Is job creation dependent on the local context? An analysis of French industrial establishments over the period 2004-2010

Aziza Garsaa

EconomiX, University of Paris Ouest,
Nanterre La Défense
and University of Paris 1 Panthéon Sorbonne.
Aziza.Garsaa@univ-Paris1.fr

Nadine Levratto

EconomiX, University of Paris Ouest,
Nanterre La Défense
Centre d'Etudes de l'Emploi (CEE)
and Kedge Business School.
nadine.levratto@u-paris10.fr

Abstract. This paper seeks to shed some light on the relationship between individual performance and local context. We empirically address this question focusing on the employment growth rate of French manufacturing establishments geo-referenced at the employment area level, an economically consistent territorial division. Using an unbalanced panel of 149,929 plants over the period 2004-2010, we estimate different growth models including local specific variables controlled with company specific ones. The results confirm that the firm growth rate is influenced by the local context and that some features such as unemployment, agglomeration effects or skills matter significantly. The robustness checks performed on subsamples, however, show that the profile of the areas or the market (local or larger) may significantly affect the intensity of the link between a firm and its environment.

Keywords: firm growth, geographical location, manufacturing industry, panel data.

JEL Classification: L25, R11, C23.

1. Introduction

Looking at entrepreneurship and firms' trajectories at a regional level is not so new. Two branches of economics already provide argument in favor of such a perspective. The new economic geography has for twenty years provided a theory of the emergence of large agglomerations which relies upon increasing return to scale and transportation costs (Baldwin, 1994). It also emphasizes linkages between firms and suppliers as well as between firms and customers. All these features result in providing a crucial advantage to the geographical concentration of economic activity. For industrial firms, this point was originally made by Marshall (1920, chap. 10). He highlights the benefits of a larger local labor pool, non-traded goods and knowledge spillovers. These arguments have received a lot of attention in the empirical literature. In particular, the importance of technological spillovers has been investigated by Jaffe (1989), Audretsch and Feldman (2004), or Acs et al. (1994). Others look at market-based forces to explain why it can be profitable for firms to be located close to large input and output markets. In this vein, Schulz and Stahl (1996) argue that if consumers have search costs, then competitors have an incentive to seek proximity even though this increases competition as high diversity improves the quality of matching. Ottaviano and Puga (1998) and Glaeser (1998) provide comprehensive surveys on agglomeration and dispersion forces whereas Glaeser et al. (1992) or Duranton and Puga (2005) demonstrate that local considerations intervene insofar growth and economic performances are concerned.

This local view has been overlooked for a long time by industrial economists, whereas most of the research taken under in this field seeks to provide a realistic explanation of how firms function. At best, location appears as a control variable in the firm growth models' specifications. To enrich the debate, we follow the assertion by Audretsch and Dohse (2007) who consider that "there is very little known about the impact of location on growth at the micro or firm level" (Audretsch and Dohse (2007): 80). This paper seeks, thus, to bring a contribution to the debate about the local determinants of firm growth, using a unique dataset of geo-referenced French plants in the manufacturing industry between 2004 and 2010. In putting emphasis on external variables, it differentiates from most papers previously published on firms' growth which focus mainly on individual features.

Looking at the literature, it becomes quickly obvious that the major stake consists in finding the best proxies to capture the local business climate. Referring to economic geography, most papers use the concentration in the industry, an index used to measure business activities, and a demographic index alone or together with regional specialization to

mirror a region's capacity to host new firms and growing industries. They are often complemented with indicators measuring educational level and industrial characteristics to describe the local context properly (Braunerhjelm and Borgman, 2004; Schimke and Teicher, 2012). Following Barbosa and Eiriz (2011), we continue in this way to increase the precision of description at the local level.

This research makes several contributions to the literature on firm growth. Firstly, it focuses on plants and not on companies, an approach which makes it possible to analyze what happens at a local level with more minute precision. Secondly, instead of considering location as a unique variable, we break down its characteristics to follow the transmission channels more precisely. Thus, introducing indexes to illustrate the area performances enables us to assess their effect on the rate of job creation at plant level between 2004 and 2010. Population skills, the share of industry in the total number of employees, the degree of autonomy, the rate of unemployment, and the concentration index are significant. Their role is confirmed, regardless of the model used, since the different estimations run demonstrate a clear stability of the results.

The remainder of the paper is organized as follows. Section 2 presents the literature and the resulting hypotheses about the relationship between firm growth and local context, which are tested thanks to an empirical model. Section 3 presents the data and provides descriptive analysis. Section 4 exhibits the results of estimations run, first, on the total sample and, then, on appropriate subsets to check the robustness of our analysis. Section 5 concludes and provides some recommendations.

2. Literature, hypothesis and model specification

2.1. An overview of the relationship between local context and firm growth

An abundant literature, coming mainly from the World Bank (LaPorta et al., 2008), emphasizes that the business climate affects economic activity. An improvement in the business climate leads to an increase in demand and generates new opportunities for companies to hire additional workers and to invest. It also improves business morale and, consequently, facilitates firm growth. On the opposite, a depressed business climate is not propitious to firm growth, not only because it discourages companies from investing but, also, from making full use of their production capacity.

A large number of publications relate broad indicators of institutional quality, policy and infrastructure to a number of macroeconomic outcome variables using cross-country data (Hall et Jones, 1999; Acemoglu et al., 2001). The authors generally conclude that the business

climate significantly affects economic performance. This macroeconomic view is, however, often suspected to suffer from various methodological drawbacks which limit its reliability (see Dethier et al., 2011). These comments have opened a wide field of empirical research focusing on a more disaggregated level (firm or industry level) to achieve more robust results since, as mentioned by Neary (2001), micro-economic models have more to offer.

The literature has classified the determinants of firm growth into two major groups: internal antecedents and factors that are external to the firm (Audretsh and Dohse, 2007). In this paper, we mainly focus on the latter composed by meso- and aggregated-factors depicting the local context. Considering empirical research on the role played by agglomeration externalities on firm growth, there are a number of reasons to expect that location plays a role in shaping the growth of firms. From Krugman (1991), it is broadly acknowledged that agents are locally dependent.

Location shapes firm growth following a twofold causal chain[1]. A direct link comes from market opportunities or localization economies. They matter because firms tend to locate close from each other in areas where customers are numerous enough and/or where suppliers are nearby. This permits companies to minimize their transaction costs. In addition to these proximity effects, several types of external economies have been pointed out. The indirect influence consists then in agglomeration economies and comes from the organization of the local production system and its density. In this sense, the location of a firm is thus an important determinant of its growth performance due to factors like the pooling of human capital, proximity to non-traded inputs and specialized goods, as well as easy access to markets (Audretsch, et al., 2012).

However, the general notion of 'location' or 'environment' has often been poorly specified. Most studies that at least considered location as a potential growth determinant simply introduced a dummy variable for different regions as a proxy for locational influences. We propose to disentangle this issue by including the notion of local and urban externalities and to analyze the relationship between firm growth and different components of agglomeration externalities.

• **Agglomeration forces, geographical clustering and knowledge diffusion** have been widely examined and it is broadly admitted that not only do companies tend to locate close to each other but also that Marshallian externalities boost their growth. Although the empirical literature does not provide conclusive evidence about the direction and magnitude of the

[1] Strange (2008) Fuchs (2009) and Gabriele et al. 2013 propose a comprehensive and up-to-date survey of this literature.

effect of industrial specialization/diversity on firm growth (Figueiredo et al., 2009), authors generally agree to consider that diversity or specialization matters in the individual growth process. Following a recent paper by Martin et al. (2011), concerning the French situation, industrial specialization measured at an ultra-fine level is shown to be responsible for an increase in productivity, thus, in the competitiveness, of plants. The authors conclude that the clustering of establishments operating in the same industry in a given area has thus a positive effect on their efficiency and, as a consequence, on their development. Garsaa et al. (2014) confirm these results demonstrating that specialization is positively correlated with the growth rate of Mediterranean companies over the period 2004-2010.

• In an evolutionist view, **the level of competition** faced by a company determines its market share. According to Porter (1998), a concentration of industrial activity in a geographic region also affects firm performance. It introduces local competition that leads firms to innovate in order to remain competitive. These external economies of specialization are especially valid for innovative firms provided that if projects are location specific, and locations are known to differ in how profitable they can be, then firms with new ideas will initially implement these in the more profitable locations. On the opposite, they only expand, at a slower pace, into less attractive locations. These economies of specialization are strengthened by knowledge spillovers. As pointed out by Audretsch and Dohse (2007), "firms using knowledge inputs will exhibit a superior performance if they are located in an agglomeration" (p. 83). Variables capturing the local specialization may thus be introduced as explanatory factors in a firm growth equation. Another type of local concentration which can also influence firm growth is that of the local market defined by the rate of workers employed in the five biggest establishments per employment area, following Carré and Levratto (2014). According to the authors, the level of concentration at this territorial level increases the barriers to entry for new entrants and limits the opportunities of growth of establishments located in the same employment area.

• The **local propensity to generate wealth** is also supposed to play a key role in determining individual firms' behavior and performance. Indeed, opportunities for profitable business activities clearly affect the ability of an entrepreneur to expand his or her firm. It is often measured by the unemployment rate, an indicator able to encompass demand and supply characteristics. In addition, a rising unemployment rate lowers the opportunity costs for self-employment (Creedy and Johnson 1983; Evans and Leighton 1990), providing an additional supply of talented workers to hire. The decrease in the entry rate consolidates the market position of incumbents and, as a result, strengthens the arbitrage in favor of wage earning

compared to business creation. A negative correlation between the unemployment rate and the level of the median revenue at the employment area level on one hand and a negative relationship between unemployment rate and the level of demand on the other have been previously demonstrated (Herpin, 1992) in the French case.

