparing professionals for Agglomeration Hospital Centre located in the zone.

**Hutchinson Research Centre** has been located in the zone since 1986 and employs 200 engineers and technicians. The centre of excellence and high technology develops innovations in domains of thermoplastic and high-temperature resistant elastomers, elastomer compounds and water-based varnish used for automotive and railroad equipment. In 1970, Hutchinson Company was overtaken by Total Company and since then it has been sharing scientific network and expertise at a larger scale.

**National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA)** (previously named Cemagref) has been located in municipality of Nogent-sur-Vernisson since 1977 in immediate proximity to National Forest Inventory, Chesnoy School of Agriculture and National Arboretum in Barres. It has about 50 permanent staff members, including 24 engineers-researchers. The main research focus is on forests management for preservation of biodiversity.

**Elastopôle** is the centre of competence (fr. *pôle de compétitivité*) specialized in rubber and polymers with the aim to become the European centre of reference in this field. It is present in four regions: Auvergne, Centre, Ile-de-France and Pay de la Loire; it has 250 enterprises partners coming from rubber industry and 45,000 employees among which 3,500 researches. More precisely, Elastopole cooperates with two companies located in ZE Montargis: Hutchinson and JPC Joints Pieces Caoutchouc.

Figure 16: Elastopôle sites in France



(Source: Elastopôle, 2012)

**Pôle Automobile** is cluster of small and medium enterprises aiming at reaching new markets by organising mission in target markets such as Morocco and India, by purchasing of public areas on important trade fairs, by helping the company to structure their human resources to work internationally and by bringing out collaborative projects in R&D. The cluster encompasses firms from several industrial sectors: metal, rubber, plastics and electricity that are mostly active in production and equipment provision. In ZE Montargis, there were 13 enterprises collaborating in the cluster: 1) production (SPC, Ibiden DPF France, Hutchinson Research Centre, Hutchinson Chalettes, Hutchinson Flexibles Automobile, AFL Honeycomb Structures, Faurecia Sieges d'Automobiles, Tork Engineering); 2) equipment of production (Gauvin and Rosse); 3) topping (MPMO SARL and SNBF Decoupage); and 4) surface treatment (MIC France). In 2010, administrative council of the cluster with the Institute Lean France launched a project named "Lean en region Centre" with the goal to face the challenge of the decline of automobile industry by applying new concept of management.



Figure 17: Pôle Automobile's sites in ZE Montargis



(Source: Pôle Automobile, 2012)

**ARIAC** (fr. *Association régional des industries alimentaire de la région Centre*) is a cluster of food industries that has gathered enterprises, educational institutions and local economic societies in order to develop the food sector since 2008. The cluster is active in five domains: commercial development, industrial performance, sector attractiveness to small and medium enterprises, environment quality management, and network of enterprises. It counts 70 members among which five are located in ZE Montargis (ACM, Comexo, Miel Villeneuve, Cristal Union, and Senoble).

The interest in agriculture among young generations as well as the existence of educational institutions specialized in that particular domain is founded on local tradition and know-how. ZE Montargis developed **seven activities in agricultural sector**: 1) cereals and grain (Caproga firm in Chalette-sur-Loing), 2) candy industry owned by Cristal Union corporation in Corbeil, 3) hatcher owned by Doux in Amilly, 4) yoghurt plant Senoble in Lorris, 5) milk industry in Courtenay, which is used in production of Brie de Meaux and labelled as AOP; 6) beekeeping as part of production of Gatinais honey labelled as IGP; and 7) rose growing in Bellegrade.

The presence of international corporations such as Hutchinson and Sanofi came as a driver of economic activities in ZE Montargis. **Hutchinson Group** is operating in 21 countries (mostly in Europe) on ten markets: automotive, aerospace, helicopter, construction, defence, railroad, heavy truck, marine, sport & leisure, and all industries. In 2009, the Group invested EUR 188 million of which EUR 124 million in research and development (compared to EUR 130 million in 2007; EUR 131 million in 2008). More precisely, Hutchinson's R&D is oriented towards four fields of expertise: 1) sealing systems; 2) vibration, acoustic and thermal insulation; 3) fluid transfer systems; and 4) transmission and mobility. **Sanofi** employs 400 people in its factory in ZE Montargis. The company is a global provider of medicines and healthcare products. Since 1961, the factory has been producing well-known Aspegic (more than 65 millions of boxes per year of which 40 millions are made for French market). During the period from 2006 until 2011, the company invested EUR 45 million in adaptation of the factory in the zone. Besides the presence of investors, ZE Montargis is attracting tourists as well. More than 28,000 tourist visits were counted in 2009.

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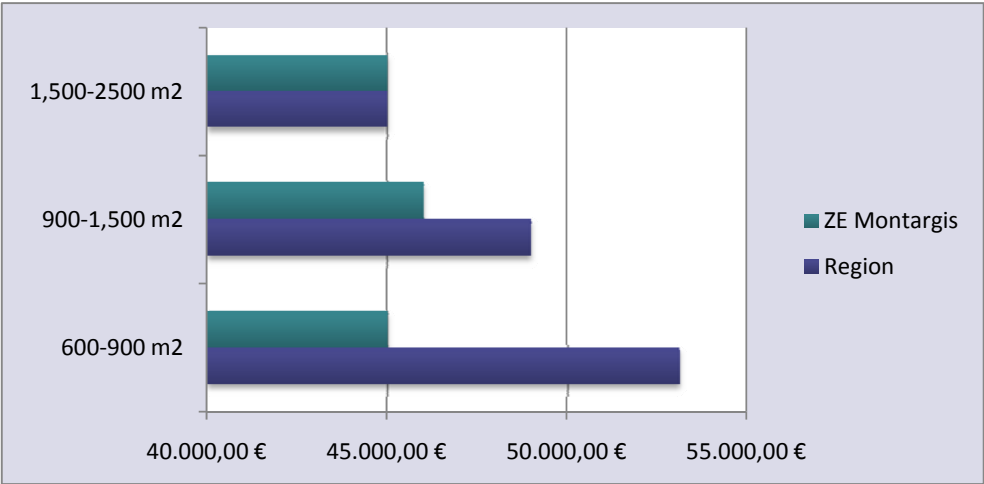
### 3.3.4. INSTITUTIONAL DYNAMICS

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According to code 64 of Economic activity A88 (Unistatis's BPE), in 2010 in ZE Montargis there were 63 financial institutions (assurance institutions not included) employing 298 persons. Furthermore, Chamber of trade and industry, and Chamber of crafts of Loiret department have their agencies in the zone as well.

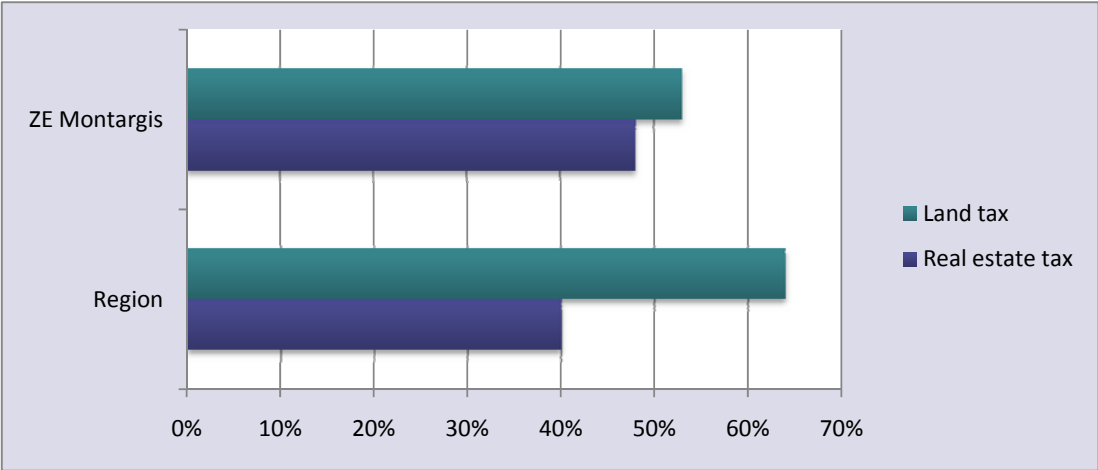
**The average price of apartment in ZE Montargis was 1,330 EUR/m<sup>2</sup>; while the average price of land (600-2,500 m<sup>2</sup>) was EUR 45,000.00** compared to the regional average of 1,900 EUR/m<sup>2</sup> for the apartment and EUR 49,033.00 for land (Table 15). Generally, prices of square meters have been increasing during the last six year by 3-4% per year despite the economic crisis. In contrast, **real estate tax in ZE Montargis was above the regional average** (48% in the zone compared to 40% in the region); and the **land tax was below the regional average** (53% in the zone compared to 64% in the region) (Table 16).

Table 15: Average price of land in ZE Montargis and Centre region (in EUR)



(Source: Immoprix, 2011)

Table 16: Average tax rate of real estate and land in ZE Montargis and Centre region (in %)



(Source: Immoprix, 2011)

Municipalities in ZE Montargis were active in various networks and partnerships. At the agglomeration level, Montargis was a member of French *Medium Sized Cities Association* (FMVM) and association *Villes au carré*. At the municipal level, Montargis was part of French *Small Towns Association* (APVF); Amilly was a member of *Towns Friends of*

*Children* network, Chalette-sur-Loing was a member of *Towns of Peace* network; and Cepoy of *Towns Internet* network.

Cooperation in twin town projects was also numerous. In the zone, there were nine twin towns projects between municipalities and other towns in France and abroad: Montargis with Crowborough from UK and Greven from Germany; Chalette-sur-Loing with two towns Ponte de Lima from Portugal, and Dnieprovski from Ukraine; Amilly was cooperating with three towns: Nordwalde from Germany, Vilanova del Cami from Spain and Calcinaia from Italy; Cepoy with Dais-Ed from Sweden; and the last Pannes with another French department Meurthe-et-Moselle.

Figure 18: Network of twin towns between municipalities in ZE Montargis and other towns



(Source: author)

### 3.4. ANALYSIS OF ECONOMIC DEVELOPMENT: ZE VENDÔME

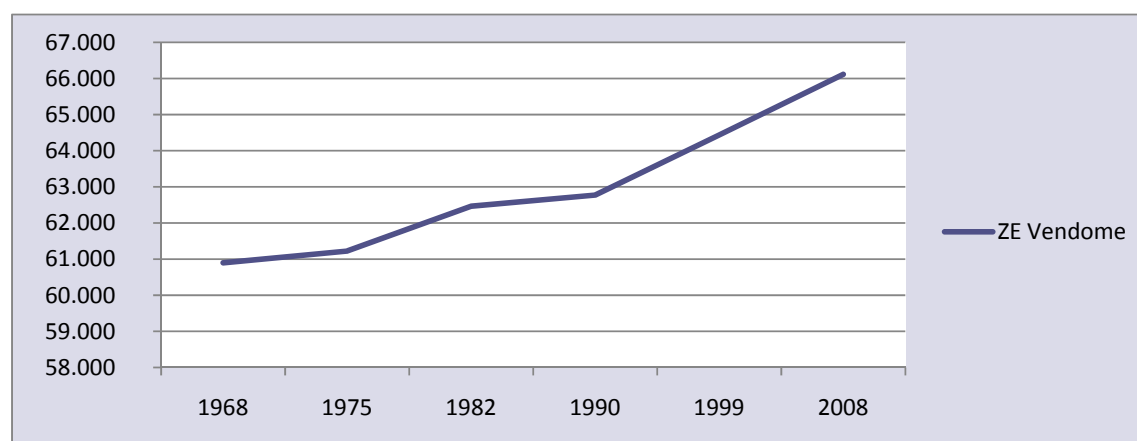
Analysis of economic development of ZE Vendôme was based on the system of indicators. Four dynamics were explored: demographical dynamics, spatial dynamics, business dynamics and institutional dynamics.

#### 3.4.1. DEMOGRAPHIC DYNAMICS

**The population in the zone has increased** from 60,900 in 1968 to 66,114 inhabitants in 2008 (Table 17). Annual population growth rate of +0.3% has been stable since 1990.

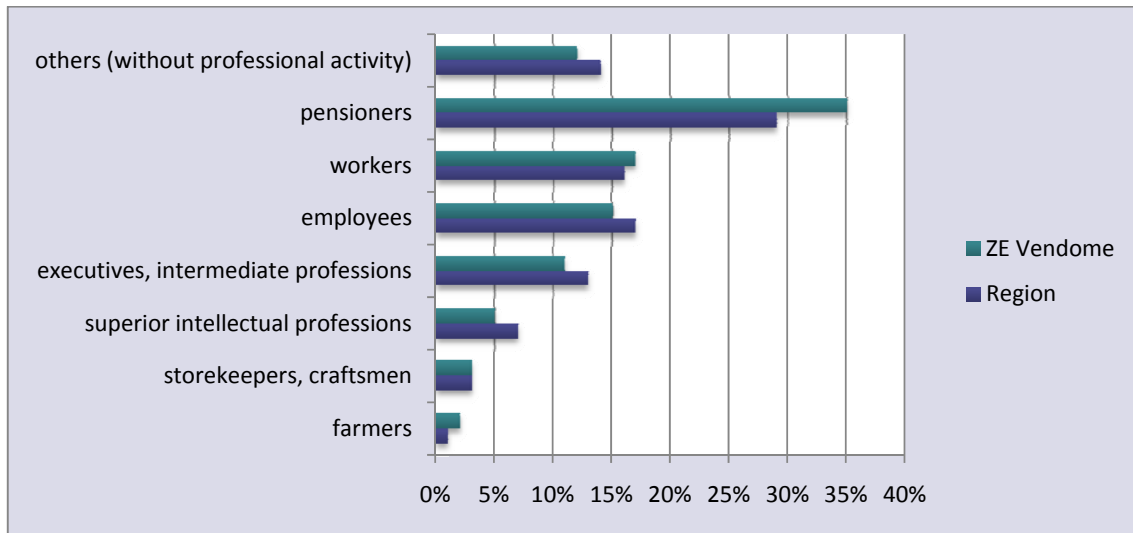
In 2008, majority of population had **professional or vocational certificate of secondary degree** (certificate of professional competence CAP; vocational studies certificate BEP). However, 21% of population does not have any diploma (above the regional average). About 15% of population had diploma bac +2 or superior to bac +2, which was below the regional average (Table 19). These results came in line with the distribution of population by professions in ZE Vendôme. In fact, **majority of population were pensioners or workers** and their percentage in total population was above the regional average. In contrast, percentage of superior and intermediate professions was below the regional average (Table 18).

Table 17: Population growth in ZE Vendôme (in number)



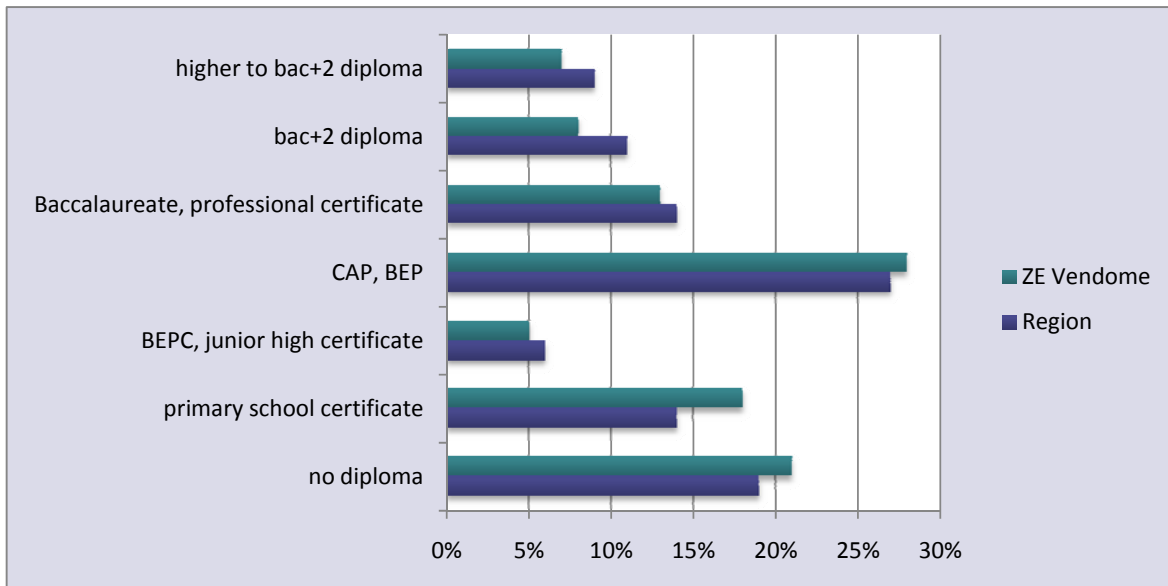
(Source: INSEE, 2010)