• **Governance structure and autonomy** in the decision process also shape the economic context in which a given company operates. According to Beaujolin-Bellet et al., (2006), a higher proportion of business groups, as opposed to smaller, independent companies, tends to weaken the relationship between the firm growth path and the local economic climate. Indeed, boardroom decisions are not based on the local economic climate. Instead, they depend on the corporate strategy and need to serve the group more than the goals and specific projects determined at the subsidiary or the plant level. This is especially the case with investment, restructuring and closure of production plants, with a loss of local autonomy as a consequence. As in Garsaa et al. (2014), who show that the proportion of independent establishments in a given area positively affects the firm growth rate, we take into account such a possibility.

• It is also broadly agreed that the **labor market conditions** and the quality of the workforce act as resources a company needs to fuel its own growth path. As emphasized by Edith Penrose (1959) in the so-called resource theory, a company requires talented and skilled workers to grow. A dense labor market and a high proportion of highly-educated people able to perform superior functions facilitate the hiring of the proper workers (Acs et al., 2007). On one hand, most of the studies that take in account these aspects conclude that the availability of skilled workers exerts a positive effect on firm growth. In their empirical study of German regions, Audretsch and Dohse (2007) demonstrate that the quality of the workforce in the area where a firm is located positively affects its growth trajectory. This finding is confirmed in the French case as shown by Garsaa et al. (2013), according to whom a higher proportion of white collar and highly qualified workers leads to a higher individual growth rate for firms. Moreover, many papers concur about the positive relationship between density in employment and firm growth rate. For instance, Fingleton et al. (2004), in a study of English establishments over the period 1991-2000, find that companies located in areas characterized by a high concentration of labor force grow faster than others.

2.2. Hypotheses and empirical model

Having disentangled the relationship between the different components of the economic environment and the firm growth rate we build a framework to test the influence of location on firm performances (measured by employment growth). To do so, we raise a set of

hypotheses attaching an explicit spatial dimension to environmental forces. They depict how the local business climate disaggregated in various components such as human capital, the local labor market conditions, the structure of the productive sector, the competition, and the available human resources may intervene in the firm growth path. The following six hypotheses are drawn from the literature:

H1. The proportion of industrial establishments in an area is positively correlated with firm growth

H2. Local unemployment rate negatively affects firm growth

H3. Firm growth is a direct function of the share of stand-alone companies

H4. Local market concentration negatively influences firm growth

H5. Firm growth is positively related to employment density

H6. A higher proportion of skilled workers positively influences firm growth

To determine the effects of local characteristics on the employment growth rate at the establishment level, we estimate an empirical model of firm growth. It begins with a standard definition of firm growth (Gibrat, 1931) such as equation 1:

$$Growth_{i,t} = lnSize_{i,t} - lnSize_{i,t-1} \qquad (1),$$

where *Growth* denotes the changes in the number of employees in firm *i* at time *t*, and *Size* is the size of the firm. The basic form of the model used to estimate the individual growth rate directly comes from the multivariate model of firm growth (see Coad 2009 for a survey). It includes several location specific variables characterizing the employment area[2] in which any given establishment is located and some individual variables introduced to control the effects of the variables of interest. It is written as following:

$$Growth_{it} = \beta_0 + \sum_{k=1}^{k} \beta_k \; Loc_{kit} + \sum_{j=1}^{j} \beta_j \; Firm_{jit} + y_t + \vartheta_{it} \qquad (2),$$

where *i* designates establishment, and *t* the period. *Loc* is a vector of local variables characteristic of the area and *Firm* is a vector of a firm's characteristics such as size, age, and governance introduced in the model as control variables. $\vartheta_{it} = \mu_i + \varepsilon_{it}$ is a composed error term where μ_i and ε_{it} are respectively the individual fixed effect and the error term.

In accordance with the review of literature and our set of hypotheses, the local economic climate is split into different variables, depicting how the outside characteristics may influence the individual performance.

[2] The INSEE defines the employment area ("zone d'emploi" in French) as a geographic area within which most employees reside and work, and in which establishments can find a large supply of labor for the jobs offered. Since 2010, there are 304 employment areas in mainland France.

As education and skills have been identified as sources of influence on firm growth, we introduce the share of white-collar workers in the labor force (*Skills*) as an explanatory variable in the model. It is complemented by the share of employees working in stand-alone companies as a function of the total number of employees in a given area (*Indep*). As in Ciccone and Hall (1996), we approximate agglomeration effects using the ratio given by the total number of employees in a given area divided by its area measured in square kilometers expressed as a logarithm (*LnDens*). We also consider the number of employees in industrial manufacturing compared to the total number of employees (*Manuf*), which may also be introduced as a proxy for agglomeration effects. Average size and competition in a given area may either encourage entrepreneurs to carry out their projects or deter them from doing so. We consider that scale economies are the most powerful driving force in such a process. To capture them, we compute the share of employees working in the five largest companies operating in any employment area in the total number of employees in the same area (*C5*). Finally, we add the unemployment rate (*Unempl*) as a proxy for the local economic context as it influences the level of demand.

The definitions and sources of the different explained variables are presented in Appendix 2.

3. Data and descriptive analysis

3.1. Structure of the sample

To assess the effects of location on firm growth, we use a unique large dataset of establishments built by merging three sources provided by the French National Institute of Statistics and Economic Studies (INSEE)[3]: the Register of Businesses and Establishments (REE or Répertoire des Entreprises et des Etablissements), Local Knowledge of the Productive System (CLAP or Connaissance Locale de l'Appareil Productif) and Financial Links between Enterprises Survey (LIFI or Enquête sur les LIaisons FInancières entre sociétés) data sets over the period 2004-2010.

We eliminate from the initial database all the establishments with missing data, the establishments having no employees[4], and those whose data do not cover at least three successive years[5] over the period 2004-2010. In the end, the final dataset is composed of an

[3]We are grateful to the Statistical Confidentiality Committee (Comité du Secret Statistique), the French body supervising access to data, for providing the data bases under strict confidentiality agreements.
[4] The logarithmic form of the model requires this cleansing.
[5] This constraint is essential to calculate the employment growth rate keeping the structure of the panel.

unbalanced panel of 149, 929 establishments[6]. Table 1 presents the structure of the panel in 2004 and 2010. It appears that the number of employees increased in almost all subsectors of French manufacturing industry between 2004 and 2010 (+7%). This increase is particularly strong in the pharmaceutical industry, whose employment grows by 30% over this period. On the opposite, the manufacture of textiles, wearing apparel, and leather industry exhibits a sharp decline in the number of employees.

Table 1. Structure of the panel

Description (NAF, Rév.2, 2008)	2004				2010				2004-2010
	Number of establishments		Number of employees		Number of establishments		Number of employees		Variation (number of employees)
	%	Number	%	Number	%	Number	%	Number	%
Manufacture of food products, beverages, and tobacco products (from 10.1 to 12.00Z)	30,2	31 871	16,9	412 275	31,3	33 529	18,5	483 070	17,2%
Manufacture of textiles, wearing apparel, and leather (from 13.1 to 15.20Z)	5,4	5 742	5,1	124 442	4,8	5 163	4	104 920	-15,7%
Manufacture of wood; articles of straw and plaiting materials; paper and paper products; and Printing and reproduction of recorded media (from 16.01 to 18.20Z)	10,5	11 068	8	194 517	10	10 754	7,2	187 366	-3,7%
Manufacture of coke and refined petroleum products; chemical products; pharmaceutical products; rubber and plastic products; and other non-metallic mineral products (from 19.1 to 23.99Z)	11	11 563	17,3	422 812	11,3	12 141	18,6	485 554	14,8%
Manufacture of chemicals and chemical products (from 20.1 to 20.60Z)	2,0	2185	4,8	117 599	2,1	2284	5	129 294	9,9%
Manufacture of basic pharmaceutical products and pharmaceutical preparations (from 21.1 to 21.20Z)	0,45	474	2,5	61 151	0,5	529	3,0	79 208	29,5%
Manufacture of basic metals; and fabricated metal products (from 24.1 to 25.99B)	12,5	13 164	14,1	343 806	12,7	13 592	13,9	363 120	5,6%
Manufacture of computer, electronic and optical products; electrical equipment; and machinery and equipment n.e.c. (from 26.1 to 28.99B)	8,9	9 400	15,4	376 718	8,9	9 484	15,8	413 104	9,7%
Manufacture of motor vehicles, trailers and semi-trailers; and other transport equipment (from 29.1 to 30.99Z)	2	2 088	13,1	319 202	2	2 193	12,4	323 799	1,4%
Manufacture of furniture; Other manufacturing; and Repair and installation of machinery and equipment (from 31.0 to 33.20D)	19,5	20 504	10,1	245 211	18,9	20 189	9,6	249 659	1,8%
Total	100	105 400	100	2 438 983	100	107 045	100	2 610 592	7,0%

Note: the number of employees is that of the end of the year (12/31).

The coverage rate of our sample is quite satisfactory as shown by a comparative analysis between our sample and the French manufacturing industry in 2004 and 2010. It represents about 40% of the total number of establishments during the period under review and 72% and 88% of the total number of employees in 2004 and 2010 respectively. The details are given by figure 3 and 4, in the Appendix 1.

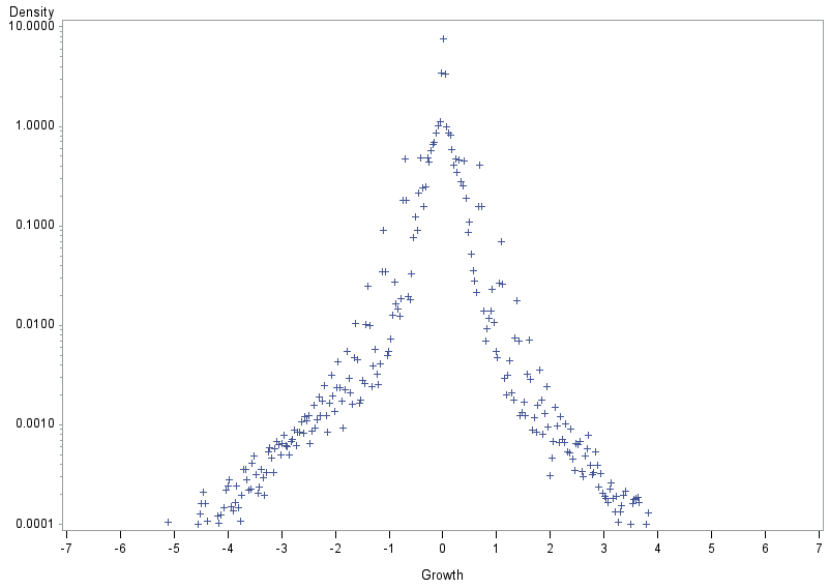
[6] 105,400 observations in 2004, 114,798 in 2005, 129,745 in 2006, 129,631 in 2007, 128,886 in 2008, 117,477 in 2009, and 107,045 in 2010.

3.2. Growth rate distribution

Since the results reported in Stanley et al. (1996), who study growth rates density in the U.S. manufacturing industry, and in Bottazzi and Secchi (2003), who examine the growth rates distribution of business firms in the Italian manufacturing industry using data disaggregated by sector, the growth rates probability density is known for "possessing the same symmetric exponential character that, when plotted on log scale, emerges as a sort of tent-like shape." (Bottazzi and Secchi, 2006, 236)[7]

The kernel density estimation of the distribution of the establishments' growth rate respects this general conclusion. As shown by Figure 1, it looks like a Laplace distribution with fat tails. The tent-shaped form of the distribution of firm growth means that most establishments do not create jobs, but a handful of them grow or decline. The job creation or destruction depends, thus, on the growth dynamics of these firms.

Figure 1. Establishment growth rate distribution during the period 20014-2010



Note: unbalanced panel of 679,271 observations over the period 2004-2010.

This trend is respected when the total sample is broken down by type of employment area (dominated by residential or non-residential activities) and activity (residential or non-residential). Figure 5 in Appendix 2 presents the plots for different subsamples, hereafter used to check for the robustness of the model.

[7] This stylized fact has been confirmed by several studies on firm growth (Fagiolo and Luzzi, 2006; Coad and Rao, 2008; Coad and Holzl, 2009; etc.)

4. Results and comments

This Section presents the results of estimation of the growth model we have run using Ordinary least squares (OLS) as well as fixed effects estimator (FE). To circumvent the problem caused by the multicollinearity bias due to the correlation between some location-specific variables (see the correlation matrix table 4, appendix 2), we have estimated five different models by including them separately.

The null hypothesis of the Hausman test[8] has been rejected for all models. Thus, they have to be estimated using a FE estimator. Consequently, we only interpret the results corresponding to this estimator. Since the OLS estimator is biased, it is simply introduced as a reference in the tables of results, and we do not comment on it. The first part of the Section presents the results obtained when the estimation is performed using the total sample. The second part proposes some additional robustness checks considering several subsamples defined considering both the global characteristics of the areas and the geographic scope of the market .

4.1. Total sample

Our results support the idea that location matters and that firm growth depends on the local context. By the way, they go in the same direction as the literature testing the influence of local characteristics on firms' performance.

Looking at the variable *Manuf*, which captures the agglomeration effects resulting from an industrial profile in the area, one observes that, as expected, the industrial specialization positively affects the employment growth of the establishments. Companies detecting employment opportunities in the manufacturing industry are then encouraged to expand their own activity. Complementarity effects can cause such a phenomenon. Since the coefficient associated with the variable *Manuf* is significantly positive, one confirms the hypothesis according to which a high degree of proximity between production units promotes growth (MAR version of agglomeration externalities).

In the majority of models, firm growth is negatively correlated with the local rate of unemployment (*Unempl*)[9]. A lower local demand resulting from a decrease in the level of

[8] The null hypothesis stands for no correlation between individual fixed effects and at least one explanatory variable included in the model. When this hypothesis is rejected, one may suspect an endogeneity bias which requires a fixed effects estimator.

[9] In Model 3, *Unempl* appears with a positive sign. It is not due to a problem of correlation (see correlation matrix, Table 4 in the Appendix 2). Introducing jointly unemployment and density into the model may cause this change in the sign because this specification does not control for the skills. However, unemployment mostly concerns unskilled workers. Unemployment is negative in model 2, which does not control for the skills either

production of establishments located in the same area or a slowdown in household demand deters firm growth. This kind of contagion effect confirms our second hypothesis.

The rate of establishments belonging to stand-alone companies (*Indep*) in a given employment area appears to be negatively correlated with the employment growth rate. This result leads us to reject our third hypothesis, according to which a higher rate of establishments owned by stand-alone companies pushes up firm growth. The strategies of business groups may explain this negative relation. Indeed, they tend to adopt offensive strategies that may discourage firm growth for a double reason. Firstly, groups tend to acquire fast growing companies as shown by Nefussi (2007) and Duhautois and Lagarde (2004). Once the target has been absorbed, this ensures synergies and a greater efficiency for the buyer. In many cases, the merger or acquisition generates a lower increase in the number of employees in the absorbing company than the one corresponding to the retention of all the employees formerly employed in the absorbed company (Picart, 2004). Secondly, top managers can be aware of the risk of acquisition which rapid growth could create. Therefore, they might prefer to slow down their growth process rather than lose their independence, following a loss of decision-making autonomy (Mottet, 2002). These strategies are particularly visible in France, where family-owned companies are increasingly taken over by large corporations.

Local concentration measured at the employment area level (*C5*) does not have any significant effect on the manufacturing establishment growth rate. The propensity to create or destroy jobs on behalf of secondary entities in the French manufacturing industry is not influenced by the biggest plants neither as customers nor as payers in a subcontracting relationship. Our fourth hypothesis is therefore rejected. This differs from the conclusion by Garsaa et al. (2014), who find a positive effect of concentration on growth rate in their study of Mediterranean companies from 2004 to 2010.

This is not the case with the employment density, which positively affects establishment growth rate. Agglomeration externalities appear to be a favorable factor in the establishment growth process. This may come from the demand side as the needs and purchases are higher in areas advantaged from a demographic point of view. On the contrary, establishments located in remote areas do not benefit from these external effects and exhibit a lower growth

---

because it introduces the rate of concentration (C5). Like *Dens*, this variable is strongly correlated with skills (see correlation matrix, Table 4 in the Appendix 2) because large plants also employed the more skilled workers. The difference comes from its superior capacity to capture qualifications. Considering skills or concentration is, thus, almost the same.

rate. Our results thus confirm the fifth hypothesis since a large labor supply enables establishments to grow faster.

The negative and highly significant coefficient of human capital (*Skills*) suggests that establishments experience lower growth rates in areas characterized by a high proportion of highly qualified employees. This conclusion is quite unusual and radically differs from the result obtained in former studies conducted at the regional level (Audretsch and Dhose, 2007, Garsaa et al. 2014), according to which human capital exerts a positive effect on the firm growth path[10]. This unexpected sign is explained by the focus on the French manufacturing industry which mainly hires blue-collar workers[11]. A higher share of white collar and "grey matter" positions for workers is not the best environment for companies whose production activity mainly requires blue-collar workers. This mismatch is exacerbated by a size effect. Indeed, a large majority of the companies in the dataset, and, thus, in the French productive system, are small. As these firms are simultaneously the ones that have the highest growth rate and those that employ the lower rate of white-collar workers[12], a higher rate of this category of workers in a given area is not necessarily an advantage. Our results are consistent with the features of our population. It is mainly composed of small plants operating in the manufacturing industry. Small establishments grow faster and employ mostly unskilled workers, who are also hired by the manufacturing industry (Baldwin, 1998 and Duhautois et al., 2014). This legitimates the results obtained.

The signs associated with the controlled variables (*Size*, *Age* and *Governance*) are consistent with the empirical literature on firm growth (See Coad, 2009 for a review of literature and Hamelin, 2013 for the business groups).

4.2. Robustness checks

In order to check for the robustness of our estimation results we have also estimated our growth model, breaking down the total sample in different sub-categories. They have been defined according to two criteria: one is geographical, the other one is based upon the structure of local production system.

- Residential vs. non-residential areas

In a first set of tests, we have distinguished establishments operating in residential areas from those located in non-residential areas. This distinction between these two specific

[10] Audretsch and Dhose (2007) are only concerned by small and new technology based companies in Germany. Garsaa et al. (2014) consider all the industries but in a limited area: the Mediterranean Coast.

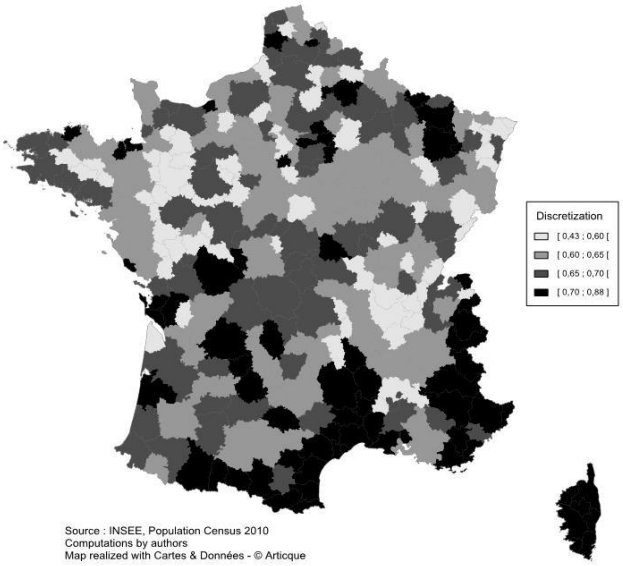
[11] According to INSEE, in 2010, the manufacturing industry employs 53.33% of blue-collar workers, whereas white collar and "grey matter" positions only represent 14.64% of the total number of employees.

[12] Still according to the INSEE, in 2010, companies employing less than 10 people employ 9.5% of white collar workers, whereas this share reaches 22.35% in establishments employing more than 250 workers.

profiles of areas has been proposed by the INSEE to provide a better description of the labor market at the local level (Léglise and Vilain, 2006). It provides an operative framework to build a typology of employment areas according to their productive features as shown by Hecquet (2013).