Table 18: Professions and socio-professional categories in ZE Vendôme and Centre region in 2008 (in percentage)



(Source: INSEE, 2010)

Table 19: Education degree of the population age 15+ in ZE Vendôme and Centre region in 2008 (in percentage)



(Source: INSEE, 2010)

### 3.4.2. SPATIAL DYNAMICS

**There is more migration of working population out of the zone than towards ZE Vendôme.** In 2007, more than 5,800 (21%) of working population was travelling out of the zone to work; while 3,440 (14%) of working population were coming from other zones to work in ZE Vendôme. Thus, the ratio was 1 to 1.7 in 2007. From ZE Vendôme, most of the working population was going to **Blois, Sarthe-Nord, Châteaudun and Paris** (Figure 19). On the other hand, the population that come to ZE Vendôme to work was mostly from Blois, Sarthe-Nord, Amboise, Châteaudun and Tours (Figure 20).

Compared to the year 1999, this ratio of working population migration out and towards ZE Vendôme has not changed during the last decade.

Figure 19: Migration of working population from ZE Vendôme to other zones of employment in 2007



(Source: Conseil régional du Centre, 2010)

Figure 20: Migration of working population to ZE Montargis from other zones of employment in 2007



(Source: Conseil régional du Centre, 2010)

In ZE Vendôme, **only municipality of Vendôme had equipment and services to the population of upper range**<sup>5</sup>: hospital, clinic Saint-Coeur, cinema and theatre *Minotaure*. Hospital in Vendôme had emergency service, but there was a lack of general practitioners

<sup>5</sup> INSEE classified equipment and services to the population based on the database Base Permanente des Equipements. Three levels of equipment and services were defined:

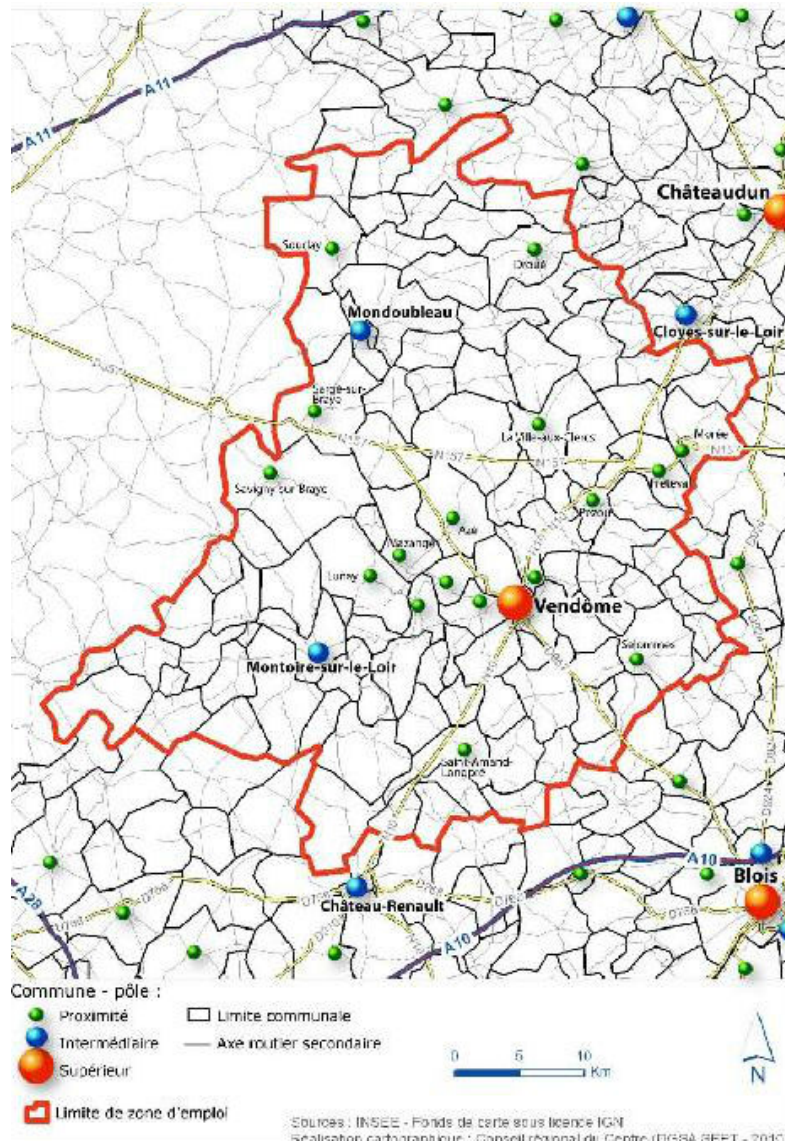
- Range of proximity: the post office, bank, savings bank, auto repair and farm equipment, bricklayer, plasterer painter, carpenter locksmith, plumber heating engineer roofer, electrician, hairdresser, restaurant, estate agent, supermarket, grocery, bakery, butchery.
- Intermediate range: cash, police, funeral directors, ITV, driving school, general contractor of the building, veterinary, laundry-dry cleaning, beauty care, supermarket, library stationery, clothing store, home furnishings shop, shop footwear, appliance store, furniture store, art store, sports and leisure, hardware store, drugstore, watch and jewellery.
- Upper range: police, ANPE, car hire-vans, temporary employment agency, hypermarket, frozen food, fish.



and nurses. In 2008, there were 57 doctor generalists on 66,114 inhabitants (1,160 inhabitants per general practitioner) and 51 nurses (1,296 inhabitants per nurse) mostly located in Vendôme municipality. Out of 107 municipalities in the zone, two of them (Mondoubleau and Motoire-sur-le-Loir) provided intermediate range of equipment and services such as supermarket, driving school and college. In terms of services of proximity, 17 municipalities had accessibility to these services within 15 minutes of range. However, their spatial location was not balanced. There were 4 local municipal markets: one in Saint-Ouen; one in La Ville aux Clercs; and two in Vendôme. They had one open day during a week. Commercial zones are mostly situated municipality of Vendôme; however the gravitation of population was actually towards larger neighbouring cities such as Blois, Le Mans, Orléans and Tours.

When it comes to built amenities and provision of services and information, the entire zone counted 2 tourist offices of which the central three-star-office was in Vendôme municipality. ZE Vendôme offered 287 beds in 15 hotels (mostly two stars), and 836 places in 13 camping sites (mostly three stars).

Figure 21: Equipment and services in ZE Vendôme



(Source: Conseil régional du Centre, 2010)

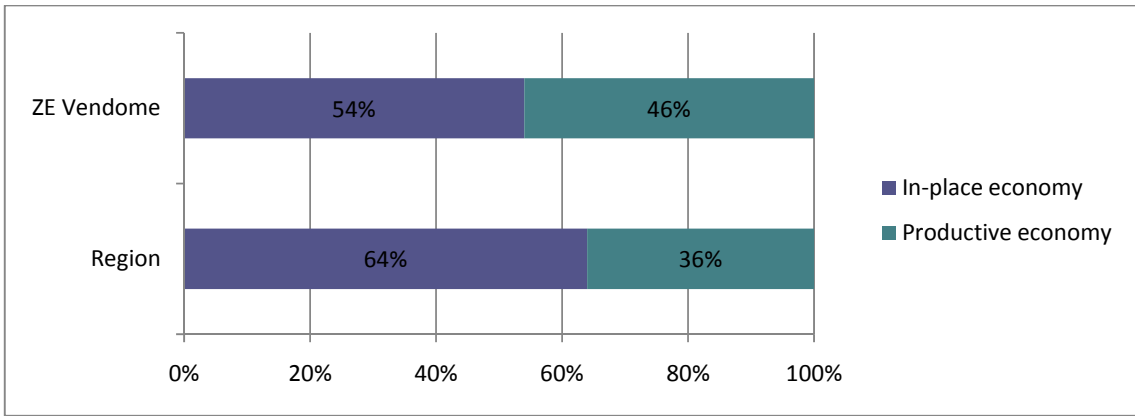
There were **more than 40 activity zones in ZE Vendôme** of which most were industrial zones that occupied 70% of the total surface of all activities zones. They provided from 2,000 to 5,000 m<sup>2</sup> for artisanal activities and from 2,000 m<sup>2</sup> to 50 ha for industrial activities and services. The dominant industrial zone was *ZI Parc technologique du Bois de l'Oratoire* in Vendôme municipality with 223 ha of which 143 ha (64%) was still at disposal. There were also three industrial zones smaller in size: Industrial Zone Z.I. Nord with 43 ha; Industrial Zone Z.I. Sud-Z.A.C. des Hauts des Clos with 74 ha; and Industrial Zone Z.A. de la Plaine

with 5 ha. When it comes to vocation of zones, besides industrial ones, there are 7 artisanal zones, 4 commercial zones, and 12 zones of mixed vocation.