The residential activities that correspond to services to the population, be it permanent or temporary, in a given locality. The non-residential activities are determined as a complement to the residential ones, i.e. the ones that are excluded from the previous class. They mainly produce goods consumed outside of the area and services used by companies whose activity refers to the non-residential sphere" (INSEE, 2010). To determine whether a given employment area is residential or not, we have used an *ad hoc* dataset, provided by the INSEE[13].

Figure 2 - Share of jobs of the residential industries by employment area (2010)



The areas where the ratio exceeds the median are called "residential", whereas the ones where the ratio is below the median (0.64 at the national level) are considered as non-residential. Splitting the total population in two sub-samples allows us to minimize the sample heterogeneity since plants located in residential employment areas are more focalized on local demand than those localized in non-residential places. We thus expect that the growth rate of the former depends more on local business climate than the growth rate of the latter.

[13] Sphères présentielle et non présentielle de 1975 à 2010 available at: http://www.insee.fr/fr/themes/detail.asp?reg_id=99&ref_id=sphere.
To compute the share of employment in the residential sphere as a function of the total number of employees for every employment area, we started from data provided at the district level and aggregated them in accordance with the administrative scale.

The results are presented in Tables 6 and 7, Appendix 3. They mainly give consistency to the idea that establishments located in residential areas are more dependent on local conditions as far as employment is concerned. The comparison of the coefficients estimated for the different specifications of the model provides convergent results.

Some variables have unambiguous effects other things being equal. Looking at the sensitivity of the variable *Unempl*, it is clear that the correlation with establishment growth is stronger in residential areas than in non-residential ones. This result is confirmed regardless of the specification and this is consistent with the theory of the local roots of firm growth. The share of industrial plants in a given area (*Manuf*), introduced in Model 1, exerts a stronger influence on the growth rate of establishments located in a residential area (the estimated coefficient equals 0.824) than on the growth rate of the other ones (the estimated coefficient equals 0.335). The growth rate is also more strongly correlated with the variable representative of the density in employees (*LnDens*) for establishments located in residential areas than for those located in non-residential ones.

However, some effects are more ambiguous. They concern the share of plants belonging to stand-alone companies (*Indep*), which does not determine the firm growth rate in residential areas, whereas they negatively affect the growth rate in non-residential ones. Plants located in non-residential areas are oriented towards external markets. They more rely on corporate groups to increase their capacity to access to distant customers. There is the same hierarchy when one focuses on the share of white-collar workers (*Skills)*. It significantly deters establishment growth in non-residential areas but does not intervene in residential ones. The majority of small establishments serving a local market do not require highly skilled workers to produce goods, whereas large plants belonging to groups employ many more white-collar workers. Let us point out that the variable representative of concentration (*C5*), already non-significant in the estimation run with the total sample, remains the same regardless of the kind of area observed.

- Establishments operating in residential industries vs. establishments operating in non-residential industries

At a second stage of the robustness check, we run separate estimations according to the industrial specialization. The total sample has thus been broken down based on the type of industry in which they operate. The type of each industry is given by the INSEE in an *ad hoc* table[14]. The typology respects the definition given above. We expect establishments operating

[14] It is freely downloadable on the website : http://www.insee.fr/fr/themes/detail.asp?reg_id=99&ref_id=sphere

in residential industries to be less affected by the local economic environment than those operating in non-residential industries. Indeed, the former produces goods that meet the needs of local populations, and their location does not depend on the quality of the local conditions but on the presence of populations[15]. On the opposite, the establishments operating in non-residential industries are more attentive to local conditions as they partially determine their competitiveness.

Tables 8 and 9 in Appendix 5 present all the results of the estimations performed. The comparison of the estimated coefficients confirms the higher sensitiveness of the growth rate to local conditions for the establishments operating in non-residential industries. Most of the local variables are non-significant when we run estimations on the sub-sample composed of establishments operating in residential industries, whereas almost all the coefficients estimates are significant when estimated for the complementary subset. The only exception concerns the variable density (*lnDens*), which is very significant for the residential sample too (Table 9, appendix 3). This is consistent with the fact that these activities were intended to satisfy the general needs of the population and are, thus, all the more dynamic inasmuch as the market is extended. We observe just the opposite for the non-residential activities. In this case, the growth rate depends on all the variables but *C5*. The correlation with the rate of unemployment (*Unempl*) is negative[16]. This means that these establishments are all the most prosperous when they are located in areas where the business climate is positively oriented because of the agglomeration effects. This relation corresponds to the positive signs associated with the coefficients of the variables *Manuf* and *lnDens*. The availability of skilled workers does not seem to promote establishments' growth. It has already been pointed out by Audretsch and Dhose according to whom "Industries where knowledge is not an important factor of production depend less on knowledge inputs and provide less of a potential for knowledge spillovers and from learning from others" (Audretsch and Dhose, 2007: 84). This negative relation confirms the idea that French industry does not compete on innovation and quality but on price.

5. Conclusion and policy implications

In this paper we have sought to empirically assess the influence of the local context on individual establishment growth, an issue often debated but still barely studied. We handled it

[15] INSEE defines residential activities in manufacturing industry as a subset compounding with *Bakery and bakery confectionery*, *Cooked meats production and trade*, *Baking of bakery products*, *Confectionery*.
[16] For model 3, see footnote 9.

using a large dataset containing information about almost 150,000 plants localized in one of the 304 mainland France employment areas from 2004 to 2010. Using panel models based on firm and local level data, we show that firm growth do not only depend on internal factors and characteristics but, instead, that local characteristics matter. This suggests that economic performance is shaped by the local business climate. This general result is reinforced by the robustness checks run on subsamples. One broke down the whole population according to the kind of area where they are located, the other broke it down considering whether the activity is oriented toward a local or an external demand.

In particular, our results show that unemployment which can be considered as a proxy for demand plays a strong negative effect on the establishments' growth process. Surprisingly, at first glance, a similar negative influence flue from the variable measuring the rate of top-qualified workers in an area. This result is counter-intuitive only apparently as our study only concerns manufacturing industry known to hire a minority of white collar and "grey matter" positions workers. The growth rate of these establishments rely less on the availability of this kind of human resources than other industries. Agglomeration effects, however, have a positive influence on individual growth. Local concentration, often considered as a proxy for barriers to entry do not impact establishment growth. This is probably because big entities can initiate subcontracting relations which can also facilitate the hiring of additional workers, but not systematically. This kind of dependence between leaders and followers is somehow confirmed by the negative influence played by the rate of stand-alone establishments on the individual growth rate.

From the practitioner's point of view, the findings of this study suggest that location choice is indeed strategic since firm growth highly depends on the characteristics of the area where they are located. Even if mobility is quite rare and that production plants barely move from one employment area to another, this finding implies that managers should be cautious when they decide either to open or to close a plant and would have to consider not only internal aspects but also geographical ones.

Another implication of our findings concerns policy makers. Since the possibility to grow differs according to the location, providing direct aids and subsidies to companies is not the only one solution to support economic activity. Instead, measures aiming at nourishing and strengthening the local context should also be implemented in order i) to consolidate the growth process of existing companies, ii) to attract new ones and iii) to strengthen the link

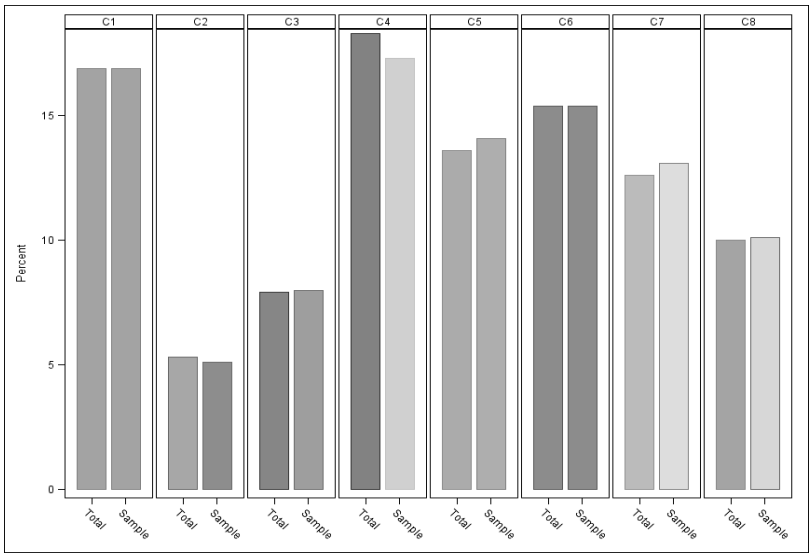
between the territory and the enterprise. This last point could also help to reduce the propensity to relocation, a concern shared by most of local policy makers. Last but not least, these findings support local policies oriented towards the endowment of territories in local resources propitious to job creation.

In spite of the novelty and the robustness of our results, there is still room to test the relation between firms' dynamics and local factors introducing different variables, using other techniques and, also, analyzing different spatial aggregations. Instead of working with a panel of establishment operating in industrial manufacturing, future research should also focus on services. It is indeed likely that these activities are less stuck to the territory by material investments and tangible capital assets so that their location choice can be more reversible. In addition, a large part of services activities heavily rely on high skilled workers. This could drastically change the nature of the relation between skills and educational attainments on one hand and firm growth on the other.