### 4.4.3. BUSINESS DYNAMICS

ZE Vendôme has kept the balance between number of employment in productive economy and in-place economy. Compared to regional average, **in-place economy in ZE Vendôme was weaker** (54% in ZE Vendôme to 64% in the region). On the contrary, despite the industrial decline, productive economy especially employment in **industrial production and manufacturing, played an important role in the zone** (46% of employment in ZE Vendôme in productive economy compared to 36% as regional average) (Table 20).

Table 20: Distribution of employment within in-place and productive economy in the region and in ZE Vendôme in 2008 (in percentage)



Out of total employment (19,539) in ZE Vendôme in 2008, productive economy counted 8,940 activities (45.8%); while in-place economy 10,599 activities (54.2%).

(Source: INSEE, 2008)

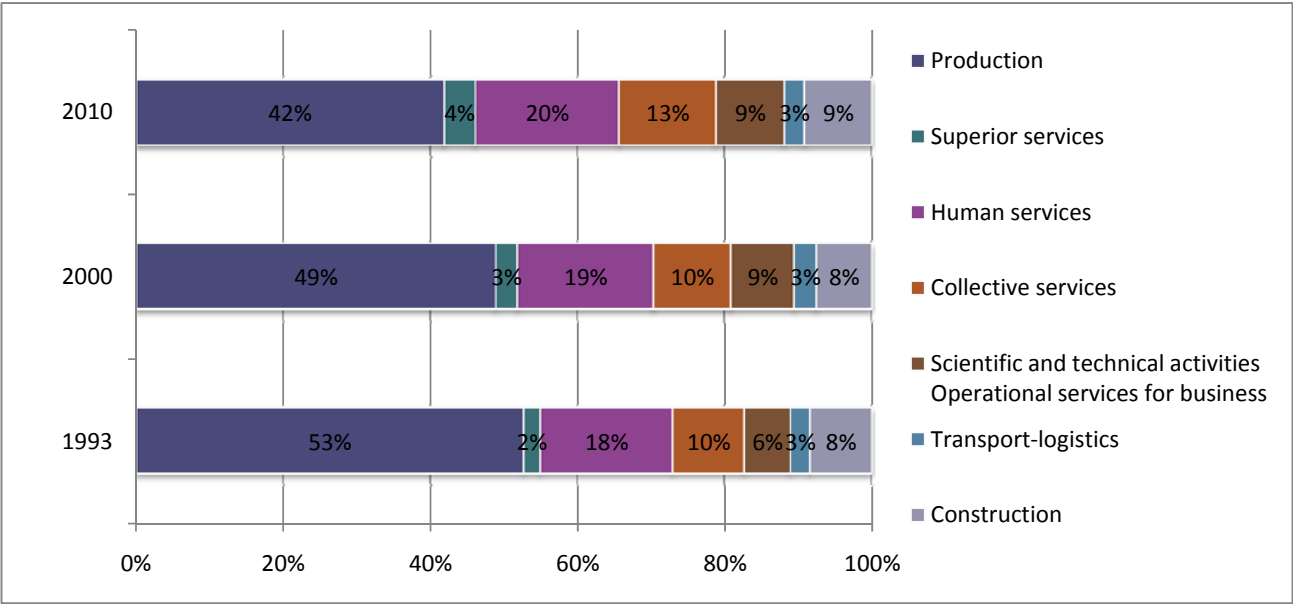
More precisely, even though employment in production sector has been declining by 11% since 1993, it has stayed a dominant sector of economic activities in ZE Vendôme (Table 21). Domains that counted significantly high employment were: 1) **manufacture of electrical and**

electronic products and machinery; 2) metallurgy; and 3) manufacture of food, beverages and tobacco products (Table 22).

However, employment in service sector has grown but not as quickly as in the rest of region. The percentage of employment in services increased mostly in: 1) **human services**; 2) **collective services**; and 3) **scientific and technical activities and operational services for business**.

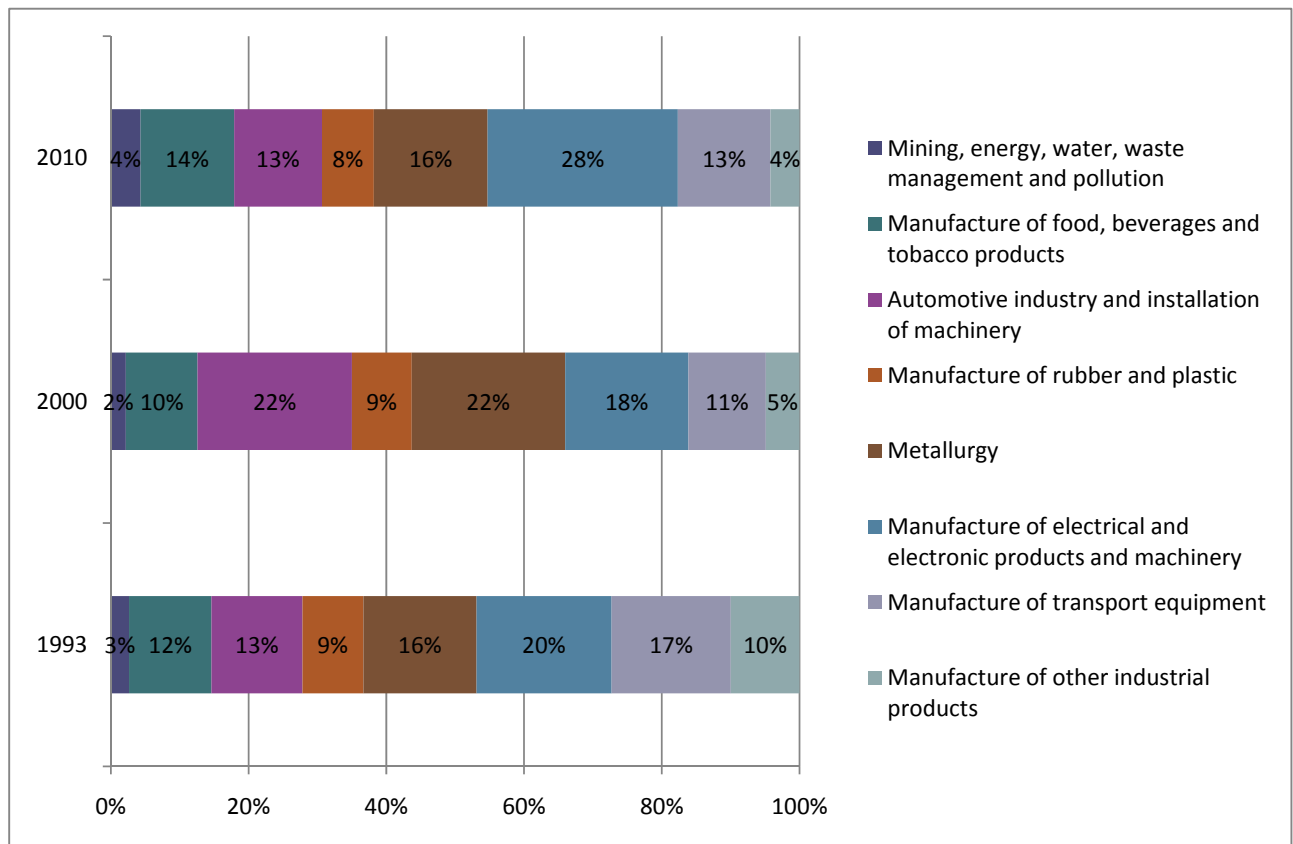
The strong industrial tissue was consistent with the rank of top employers in the zone: 1) ZF Systems de Direction NACAM S.A.S. (manufacture of transport equipment in automotive industry) with 500-800 employees; 2) Thales Avionics SA (reparation and installation of machines and equipment in aeronautics industry) with 500-800 employees; and 3) Vendôme Hospital (healthcare sector) with 250-500 employees.