Appendices

Appendix 1. Representativeness of the dataset (2004-2010)

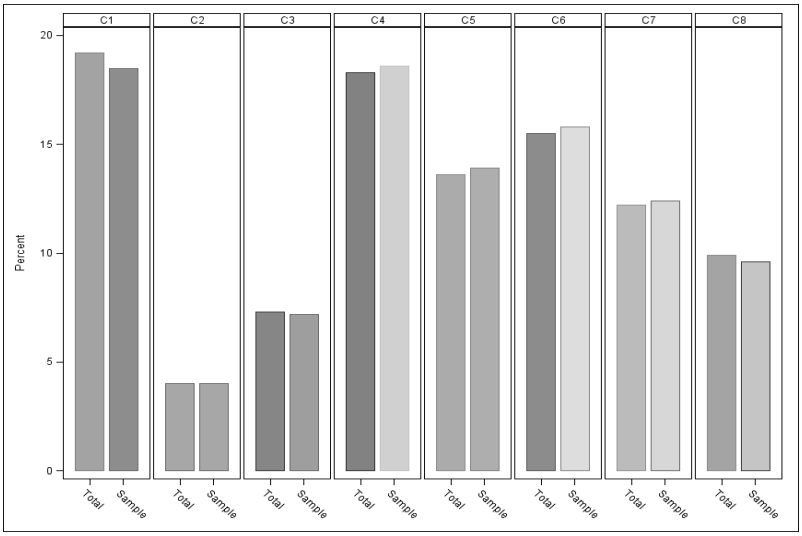
Figure 3. Comparison of the structure (number of employees) of the panel to the structure of the total population (CLAP dataset) in 2004



Legend

C1: Manufacture of food products, beverages, and tobacco products (from 10.1 to 12.00Z) **C2:** Manufacture of textiles, wearing apparel, and leather (from 13.1 to 15.20Z) **C3:** Manufacture of wood; articles of straw and plaiting materials; paper and paper products; and Printing and reproduction of recorded media (from 16.01 to 18.20Z) **C4:** Manufacture of coke and refined petroleum products; chemical products; pharmaceutical products; rubber and plastic products; and other non-metallic mineral products (from 19.1 to 23.99Z)	**C5:** Manufacture of basic metals; and fabricated metal products (from 24.1 to 25.99B) **C6:** Manufacture of computer, electronic and optical products; electrical equipment; and machinery and equipment n.e.c. (from 26.1 to 28.99B) **C7:** Manufacture of motor vehicles, trailers and semi-trailers; and other transport equipment (from 29.1 to 30.99Z) **C8:** Manufacture of furniture; Other manufacturing; and Repair and installation of machinery and equipment (from 31.0 to 33.20D)

Figure 4. Comparison of the structure (number of employees) of the panel to the structure of the total population (CLAP dataset) in 2010



Legend

C1: Manufacture of food products, beverages, and tobacco products (from 10.1 to 12.00Z) **C2:** Manufacture of textiles, wearing apparel, and leather (from 13.1 to 15.20Z) **C3:** Manufacture of wood; articles of straw and plaiting materials; paper and paper products; and Printing and reproduction of recorded media (from 16.01 to 18.20Z) **C4:** Manufacture of coke and refined petroleum products; chemical products; pharmaceutical products; rubber and plastic products; and other non-metallic mineral products (from 19.1 to 23.99Z)	**C5:** Manufacture of basic metals; and fabricated metal products (from 24.1 to 25.99B) **C6:** Manufacture of computer, electronic and optical products; electrical equipment; and machinery and equipment n.e.c. (from 26.1 to 28.99B) **C7:** Manufacture of motor vehicles, trailers and semi-trailers; and other transport equipment (from 29.1 to 30.99Z) **C8:** Manufacture of furniture; Other manufacturing; and Repair and installation of machinery and equipment (from 31.0 to 33.20D)

Appendix 2. Data description

Table 2. Definitions and sources of the variables

Variable	Definition	source
Explained variable		
$Growth_{it}$	Difference between the logarithm of the establishment number of employees at the end of the year t and t-1	CLAP
Explanatory variables		
Firm-specific variables		
$lnEmpl_{it}$	Lagged value of the logarithm of the establishments number of employees at the end of the year	CLAP
$lnAge_{it}$	The logarithm of the age of the establishment= date of creation of the establishment-t	CLAP-REE
$MicroBG_{it}$	Dummy variable equal to 1 if the establishment belongs on a micro group, zero otherwise	LIFI
$MedBG_{it}$	Dummy variable equal to 1 if the establishment belongs on a medium group, zero otherwise	LIFI
$LargBG_{it}$	Dummy variable equal to 1 if the establishment belongs on a large group, zero otherwise	LIFI
Location-specific variables		
$Unempl_{it}$	Annual unemployment rate by ZE	INSEE
$Indep_{it}$	Number of employees working in independent firms, firms affiliate in a micro groups or uncontrolled subsidiaries companies by ZE/ total number of employees by ZE	LIFI
$Manuf_{it}$	Share of workers employed in manufacturing industry in an employment area (ZE 2010) with respect to the total number of employees in this area	CLAP
$C5_{it}$	Share of workers of the biggest establishments in an employment area (ZE 2010) with respect to the total number of employees in this area	CLAP
$lnDens_{it}$	The logarithm of the number of employees working in establishments localized in an employment area (ZE 2010) divided by the surface of this area	CLAP-INSEE
$Skills_{it}$	Number of skilled (or white collars) employees working in establishments localized in an employment area (ZE 2010) divided by the total number of employees in this area	CLAP

Table 3. Descriptive statistics of the variables introduced in the model

	mean	Standard deviation	minimum	p10	p25	p50	p75	p90	maximum
Growth	-0.013	0.322	-6.866	-0.288	-0.074	0.000	0.044	0.288	6.165
lnEmpl	1.899	1.359	0.000	0.000	1.099	1.792	2.639	3.761	9.678
lnAge	2.071	0.911	0.000	0.693	1.386	2.197	2.773	3.135	4.625
lnDens	4.346	1.560	1.106	2.900	3.361	3.997	4.810	6.207	8.643
Manuf	0.152	0.070	0.026	0.069	0.102	0.139	0.190	0.242	0.466
Unempl	0.085	0.020	0.036	0.062	0.072	0.083	0.096	0.112	0.164
Indep	0.745	0.154	0.252	0.447	0.680	0.786	0.850	0.909	0.999
MicroBG	0.148	0.355	0.000	0.000	0.000	0.000	0.000	1.000	1.000
MedBG	0.060	0.237	0.000	0.000	0.000	0.000	0.000	0.000	1.000
LargBG	0.028	0.164	0.000	0.000	0.000	0.000	0.000	0.000	1.000
Skills	0.155	0.059	0.061	0.101	0.116	0.137	0.174	0.226	0.320
C5	0.081	0.041	0.013	0.030	0.058	0.076	0.102	0.131	0.381

Note: number of observations = 679,271

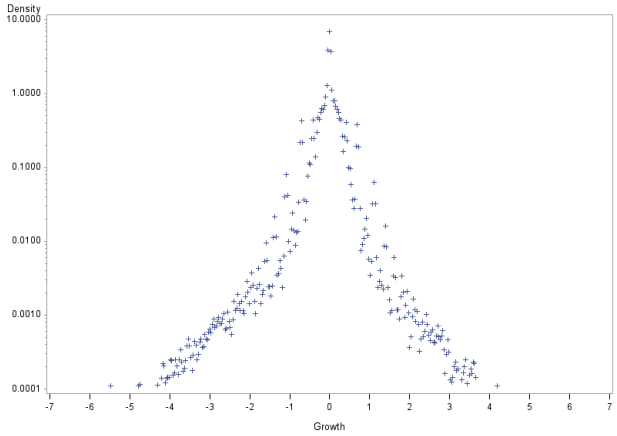
Table 4. Correlation matrix (whole sample)

	Growth	lnEmpl	lnAge	lnDens	Manuf	Unempl	Indep	MicroBG	MedBG	LargBG	Skills	C5
Growth	1.000											
lnEmpl	-0.117***	1.000										
lnAge	-0.055***	0.146***	1.000									
lnDens	-0.008***	-0.024***	-0.050***	1.000								
Manuf	-0.002*	0.122***	0.046***	**-0.426*** **	1.000							
Unempl	-0.006***	-0.023***	0.004**	0.104***	-0.125***	1.000						
Indep	0.010***	-0.017***	0.025***	**-0.789*** **	0.220***	0.082***	1.000					
MicroBG	-0.009***	0.332***	0.068***	-0.002	0.057***	-0.015***	-0.025***	1.000				
MedBG	-0.015***	0.320***	0.011***	-0.003**	0.027***	-0.005***	-0.013***	-0.105***	1.000			
LargBG	-0.011***	0.228***	-0.008***	0.003**	0.007***	-0.004***	-0.009***	-0.070***	-0.043***	1.000		
Skills	-0.001	-0.034***	-0.064***	**0.862*** **	**-0.443*** **	-0.109***	**-0.755*** **	-0.012***	-0.002	0.006***	1.000	
C5	0.002	0.036***	0.034***	**-0.574*** **	**0.469*** **	-0.007***	**0.485*** **	0.001	0.005***	0.004***	**-0.567*** **	1.000

Note: * p < 0.05, ** p < 0.01, *** p < 0.001, Number of observations= 679,271.

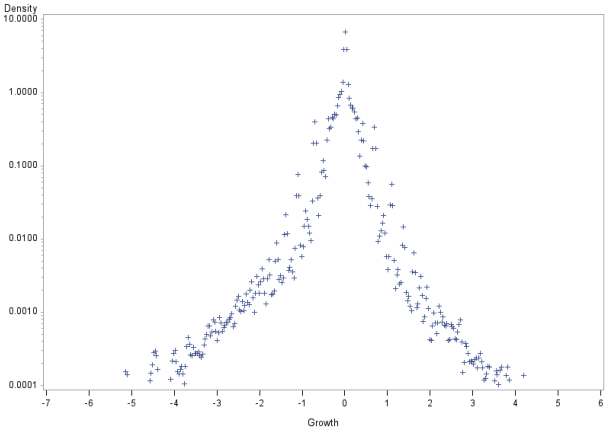
Figure 5 - Establishment growth rate distribution during the period 20014-2010 by type of area

Figure 5.1. Establishments located in residential area



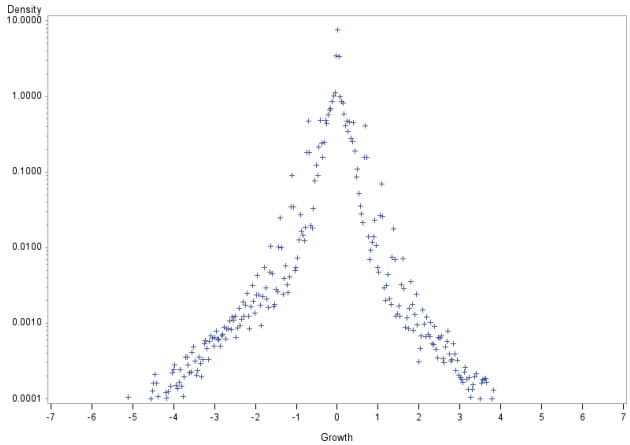
Number of observations=338076

Figure 5.2. Establishments located in non-residential area



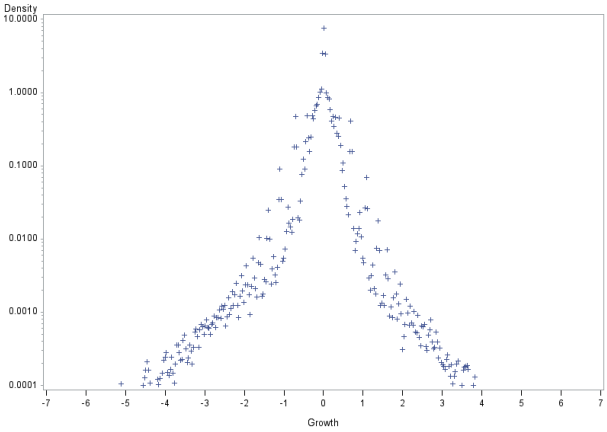
Number of observations=341195

Figure 5.3. Establishments operating in non-residential industries



Number of observations=519867

Figure 5.4. Establishments operating in residential industries



Number of observations=159404

Appendix 3. Estimation results

Table 5. Results for the total sample

	Model 1		Model 2		Model 3		Model 4		Model 5	
	OLS	**Fixed effects**	OLS	**Fixed effects**	OLS	**Fixed effects**	OLS	**Fixed effects**	OLS	**Fixed effects**
VARIABLES	Growth	**Growth**	Growth	**Growth**	Growth	**Growth**	Growth	**Growth**	Growth	**Growth**
lnEmpl	-0.0349***	**-0.712*** **	-0.0348***	**-0.712*** **	-0.0348***	**-0.712*** **	-0.0348***	**-0.712*** **	-0.0347***	**-0.712*** **
	(0.000386)	**(0.00354)**	(0.000384)	**(0.00354)**	(0.000384)	**(0.00354)**	(0.000384)	**(0.00354)**	(0.000384)	**(0.00354)**
lnAge	-0.0148***	**0.0302*** **	-0.0147***	**0.0306*** **	-0.0148***	**0.0299*** **	-0.0148***	**0.0308*** **	-0.0146***	**0.0306*** **
	(0.000525)	**(0.00321)**	(0.000525)	**(0.00321)**	(0.000524)	**(0.00321)**	(0.000524)	**(0.00321)**	(0.000525)	**(0.00321)**
MicroBG	0.0435***	**0.0238*** **	0.0436***	**0.0236*** **	0.0436***	**0.0236*** **	0.0436***	**0.0236*** **	0.0435***	**0.0236*** **
	(0.00121)	**(0.00363)**	(0.00121)	**(0.00363)**	(0.00121)	**(0.00363)**	(0.00121)	**(0.00363)**	(0.00121)	**(0.00363)**
MedBG	0.0521***	**0.0588*** **	0.0520***	**0.0590*** **	0.0520***	**0.0587*** **	0.0521***	**0.0590*** **	0.0518***	**0.0590*** **
	(0.00193)	**(0.00806)**	(0.00193)	**(0.00806)**	(0.00193)	**(0.00806)**	(0.00193)	**(0.00806)**	(0.00193)	**(0.00806)**
LargBG	0.0544***	**0.0732*** **	0.0540***	**0.0734*** **	0.0541***	**0.0733*** **	0.0543***	**0.0734*** **	0.0539***	**0.0734*** **
	(0.00260)	**(0.00971)**	(0.00260)	**(0.00971)**	(0.00260)	**(0.00971)**	(0.00260)	**(0.00971)**	(0.00260)	**(0.00971)**
Unempl	-0.103***	**-0.121**	-0.105***	**-0.353*** **	-0.0838***	**0.273** **	-0.130***	**-0.385*** **	-0.103***	**-0.353*** **
	(0.0211)	**(0.122)**	(0.0209)	**(0.119)**	(0.0210)	**(0.135)**	(0.0210)	**(0.119)**	(0.0209)	**(0.119)**
Manuf	0.0416***	**0.547*** **								
	(0.00580)	**(0.0846)**								
Indep	0.0153***	**-0.0207** **								
	(0.00268)	**(0.00886)**								
C5			0.0728***	**-0.0106**						
			(0.00951)	**(0.0808)**						
lnDens					-0.00270***	**0.263*** **				
					(0.000258)	**(0.0303)**				
Skills							-0.0743***	**-0.239*** **		
							(0.00681)	**(0.0813)**		
Year2006	0.0114***	**-0.00210***	0.0112***	**-0.00431*** **	0.0112***	**-0.00690*** **	0.0111***	**-0.00447*** **	0.0111***	**-0.00430*** **
	(0.00142)	**(0.00127)**	(0.00142)	**(0.00122)**	(0.00142)	**(0.00125)**	(0.00142)	**(0.00122)**	(0.00142)	**(0.00122)**
Year2007	0.00561***	**-0.0109*** **	0.00546***	**-0.0175*** **	0.00573***	**-0.0181*** **	0.00506***	**-0.0186*** **	0.00551***	**-0.0175*** **
	(0.00140)	**(0.00197)**	(0.00140)	**(0.00175)**	(0.00140)	**(0.00175)**	(0.00140)	**(0.00177)**	(0.00140)	**(0.00174)**
Year2008	-0.0152***	**-0.0382*** **	-0.0158***	**-0.0467*** **	-0.0154***	**-0.0416*** **	-0.0162***	**-0.0475*** **	-0.0157***	**-0.0467*** **
	(0.00140)	**(0.00264)**	(0.00139)	**(0.00236)**	(0.00139)	**(0.00240)**	(0.00140)	**(0.00237)**	(0.00139)	**(0.00236)**
Year2009	-0.0302***	**-0.0707*** **	-0.0312***	**-0.0779*** **	-0.0313***	**-0.0816*** **	-0.0326***	**-0.0827*** **	-0.0312***	**-0.0779*** **
	(0.00136)	**(0.00244)**	(0.00135)	**(0.00208)**	(0.00135)	**(0.00212)**	(0.00136)	**(0.00265)**	(0.00135)	**(0.00209)**
Year2010	-0.00427***	**-0.0712*** **	-0.00542***	**-0.0805*** **	-0.00561***	**-0.0864*** **	-0.00669***	**-0.0846*** **	-0.00546***	**-0.0805*** **
	(0.00136)	**(0.00295)**	(0.00136)	**(0.00246)**	(0.00136)	**(0.00253)**	(0.00137)	**(0.00286)**	(0.00136)	**(0.00246)**
Constant	0.0711***	**1.239*** **	0.0829***	**1.331*** **	0.0989***	**0.140**	0.103***	**1.371*** **	0.0883***	**1.331*** **
	(0.00303)	**(0.0217)**	(0.00255)	**(0.0150)**	(0.00266)	**(0.138)**	(0.00281)	**(0.0192)**	(0.00246)	**(0.0136)**
Number of observations	679,271	**679,271**	679,271	**679,271**	679,271	**679,271**	679,271	**679,271**	679,271	**679,271**
Number of establishments	149,929	**149,929**	149,929	**149,929**	149,929	**149,929**	149,929	**149,929**	149,929	**149,929**
Fisher test statistic	899.5***	**3905*** **	973.6***	**4221*** **	975.9***	**4229*** **	976.0***	**4219*** **	1060***	**4603*** **
Adjusted R^2	0.0200		0.0200		0.0200		0.0201		0.0199	
R^2 within		**0.337**		**0.337**		**0.337**		**0.337**		**0.337**
R^2 between		**0.00673**		**0.00677**		**0.00463**		**0.00680**		**0.00677**
R^2 overall		**0.0140**		**0.0140**		**0.0109**		**0.0140**		**0.0140**

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Results for the residential area