Table 21: Distribution and concentration of employment per activity sector in ZE Vendôme in 2008 (in percentage)



(Source: Unistatis, 2010)

Table 22: Distribution and evolution of employment within productive economy in ZE Vendôme (in percentage)



(Source: Unistatis, 2010)

The main business actors in ZE Vendôme were: 1) Thales Avionics SA; 2) NACAM SAS, 3) Les volailles de la Vallée de la Braye (food manufacture); 4) Brandt SAS (manufacture of electric equipment); and 5) Baumer Bourdon Haenni SAS (manufacture of electronic and optical products).

In 2010 the number of **newly created firms and organizations increased in ZE Vendôme** (+16% for firms; +15% for organizations compared to 2009). However, that creation rate of both firms and organizations was below the regional average (+18% for enterprises; +16% for institutions). Majority of newly created firms and organizations came from two sectors: **transport and construction**. When it comes to already existing firms and organizations, majority of them were active in **transportation sector for at least 10 years**. The same trend

could be observed in the region, where majority of firms and organizations has been active for 10 years or more in transport and construction sectors.

ZE Vendôme offers **education opportunities up to secondary degree** through: 1) six high schools (three agricultural schools, one general and technological school, one professional school; one polyvalent school); and 2) seven training centres (CFA) for apprentices **mostly in agriculture and transport**. More precisely, in 2009, the highest percentage of students (63%) was preparing general and technological certificate. However this percentage was still below the regional average of 71%. If compared with the region, percentage of students in agriculture was significantly higher in the zone (19% in ZE Vendôme and 3% in the region). Also, percentage of students in professional studies in sector of automobile repair was higher in the zone than in the region (9% in ZE Vendôme and 1% in the region). Interest of students in agriculture and automotive sectors complements the presence of large industrial groups and clusters active in these sectors as well.

**Bel Industries Development Centre** is part of international Bel Group active in food industry. In ZE Vendôme, the Group has a production site that develops high-tech products associated with scientific research and sophisticated industrial techniques. A “Pilot Hall” in Vendôme has been working for several years and has been used for testing effectiveness of processes and innovations in production of ice-cream, concentrated milk and yogurt. Research Department of Bel Group develops its expertise in diverse areas such as perception and evaluation of sensory quality, design of new processing methods, mechanisms for development of cheese quality and packaging materials.

**S2E2 Smart Electricity Cluster** (fr. *pôle de compétitivité*) operates in two sectors: electrical energy technologies and smart grids in energy efficiency. It encompasses companies, research centres and training organizations in several regions: Centre, Limousin and Pays de la Loire. Founded in 2005, today cluster counts 115 members, 84 companies, 25 laboratories, 5 universities (Cergy Pontoise, Limoges, Nantes, Orléans and Tours), 3 public research centres (BRGM, CEA and CNRS) and more than 190 R&D certified projects. There are three firms from ZE Vendôme actively cooperating in the cluster: 1) SRT-MC (supply of ceramic of all types); 2) ECOFIT (owned by Group Rosenberg, it manufactures engines, ventilators and DC 24-48 V; in Vendôme it has a 7000 m<sup>2</sup> factory and 70% of its business in for direct export); and 3) Diaxys (manufacture of solutions for measuring - sensors and supervision systems).

**Aérocentre** is regional centre of excellence founded in 2009 in order to develop the aeronautical industry in the region. In fact, it concentrated on expertise in cabin and cockpit; safety control and certification; aircraft maintenance; and energy and environment. Centre cooperates with nearly 200 companies, 16,000 employees and 12 research laboratories. The centre is organized into two working groups. The RDI Group is concentrated on R&D and innovation, while DES Group works in domain of economic and social development. Only one company from ZE Vendôme is a partner of Aérocentre: a multinational company Thales, which is one among the largest employers in the zone. Thales is designing and building information systems for defence and security, aerospace and transportation. It has a global network of 22,500 researchers and a corporate research laboratory in the campus of Ecole Polytechnique.

**Shop Expert Valley** is cluster and competence centre in management of trade and commercial spaces. Cluster was firstly Local Production System (LPS) and then in 2008 recognised as competence centre. It combines expertise from various domains such as lighting, signs, furniture wood, metal fittings, POS, digital media, security, signage, etc. Cluster has 20 enterprises and 1,000 partners. In ZE Vendôme one smaller firm is cooperating within the cluster: Dargaisse employing 45 persons and offering furniture, displays, layouts and accessories.

**Pôle Automobile** is cluster of small and medium enterprises aiming at reaching new markets by organising mission in target markets such as Morocco and India, by purchasing of public areas on important trade fairs, by helping the company to structure their human resources to work internationally and by bringing out collaborative projects in R&D. The cluster encompasses firms from several industrial sectors: metal, rubber, plastics and electricity that are mostly active in production and equipment provision. In ZE Vendôme, there are 8 firms collaborating in the cluster: 1) production (Demarais Industries, Traven Technology, and ZF System de Direction NACAM); 2) production of equipment (Caire Industrie, Prysme and Hexagon Metrology Division Romer); 3) topping (Aremeca); and 4) surface treatment (DEC SA).



Figure 22: Pôle Automobile's sites in ZE Vendôme



(Source: Pôle Automobile, 2012)

Developed manufacture of food together with educational institutions with agriculture curriculum is embedded in local tradition and know-how. Hence, activities specific for ZE Vendôme were: 1) milk products, which were actually more developed in neighbouring Sarthe, but the zone was complementing its production; 2) poultry in Sarthe with a strong presence of LDC Company and its factories. ZE Vendôme was again contributing to those activities; 3) wine Coteaux du Vendomois labelled as AOP (fr. *Appellation d'origine protégée*); 4) production of straw pellets and methane; and 5) wood chips labelled and recognized by CUMA (fr. *Coopératives d'Utilisation du Matériel Agricole*).

Subsidiaries of international companies ZF System de Direction NACAM (Bosch Group) and Thales Avionics (Thales Group) are among larger investors in ZE Vendôme. **Bosch Group** distributes automotive products and household appliances. It employs more than 8,000 people in France. In ZE Vendôme, the company was established in 1972, and until today it counted 613 employees working on production of car steering columns. In 2011, the Group globally invested EUR 4,190 million in research and development (compared to EUR 3,810 million in 2010; EUR 3,603 million in 2009). Moreover, R&D with a network of 1,300 researchers worldwide is oriented towards four fields of expertise: 1) energy storage and conversion; 2)



information technology and sensors; 3) materials and production technology and 4) development methods and processes. Research locations are not based in France, but in Germany, North America, Russia and Asia. **Thales Group** employs more than 500 persons in its factory in ZE Vendôme. The company is a global provider of information systems for defence and security, aerospace and transportation. ZE Vendôme is specialized for aerospace market providing systems and functions for all types of aircrafts. In 2011 the Group invested 20% or EUR 2.5 billion of its revenues into R&D. Besides business actors, ZE Vendôme attracted tourists as well – more than 18,000 visits in 2009.