	Model 1		Model 2		Model 3		Model 4		Model 5	
VARIABLES	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**
lnEmpl	-0.0372***	**-0.724*** **	-0.0369***	**-0.724*** **	-0.0369***	**-0.724*** **	-0.0369***	**-0.724*** **	-0.0369***	**-0.724*** **
	(0.000550)	**(0.00491)**	(0.000547)	**(0.00491)**	(0.000548)	**(0.00491)**	(0.000547)	**(0.00491)**	(0.000547)	**(0.00491)**
lnAge	-0.0136***	**0.0262*** **	-0.0135***	**0.0262*** **	-0.0135***	**0.0257*** **	-0.0135***	**0.0261*** **	-0.0135***	**0.0262*** **
	(0.000757)	**(0.00458)**	(0.000757)	**(0.00458)**	(0.000757)	**(0.00458)**	(0.000757)	**(0.00458)**	(0.000757)	**(0.00458)**
MicroBG	0.0471***	**0.0240*** **	0.0472***	**0.0239*** **	0.0473***	**0.0238*** **	0.0473***	**0.0239*** **	0.0472***	**0.0239*** **
	(0.00178)	**(0.00531)**	(0.00178)	**(0.00531)**	(0.00178)	**(0.00531)**	(0.00178)	**(0.00531)**	(0.00178)	**(0.00531)**
MedBG	0.0528***	**0.0602*** **	0.0528***	**0.0603*** **	0.0528***	**0.0602*** **	0.0529***	**0.0603*** **	0.0528***	**0.0603*** **
	(0.00279)	**(0.0118)**	(0.00279)	**(0.0118)**	(0.00279)	**(0.0118)**	(0.00279)	**(0.0118)**	(0.00279)	**(0.0118)**
LargBG	0.0498***	**0.0626*** **	0.0497***	**0.0628*** **	0.0497***	**0.0631*** **	0.0498***	**0.0629*** **	0.0497***	**0.0628*** **
	(0.00362)	**(0.0143)**	(0.00362)	**(0.0143)**	(0.00362)	**(0.0143)**	(0.00362)	**(0.0143)**	(0.00362)	**(0.0143)**
Unempl	-0.0399	**-0.510** **	-0.0529*	**-0.676*** **	-0.0477	**0.125**	-0.0570*	**-0.656*** **	-0.0531*	**-0.676*** **
	(0.0296)	**(0.205)**	(0.0296)	**(0.203)**	(0.0301)	**(0.225)**	(0.0297)	**(0.204)**	(0.0296)	**(0.203)**
Manuf	0.0694***	**0.824*** **								
	(0.0145)	**(0.149)**								
Indep	-6.39e-05	**-0.00790**								
	(0.00457)	**(0.0118)**								
C5			0.00338	**0.0226**						
			(0.0184)	**(0.106)**						
lnDens					-0.000562	**0.297*** **				
					(0.000581)	**(0.0422)**				
Skills							-0.0300	**0.106**		
							(0.0185)	**(0.119)**		
Year2006	0.0120***	**0.000943**	0.0117***	**-0.00213**	0.0117***	**-0.00537*** **	0.0116***	**-0.00194**	0.0117***	**-0.00215**
	(0.00205)	**(0.00186)**	(0.00204)	**(0.00177)**	(0.00204)	**(0.00182)**	(0.00204)	**(0.00178)**	(0.00204)	**(0.00177)**
Year2007	0.00665***	**-0.0105*** **	0.00603***	**-0.0176*** **	0.00609***	**-0.0177*** **	0.00585***	**-0.0169*** **	0.00603***	**-0.0176*** **
	(0.00200)	**(0.00295)**	(0.00199)	**(0.00266)**	(0.00199)	**(0.00265)**	(0.00200)	**(0.00277)**	(0.00199)	**(0.00265)**
Year2008	-0.0135***	**-0.0379*** **	-0.0143***	**-0.0475*** **	-0.0142***	**-0.0414*** **	-0.0144***	**-0.0468*** **	-0.0143***	**-0.0474*** **
	(0.00199)	**(0.00408)**	(0.00199)	**(0.00370)**	(0.00198)	**(0.00374)**	(0.00199)	**(0.00377)**	(0.00198)	**(0.00369)**
Year2009	-0.0265***	**-0.0587*** **	-0.0275***	**-0.0690*** **	-0.0275***	**-0.0743*** **	-0.0281***	**-0.0667*** **	-0.0274***	**-0.0689*** **
	(0.00195)	**(0.00359)**	(0.00194)	**(0.00301)**	(0.00194)	**(0.00308)**	(0.00198)	**(0.00398)**	(0.00194)	**(0.00300)**
Year2010	-0.00466**	**-0.0588*** **	-0.00578***	**-0.0714*** **	-0.00580***	**-0.0798*** **	-0.00636***	**-0.0693*** **	-0.00578***	**-0.0714*** **
	(0.00197)	**(0.00435)**	(0.00195)	**(0.00361)**	(0.00195)	**(0.00376)**	(0.00199)	**(0.00431)**	(0.00195)	**(0.00361)**
Constant	0.0743***	**1.218*** **	0.0837***	**1.332*** **	0.0857***	**0.0944**	0.0888***	**1.317*** **	0.0840***	**1.334*** **
	(0.00525)	**(0.0319)**	(0.00389)	**(0.0235)**	(0.00401)	**(0.176)**	(0.00463)	**(0.0289)**	(0.00354)	**(0.0218)**
Number of observations	338,076	**338,076**	338,076	**338,076**	338,076	**338,076**	338,076	**338,076**	338,076	**338,076**
Number of establishments	74,789	**74,789**	74,789	**74,789**	74,789	**74,789**	74,789	**74,789**	74,789	**74,789**
Fisher test statistic	468.0***	**2051*** **	506.0***	**2219**	506.0***	**2222*** **	506.0***	**2219*** **	552.0***	**2420*** **
Adjusted R^2	0.0207		0.0206		0.0206		0.0206		0.0206	
R^2 within		**0.346**		**0.346**		**0.346**		**0.346**		**0.346**
R^2 between		**0.00711**		**0.00715**		**0.00615**		**0.00714**		**0.00715**
R^2 overall		**0.0153**		**0.0153**		**0.0140**		**0.0153**		**0.0153**

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7. Results for the non-residential area

	Model 1		Model 2		Model 3		Model 4		Model 5	
VARIABLES	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**
lnEmpl	-0.0330***	**-0.700*** **	-0.0329***	**-0.700*** **	-0.0330***	**-0.700*** **	-0.0331***	**-0.700*** **	-0.0326***	**-0.700*** **
	(0.000544)	**(0.00509)**	(0.000541)	**(0.00509)**	(0.000542)	**(0.00509)**	(0.000542)	**(0.00509)**	(0.000539)	**(0.00509)**
lnAge	-0.0160***	**0.0341*** **	-0.0158***	**0.0347*** **	-0.0160***	**0.0339*** **	-0.0160***	**0.0351*** **	-0.0156***	**0.0347*** **
	(0.000727)	**(0.00451)**	(0.000727)	**(0.00450)**	(0.000727)	**(0.00451)**	(0.000727)	**(0.00451)**	(0.000727)	**(0.00450)**
MicroBG	0.0403***	**0.0234*** **	0.0404***	**0.0233*** **	0.0402***	**0.0233*** **	0.0401***	**0.0234*** **	0.0403***	**0.0234*** **
	(0.00165)	**(0.00496)**	(0.00165)	**(0.00496)**	(0.00165)	**(0.00496)**	(0.00165)	**(0.00496)**	(0.00165)	**(0.00496)**
MedBG	0.0507***	**0.0575*** **	0.0505***	**0.0578*** **	0.0505***	**0.0574*** **	0.0507***	**0.0578*** **	0.0504***	**0.0578*** **
	(0.00268)	**(0.0110)**	(0.00268)	**(0.0110)**	(0.00268)	**(0.0110)**	(0.00268)	**(0.0110)**	(0.00268)	**(0.0110)**
LargBG	0.0574***	**0.0823*** **	0.0569***	**0.0825*** **	0.0572***	**0.0823*** **	0.0576***	**0.0824*** **	0.0569***	**0.0826*** **
	(0.00373)	**(0.0132)**	(0.00373)	**(0.0132)**	(0.00373)	**(0.0132)**	(0.00373)	**(0.0132)**	(0.00373)	**(0.0132)**
Unempl	-0.178***	**0.0556**	-0.156***	**-0.157**	-0.116***	**0.296***	-0.187***	**-0.199**	-0.154***	**-0.153**
	(0.0302)	**(0.153)**	(0.0299)	**(0.148)**	(0.0300)	**(0.172)**	(0.0300)	**(0.148)**	(0.0299)	**(0.148)**
Manuf	0.0245***	**0.355*** **								
	(0.00810)	**(0.106)**								
Indep	0.0267***	**-0.0343** **								
	(0.00400)	**(0.0136)**								
C5			0.0980***	**-0.168**						
			(0.0112)	**(0.127)**						
lnDens					-0.00345***	**0.202*** **				
					(0.000301)	**(0.0442)**				
Skills							-0.0881***	**-0.462*** **		
							(0.00765)	**(0.114)**		
Year2006	0.0111***	**-0.00510*** **	0.0106***	**-0.00645*** **	0.0106***	**-0.00816*** **	0.0106***	**-0.00613*** **	0.0105***	**-0.00636*** **
	(0.00196)	**(0.00176)**	(0.00196)	**(0.00168)**	(0.00196)	**(0.00173)**	(0.00196)	**(0.00168)**	(0.00196)	**(0.00168)**
Year2007	0.00457**	**-0.0128*** **	0.00495**	**-0.0183*** **	0.00539***	**-0.0189*** **	0.00461**	**-0.0194*** **	0.00497**	**-0.0183*** **
	(0.00196)	**(0.00270)**	(0.00196)	**(0.00235)**	(0.00196)	**(0.00236)**	(0.00196)	**(0.00236)**	(0.00196)	**(0.00235)**
Year2008	-0.0173***	**-0.0405*** **	-0.0171***	**-0.0475*** **	-0.0165***	**-0.0432*** **	-0.0175***	**-0.0476*** **	-0.0171***	**-0.0473*** **
	(0.00197)	**(0.00355)**	(0.00196)	**(0.00312)**	(0.00196)	**(0.00322)**	(0.00196)	**(0.00312)**	(0.00196)	**(0.00312)**
Year2009	-0.0340***	**-0.0812*** **	-0.0347***	**-0.0865*** **	-0.0351***	**-0.0884*** **	-0.0363***	**-0.0947*** **	-0.0348***	**-0.0863*** **
	(0.00189)	**(0.00339)**	(0.00189)	**(0.00291)**	(0.00189)	**(0.00293)**	(0.00190)	**(0.00356)**	(0.00189)	**(0.00290)**
Year2010	-0.00399**	**-0.0817*** **	-0.00499***	**-0.0887*** **	-0.00545***	**-0.0920*** **	-0.00643***	**-0.0954*** **	-0.00516***	**-0.0884*** **
	(0.00190)	**(0.00412)**	(0.00190)	**(0.00340)**	(0.00190)	**(0.00345)**	(0.00190)	**(0.00383)**	(0.00190)	**(0.00339)**
Constant	0.0725***	**1.277*** **	0.0860***	**1.350*** **	0.107***	**0.346**	0.112***	**1.421*** **	0.0923***	**1.337*** **
	(0.00395)	**(0.0308)**	(0.00350)	**(0.0201)**	(0.00368)	**(0.217)**	(0.00385)	**(0.0271)**	(0.00343)	**(0.0177)**
Number of observations	341,195	**341,195**	341,195	**341,195**	341,195	**341,195**	341,195	**341,195**	341,195	**341,195**
Number of establishments	75,140	**75,140**	75,140	**75,140**	75,140	**75,140**	75,140	**75,140**	75,140	**75,140**
Fisher test statistic	438.6***	**1883*** **	474.2***	**2031*** **	476.4***	**2037*** **	476.4***	**2030*** **	513.8***	**2216*** **
Adjusted R^2	0.0196		0.0195		0.0197		0.0197		0.0193	
R^2 within		**0.329**		**0.329**		**0.329**		**0.329**		**0.329**
R^2 between		**0.00624**		**0.00624**		**0.00423**		**0.00634**		**0.00626**
R^2 overall		**0.0128**		**0.0128**		**0.00978**		**0.0129**		**0.0128**