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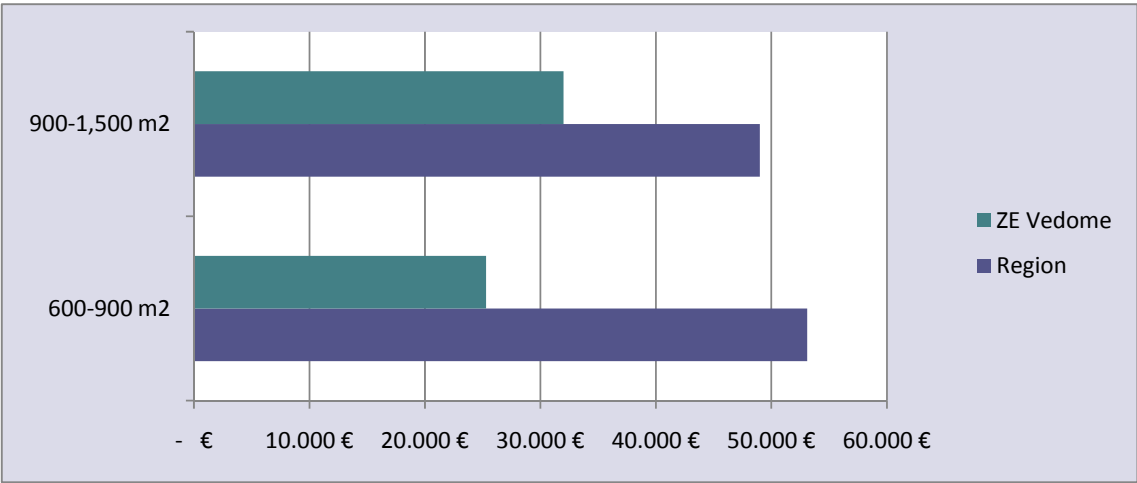
#### 3.4.4. INSTITUTIONAL DYNAMICS

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In 2010, according to code 64 of Economic activity A88 (Unistat's BPE), in ZE Vendôme there were 23 financial institutions (assurance institutions excluded) employing 111 persons. Furthermore, Chamber of trade and industry of Loir-et-Cher department has one office in the zone as well.

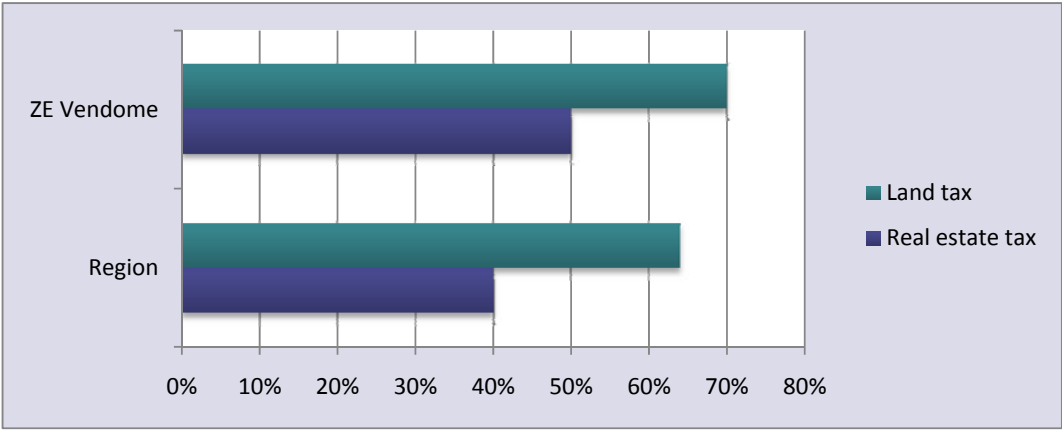
When it comes to real estate and land, in order to attract investors, local government offered special prices for implantation in one of ten activity zones for 5-15 EUR per m<sup>2</sup>. Nevertheless, usual average real estate and land prices showed that the average price of apartment in ZE Vendôme was **1,620 EUR/m<sup>2</sup>; while average price of land (ranging from 600 to 1,500 m<sup>2</sup>) was EUR 26,000**. Thus, the prices in ZE Vendôme were above regional average: 1,900 EUR/m<sup>2</sup> for the apartment and EUR 49,033 for land (Table 23). More in general, prices of square meters in Loiret department have been decreasing by 2% since 2010. On the other hand, **real estate tax in ZE Vendôme was higher than regional average** (50% in the zone compared to 40% in the region); **as well as the land tax** (70% in the zone compared to 64% in the region) (Table 24).

Table 23: Average price of land in ZE Vendôme and Centre region (in EUR)



(Source: Immoprix, 2011)

Table 24: Average tax rate of real estate and land in ZE Vendôme and Centre region (in %)



(Source: Immoprix, 2011)

Municipalities in ZE Vendôme were not active members when it comes to participation in towns’ networks and partnerships. At the agglomeration level, Vendôme is a member of association *Villes au carré*. Cooperation in twin town projects has also had low interest up

until now. In the zone, there was one twin town project between Vendôme municipality and Gevelsberg in Germany.

Figure 23: Network of twin towns between municipalities in ZE Vendôme and other towns



(Source: author)

### 3.5. APPLYING TYPOLOGY: ATTRACTIVENESS, DIVERSITY, RESILIENCE

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Based on the previous analysis of dynamics of economic development of ZE Montargis and ZE Vendôme, the following chapter categorized their specificities within two dimensions: a) degree of attractiveness; b) degree of diversity. Application of both dimensions in designing four types of towns was illustrated on ZE Montargis and ZE Vendôme. Finally, the discussion on resilience of two cases was made in the last part of this chapter.

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#### 3.5.1. TYPE I: ATTRACTIVENESS TO POPULATION & DIVERSITY OF POPULATION

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In terms of growth of population for the period from 1999 until 2008, ZE Montargis was more attractive to population than both regional average and ZE Vendôme.

When it comes to diversity of population by socio-professional categories and education, both ZE Montargis and ZE Vendôme were less diversified compared to regional average.

However, there were some differences between the two. ZE Vendôme was more diversified in education levels of population, but less diversified in socio-professional categories compare to ZE Montargis.

Table 25: Degrees of attractiveness and diversity of ZE Montargis, ZE Vendôme and Centre region (demographical category)

| VARIABLE   | DIMENSION | INDICATOR                                                    | MONTARGIS | VENDOME | REGION |
|------------|-----------|--------------------------------------------------------------|-----------|---------|--------|
| DEMOGRAPHY | ATT       | Annual population growth rate                                | +0.8%     | +0.3%   | +0.4%  |
|            | DIV       | Population by socio-professional category (Gini coefficient) | 0.402     | 0.416   | 0.367  |
|            |           | Population by education level (Gini coefficient)             | 0.301     | 0.294   | 0.247  |

### 3.5.2. TYPE II: ATTRACTIVENESS OF SPACE & DIVERSITY OF SPACE

ZE Vendôme was more attractive to working population living in other employment zones, but working in the zone than was the case in ZE Montargis. However, ZE Montargis had higher number of equipment, amenities and services with broader range on territory than ZE Vendôme. Also, ZE Montargis had more diversified activities zones in terms of their vocation.

Table 26: Degrees of attractiveness and diversity of ZE Montargis and ZE Vendôme (spatial category)

| VARIABLE | DIMENSION | INDICATOR                                                               | MONTARGIS | VENDOME |
|----------|-----------|-------------------------------------------------------------------------|-----------|---------|
| SPACE    | ATT       | Coefficient of migrations of working population (arrivals per leavings) | 0.5       | 0.7     |
|          |           | Number of equipment, amenities and services                             | 28        | 20      |
|          | DIV       | Activity zones by vocation (Gini coefficient)                           | 0.293     | 0.447   |

### 3.5.3. TYPE III: ATTRACTIVENESS TO BUSINESS & DIVERSITY OF BUSINESS

According to analysis of business activities, ZE Montargis was more attractive to international investors and tourists than ZE Vendôme. Also, in ZE Montargis creation of new firms was greater and more local businesses were more attracted to clustering and cooperating in SPLs or in development of local labels.

Furthermore, employment by sector in ZE Vendôme was less diversified, but characterized by balance between productive and in-place economies, which was not the case in ZE Montargis or the regional average.

Table 27: Degrees of attractiveness and diversity of ZE Montargis, ZE Vendôme and Centre region (business category)

| VARIABLE | DIMENSION | INDICATOR                               | MONTARGIS | VENDÔME | REGION |
|----------|-----------|-----------------------------------------|-----------|---------|--------|
| BUSINESS | ATT       | Number of major international investors | 9         | 8       | n/a    |

|  |     |                                                                                                  |                                                                                                           |                                                                                             |                                 |
|--|-----|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------|
|  |     | Number of tourists per year                                                                      | 28,000                                                                                                    | 18,000                                                                                      | n/a                             |
|  |     | Annual creation rate of firms and organizations                                                  | +17.5                                                                                                     | +15.5                                                                                       | +17                             |
|  |     | Number of local enterprises in clusters, SPL and production of labelled products (AOC, IGP, AOP) | 20                                                                                                        | 13                                                                                          | n/a                             |
|  | DIV | Employment by in-place economy and productive economy (Gini coefficient)                         | 0.122                                                                                                     | 0.042                                                                                       | 0.144                           |
|  |     | Employment by sector (Gini coefficient)                                                          | 0.272                                                                                                     | 0.437                                                                                       | n/a                             |
|  |     | Firms and complementary organizations by sector                                                  | 65.5% in transportation and trade                                                                         | 62% in transportation and trade                                                             | 65% in transportation and trade |
|  |     | Top 3 employers                                                                                  | 1) Agglomeration Hospital Centre, 2) Hutchinson SNC, 3) Faurecia Sieges d'Automobile                      | 1) ZF Navigation system Nacam S.A.S., 2) Thales avionics SA, 3) Vendôme Hospital            | n/a                             |
|  |     | Clusters, SPL, labelled products (AOC, IGP, AOP) by sector                                       | Centre of competence: 1<br>Cluster: 2<br>Local know-how: 7                                                | Centre of competence: 1<br>Clusters: 4<br>Local know-how: 5                                 | n/a                             |
|  |     | Local and international investments and R&D investments by sector                                | Hutchinson Group in 2009: 188 mil. EUR (124 mil. EUR in R&D)<br>Sanofi in France: 45 mil. EUR (2006-2011) | Thales Group in 2011: 2.5 bil. EUR (20% of revenues)<br>Bosch Group in 2011: 4,190 mil. EUR | n/a                             |

### 3.5.4. TYPE IV: PROMOTING ATTRACTIVENESS & PROMOTING DIVERSITY

When it comes to local engagement in promotion of attractiveness and diversity especially initiatives coming from local institutions, municipalities of ZE Montargis were more engaged in partnerships within associations and twin towns, and had more numerous cultural agenda than those in ZE Vendôme.

Whereas, municipalities in ZE Vendôme had greater number of students and researcher within less diversified educational branches and institutions.

Table 28: Degrees of attractiveness and diversity of ZE Montargis, ZE Vendôme and Centre region (institutional promotion category)

| VARIABLE     | DIMENSION | INDICATOR                                                                                        | MONTARGIS | VENDOME | REGION |
|--------------|-----------|--------------------------------------------------------------------------------------------------|-----------|---------|--------|
| INSTITUTIONS | ATT       | Number of financial institutions, chambers or antennas                                           | 65        | 24      | n/a    |
|              |           | Number of students and researchers                                                               | 559       | 1060    | n/a    |
|              |           | Number of activity zones                                                                         | 30        | 40      | n/a    |
|              |           | Annual growth of real estate prices per m <sup>2</sup>                                           | +3%       | -2%     | +5%    |
|              |           | Local tax rate                                                                                   | 50.5%     | 60%     | 52%    |
|              |           | Number of memberships in associations and twin towns cooperation                                 | 15        | 2       | n/a    |
|              | DIV       | Education branches, offered specialisations in education and R&D institutions (Gini coefficient) | 0.344     | 0.464   | n/a    |
|              |           | Number of events                                                                                 | 192       | 108     | n/a    |

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### 3.5.5. OBSERVING RESILIENCE TRAJECTORIES: RESOLUTION SCENARIOS OF TERRITORIAL DILEMMAS

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Both ZE Montargis and ZE Vendôme had their unique trajectories while facing diverse challenges. Characteristics of their strategies in solving territorial dilemmas have been summed up as follows:

#### **Territorial dilemma No. 1: Core of territorial differentiation**

##### **ZE Montargis:**

- Attraction of population
- Attraction of international investors
- Attraction of tourists
- Attraction of students and researchers
- Rich cultural agenda
- Engagement of municipalities in memberships and towns partnerships
- Diversified vocation of activity zones
- Diversified employment by sector
- Diversified offer of programmes in educational and R&D institutions

##### **ZE Vendôme:**

- Attraction of population
- Attraction of tourists
- Attraction of international investors
- Attraction of working population living in neighbouring employment zones
- Population specialized by socio-professional category
- Diversified population by educational level
- Specialized vocation of activity zones
- Specialized employment by sector
- Specialized offer of programmes in educational and R&D institutions

#### **Territorial dilemma No. 2: Idiosyncratic strategy**

##### **ZE Montargis:**

- One centre of competence in rubber and polymers



- One Irstea centre for forest and biodiversity
- Two clusters in automobile and agricultural sectors
- Promotion of local know-how in seven segments (food products and plants)
- 200 researchers in Hutchinson research centre
- 24 research engineers in Irstea centre
- Orientation towards tourism and services

#### **ZE Vendôme:**

- One centre of competence in energy technology and efficiency
- Four clusters in automobile, aeronautical, commercial and food sectors
- Promotion of local know-how in five segments (food products and wood chips and pellets)
- Keeping strong industrial production

### **Territorial dilemma No. 3: Degree of territorial openness**

#### **ZE Montargis:**

- Cooperation of local firms in clusters, SPL and production of labelled products
- Memberships in associations and networking of municipalities with other town in twin town projects
- Attraction of population
- Attraction of international investors
- Attraction of tourists
- Attraction of students and researchers

#### **ZE Vendôme:**

- Cooperation of local firms in clusters, SPL and production of labelled products
- Attraction of population
- Attraction of tourists
- Attraction of international investors
- Attraction of working population living in neighbouring employment zones

### **Territorial dilemma No. 4: Challenges of Speed and Timing**

#### **ZE Montargis:**

- Challenge 1: average income net per household below regional average
- Challenge 2: rate of local unemployment above regional average
- Challenge 3: percentage of pensioners above regional average
- Challenge 4: percentage of highly qualified workforce below regional average

**ZE Vendôme:**

- Challenge 1: average income net per household below regional average
- Challenge 2: percentage of pensioners above regional average
- Challenge 3: percentage of highly qualified workforce below regional average

### 3.6. DISCUSSION

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As been presented in previous chapters, literature on economic development and resilience within globalization was mostly concentrated on larger cities and metropolitan regions. In that context, particular interest of public attention has been drawn to city-rankings and typologies based on comparative analysis of performance and studies of best cases (Giffinger et al., 2010). However, despite their intermediate position, medium-sized towns still lacked the appropriate attention of researchers. During our research, we came across absence of tools providing with possibility to measure and assess economic development of cities and their economic resilience in a comparative way. In fact, despite recognition of importance of classifying cities as an instrument for evaluation of strengths and weaknesses, a clear and comparable system of indicators has been left aside - above all, the system of indicators that would refer to economic dynamics of small and medium-sized towns.

Therefore, our interest was to explore approaches to medium-sized towns, their dynamics of economic development and resilience presented by literature. The outcome of that work was presented in the first chapter of this research as theoretical framework for further analysis of medium-sized towns. Due to their particular characteristics, medium-sized towns could not be addressed the same way as metropolitan or rural areas. Therefore, we consulted direct and indirect sources in literature that dealt with issues of development of towns. Second part of our work was to create methodological approach to medium-sized towns that allowed suitable analysis of economic development and resilience. By this, we emphasized on consideration of contextual specificities, detection of main characteristics of economic development and verification of economic resilience to shocks.

Consequently, research methodology proposed a system of indicators suitable to identify and explore dynamics of economic development in four segments: 1) demographical; 2) spatial; 3) business; and 4) institutional. System of indicators took into account particular characteristics of medium-sized towns, notably their unique historic and geographic context. System was also adapted to fit the scale of medium-size towns. Another advantage of the system of indicators was the opportunity to make comparisons with other medium-sized towns in a more transparent and comprehensive way. Finally, if applied on a larger sample, proposed system of indicators could result in creation of typology that comprises main characteristics of economic development within a special scope of town's degree of

attractiveness and town's degree of diversity. As we illustrated on cases of two French medium-sized towns, both attractiveness and diversity of towns can be multidimensional: some towns can be attractive to retired population and at the same time they can encourage diversification of economic activities, especially in services of proximity in order to better respond to demand of population (case of Montargis). However, in a long-run, increase in retired population can become a burden for economic growth, if local economy does not encourage innovative and dynamic business activities that stand on endogenous factors (i.e. proximity, clusters, local know-how, heritage, etc.). Likewise, other towns can develop strategies to attract working population and external investment, and at the same time they can keep specialized industrial production (case of Vendôme). Productive economy based on industrial sector would generate jobs and consequently attract working population, but at the same time, it faces global competition and challenges of deindustrialization and dislocation of factories.

Proposed system of indicators allowed us to detect, to measure and to draw conclusions on these economic dynamics within towns. On the other hand, economic resilience of medium-sized towns can be addressed through the analysis of economic performance and geo-historical context. More precisely, by observing shocks that took place in town's history, pre-shock and post-shock economic performance and contextual determinants, we can conduct deeper analysis of economic resilience factors. We found appropriate and in line with objectives of our research to use a concept of territorial dilemmas in exploring economic resilience of medium-sized towns. Thus, dynamics of development were considered as to solve four dilemmas: differentiation, idiosyncratic strategies, openness and timing. We illustrated application of dilemmas on cases of Montargis and Vendôme.

Nevertheless, limitations of our methodology were clear and obvious. Firstly, some indicators within the proposed system might not have been well articulated in order to tackle the core of issues. We find the revision of indicators necessary for further analysis, so to design a system that is measurable, comparable and simple. Second limitation referred to accessibility of data. During our research, certain indicators that were considered to best address the issue, had to be left out due to no online data, reservation of access for private groups or due to a simple fact that some sources were not free of charge. Thirdly, we found limitation of methodology in missing qualitative analysis. Besides system of indicators that largely relied on statistical data, development of towns has its internal logic, quality relationships and networks between diverse actors that shape local economy. Therefore, further research on economic

development and resilience should not only rely on quantitative analysis, but it should also combine qualitative methods to obtain more relevant and realistic overview. Lastly, drawing conclusion on models of medium-sized towns based on just two cases was not the purpose of this research. We were aware that even after setting a system of indicators, there needs to be more verification on different cases - not only within the common national context, but also at a broader level. Results coming from larger samples would be more relevant for creation of typology with common characteristics of economic development and resilience.

Given these facts, future researches on economic dynamics and resilience on medium-sized towns should try to overpass and to improve mentioned limitations. In addition, we agree that development of towns and their vulnerability cannot be observed from one economic angle, since social, environmental and governmental dynamics play equal role in actively shaping towns. Therefore, it would be interesting to explore those dynamics within context of medium-sized towns as well.

## CONCLUSION

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Medium-sized towns constitute an important class of cities within urban hierarchy that face challenges in development different from those of larger cities. They have to cope with competition coming from larger metropolitan areas, and they appear to be less equipped in terms of resources and capacities. Nevertheless, literature argued that medium-sized towns have potentials to attract population and investment, as well as to maintain economic growth if their strategies were based on innovation, network and local comparative advantages.

Therefore, our interest was to explore dynamics of economic development and factors of resilience on two selected cases. Research aims were: 1) identification of characteristics of medium-sized towns and their modes of economic development; 2) evaluation of economic development and resilience strategies. We addressed those aims by analysing theoretical framework and concepts relating to medium-sized towns, economic development and resilience. Secondly, we developed methodology for evaluation of economic and resilience dynamics that was later on, tested on two medium-sized towns: Montargis and Vendôme, France. The final outcome of our research was a design of typology based on a degree of attractiveness and a degree of diversity; and we illustrated its application on our selected cases.

However, constraints to our methodology came from difficulties in articulation of indicators, as well as from limited accessibility to quantitative and qualitative data that would have enabled us to tackle the core of issues. We found that evaluation of economic development and resilience demanded system of indicators that was well articulated and that was complemented with additional qualitative research.

In terms of town typology, we found such classification would be a helpful instrument to improve competitiveness as it would indicate the best cases. Therefore, the usefulness of further research on evaluation and classification of economic dynamics is multiple. Firstly, typology would serve as a benchmark for policy makers during the process of regeneration and re-thinking of their towns. Secondly, typology would be useful for drawing some lessons and conclusions based on identified models. Thirdly, it could become a tool for identification of strengths, weaknesses, opportunities and threats. Last but not least, if compared to existing

systems of indicators that refer to performance on broader level such as metropolitan areas and countries, our typology would fit the scale of small and medium-sized towns.

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## LIST OF TABLES

---

Table 01: Typologies of cities according to their urban functions

Table 02: Historical transitions in socio-economic development and their impact on medium-sized towns

Table 03: Classification of activities within productive and in-place economies in France

Table 04: Difference between large cities and medium-sized towns based on simplified assumptions (derived from Henderson 1997)

Table 05: The resolution of four territorial dilemmas of resilience

Table 06: Four possible scenarios with regard to vulnerability and resilience

Table 07: System of indicators for analysis of dynamics of economic development based on four themes and two variables

Table 08: Contextual indicators

Table 09: Population growth in ZE Montargis (in number)

Table 10: Professions and socio-professional categories in ZE Montargis and Centre region in 2008 (in percentage)

Table 11: Education degree of the population age 15+ in ZE Montargis and Centre region in 2008 (in percentage)

Table 12: Distribution of employment within in-place and productive economy in the region and in ZE Montargis in 2008 (in percentage)

Table 13: Distribution and concentration of employment per activity sector in ZE Montargis in 2008 (in percentage)

Table 14: Distribution and evolution of employment within productive economy in ZE Montargis (in percentage)

Table 15: Average price of land in ZE Montargis and Centre region (in EUR)

Table 16: Average tax rate of real estate and land in ZE Montargis and Centre region (in %)

Table 17: Population growth in ZE Vendôme (in number)

Table 18: Professions and socio-professional categories in ZE Vendôme and Centre region in 2008 (in percentage)

Table 19: Education degree of the population age 15+ in ZE Vendôme and Centre region in 2008 (in percentage)

Table 20: Distribution of employment within in-place and productive economy in the region and in ZE Vendôme in 2008 (in percentage)

Table 21: Distribution and concentration of employment per activity sector in ZE Vendôme in 2008 (in percentage)

Table 22: Distribution and evolution of employment within productive economy in ZE Vendôme (in percentage)

Table 23: Average price of land in ZE Vendôme and Centre region (in EUR)

Table 24: Average tax rate of real estate and land in ZE Vendôme and Centre region (in %)

Table 25: Degrees of attractiveness and diversity of ZE Montargis, ZE Vendôme and Centre region (demographical category)

Table 26: Degrees of attractiveness and diversity of ZE Montargis and ZE Vendôme (spatial category)

Table 27: Degrees of attractiveness and diversity of ZE Montargis, ZE Vendôme and Centre region (business category)

Table 28: Degrees of attractiveness and diversity of ZE Montargis, ZE Vendôme and Centre region (institutional promotion category)

## LIST OF FIGURES

---

Figure 01: Thresholds used for the definition of small and medium-sized towns in a selection of European countries

Figure 02: Example of spatial typology of medium-sized towns

Figure 03: Dynamics of productive and in-place economies

Figure 04: Productive economy in employment zones in France

Figure 05: In-place economy in employment zones in France

Figure 06: Generic trajectories of territorial resilience

Figure 07: Resilience as a process – variations in resilience across the adaptive cycle

Figure 08: Employment zones in France in 2010

Figure 09: Location of ZE Montargis in Centre region

Figure 10: Transport infrastructure and connection in ZE Montargis

Figure 11: Location of ZE Vendôme in Centre region

Figure 12: Transport infrastructure and connection in ZE Vendôme

Figure 13: Migration of working population from ZE Montargis to other zones of employment in 2007

Figure 14: Migration of working population to ZE Montargis from other zones of employment in 2007

Figure 15: Equipment and services provided within ZE Montargis for the year 2010

Figure 16: Elastopôle sites in France

Figure 17: Pôle Automobile's sites in ZE Montargis

Figure 18: Network of twin towns between municipalities in ZE Montargis and other towns



Figure 19: Migration of working population from ZE Vendôme to other zones of employment in 2007

Figure 20: Migration of working population to ZE Montargis from other zones of employment in 2007

Figure 21: Equipment and services in ZE Vendôme

Figure 22: Pôle Automobile's sites in ZE Vendôme

Figure 23: Network of twin towns between municipalities in ZE Vendôme and other towns