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8. Results for the establishments operating in non-residential industries

	Model 1		Model 2		Model 3		Model 4		Model 5	
VARIABLES	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**
lnEmpl	-0.0305***	**-0.676*** **	-0.0304***	**-0.676*** **	-0.0305***	**-0.677*** **	-0.0305***	**-0.676*** **	-0.0301***	**-0.676*** **
	(0.000423)	**(0.00432)**	(0.000420)	**(0.00432)**	(0.000421)	**(0.00432)**	(0.000421)	**(0.00432)**	(0.000419)	**(0.00432)**
lnAge	-0.0168***	**0.0303*** **	-0.0166***	**0.0306*** **	-0.0168***	**0.0298*** **	-0.0168***	**0.0309*** **	-0.0164***	**0.0307*** **
	(0.000617)	**(0.00383)**	(0.000618)	**(0.00382)**	(0.000617)	**(0.00383)**	(0.000617)	**(0.00383)**	(0.000618)	**(0.00383)**
MicroBG	0.0344***	**0.0235*** **	0.0344***	**0.0234*** **	0.0345***	**0.0234*** **	0.0344***	**0.0234*** **	0.0342***	**0.0234*** **
	(0.00126)	**(0.00366)**	(0.00126)	**(0.00366)**	(0.00126)	**(0.00366)**	(0.00126)	**(0.00366)**	(0.00126)	**(0.00366)**
MedBG	0.0394***	**0.0578*** **	0.0391***	**0.0581*** **	0.0393***	**0.0578*** **	0.0394***	**0.0581*** **	0.0389***	**0.0581*** **
	(0.00197)	**(0.00805)**	(0.00197)	**(0.00805)**	(0.00197)	**(0.00804)**	(0.00197)	**(0.00805)**	(0.00197)	**(0.00805)**
LargBG	0.0412***	**0.0702*** **	0.0407***	**0.0704*** **	0.0411***	**0.0704*** **	0.0413***	**0.0704*** **	0.0405***	**0.0704*** **
	(0.00263)	**(0.00962)**	(0.00263)	**(0.00962)**	(0.00263)	**(0.00962)**	(0.00263)	**(0.00962)**	(0.00263)	**(0.00962)**
Unempl	-0.126***	**-0.0341**	-0.113***	**-0.309** **	-0.0788***	**0.343** **	-0.154***	**-0.350*** **	-0.110***	**-0.309** **
	(0.0243)	**(0.136)**	(0.0240)	**(0.132)**	(0.0241)	**(0.151)**	(0.0242)	**(0.132)**	(0.0240)	**(0.132)**
Manuf	0.0408***	**0.617*** **								
	(0.00656)	**(0.0954)**								
Indep	0.0307***	**-0.0238** **								
	(0.00306)	**(0.00983)**								
C5			0.120***	**-0.0456**						
			(0.0109)	**(0.0926)**						
lnDens					-0.00449***	**0.271*** **				
					(0.000295)	**(0.0343)**				
Skills							-0.118***	**-0.322*** **		
							(0.00776)	**(0.0923)**		
Year2006	0.0191***	**0.00228**	0.0187***	**-0.000261**	0.0187***	**-0.00288** **	0.0186***	**-0.000434**	0.0187***	**-0.000236**
	(0.00163)	**(0.00149)**	(0.00163)	**(0.00142)**	(0.00163)	**(0.00146)**	(0.00163)	**(0.00142)**	(0.00163)	**(0.00142)**
Year2007	0.0115***	**-0.00578** **	0.0118***	**-0.0134*** **	0.0122***	**-0.0140*** **	0.0111***	**-0.0148*** **	0.0119***	**-0.0134*** **
	(0.00160)	**(0.00226)**	(0.00159)	**(0.00199)**	(0.00159)	**(0.00199)**	(0.00160)	**(0.00202)**	(0.00159)	**(0.00199)**
Year2008	-0.00954***	**-0.0321*** **	-0.00995***	**-0.0419*** **	-0.00933***	**-0.0365*** **	-0.0106***	**-0.0429*** **	-0.00974***	**-0.0420*** **
	(0.00159)	**(0.00300)**	(0.00159)	**(0.00266)**	(0.00159)	**(0.00272)**	(0.00159)	**(0.00267)**	(0.00159)	**(0.00266)**
Year2009	-0.0344***	**-0.0748*** **	-0.0358***	**-0.0830*** **	-0.0359***	**-0.0867*** **	-0.0380***	**-0.0893*** **	-0.0356***	**-0.0830*** **
	(0.00155)	**(0.00277)**	(0.00155)	**(0.00237)**	(0.00155)	**(0.00241)**	(0.00156)	**(0.00300)**	(0.00155)	**(0.00237)**
Year2010	0.000809	**-0.0708*** **	-0.000698	**-0.0814*** **	-0.00106	**-0.0875*** **	-0.00273*	**-0.0869*** **	-0.000710	**-0.0814*** **
	(0.00155)	**(0.00334)**	(0.00155)	**(0.00279)**	(0.00155)	**(0.00287)**	(0.00156)	**(0.00323)**	(0.00155)	**(0.00278)**
Constant	0.0593***	**1.282*** **	0.0774***	**1.390*** **	0.104***	**0.149**	0.110***	**1.442*** **	0.0859***	**1.387*** **
	(0.00345)	**(0.0250)**	(0.00294)	**(0.0176)**	(0.00310)	**(0.157)**	(0.00327)	**(0.0223)**	(0.00285)	**(0.0159)**
Number of observations	519,867	**519,867**	519,867	**519,867**	519,867	**519,867**	519,867	**519,867**	519,867	**519,867**
Number of establishments	112,330	**112,330**	112,330	**112,330**	112,330	**112,330**	112,330	**112,330**	112,330	**112,330**
Fisher test statistic	676.8***	**2569*** **	731.3***	**2776*** **	736.9***	**2782*** **	736.4***	**2775*** **	793.0***	**3028*** **
Adjusted R^2	0.0198		0.0197		0.0199		0.0199		0.0195	
R^2 within		**0.314**		**0.314**		**0.314**		**0.314**		**0.314**
R^2 between		**0.00788**		**0.00792**		**0.00485**		**0.00800**		**0.00792**
R^2 overall		**0.0129**		**0.0128**		**0.00931**		**0.0129**		**0.0129**

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 9. Results for the establishments operating in residential industries

	Model 1		Model 2		Model 3		Model 4		Model 5	
VARIABLES	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**	OLS Growth	**Fixed effects Growth**
lnEmpl	-0.0750***	**-0.833*** **	-0.0742***	**-0.833*** **	-0.0754***	**-0.833*** **	-0.0749***	**-0.833*** **	-0.0737***	**-0.833*** **
	(0.00101)	**(0.00437)**	(0.00100)	**(0.00437)**	(0.00102)	**(0.00437)**	(0.00101)	**(0.00437)**	(0.00100)	**(0.00437)**
lnAge	-0.0138***	**0.0140** **	-0.0140***	**0.0141** **	-0.0136***	**0.0135** **	-0.0138***	**0.0140** **	-0.0144***	**0.0140** **
	(0.00101)	**(0.00600)**	(0.00101)	**(0.00600)**	(0.00101)	**(0.00600)**	(0.00101)	**(0.00600)**	(0.00101)	**(0.00600)**
MicroBG	0.0609***	**0.0498*** **	0.0604***	**0.0499*** **	0.0599***	**0.0495*** **	0.0604***	**0.0499*** **	0.0617***	**0.0499*** **
	(0.00684)	**(0.0176)**	(0.00684)	**(0.0176)**	(0.00683)	**(0.0176)**	(0.00684)	**(0.0176)**	(0.00684)	**(0.0176)**
MedBG	0.0816***	**-0.0568**	0.0787***	**-0.0570**	0.0818***	**-0.0564**	0.0786***	**-0.0569**	0.0799***	**-0.0570**
	(0.0191)	**(0.0624)**	(0.0191)	**(0.0624)**	(0.0191)	**(0.0630)**	(0.0191)	**(0.0625)**	(0.0191)	**(0.0624)**
LargBG	0.00425	**0.111**	0.0109	**0.111**	4.58e-05	**0.109**	0.00338	**0.111**	0.0186	**0.111**
	(0.0790)	**(0.0735)**	(0.0790)	**(0.0736)**	(0.0785)	**(0.0740)**	(0.0787)	**(0.0738)**	(0.0791)	**(0.0736)**
Unempl	-0.0458	**-0.381**	-0.0902**	**-0.421**	-0.145***	**0.0683**	-0.0441	**-0.401**	-0.0910**	**-0.421**
	(0.0422)	**(0.270)**	(0.0418)	**(0.267)**	(0.0421)	**(0.294)**	(0.0421)	**(0.268)**	(0.0418)	**(0.267)**
Manuf	-0.00892	**0.102**								
	(0.0125)	**(0.180)**								
Indep	-0.0548***	**-0.0107**								
	(0.00562)	**(0.0201)**								
C5			-0.135***	**0.0739**						
			(0.0195)	**(0.164)**						
lnDens					0.00624***	**0.213*** **				
					(0.000546)	**(0.0637)**				
Skills							0.146***	**0.128**		
							(0.0146)	**(0.169)**		
Year2006	-0.0127***	**-0.0122*** **	-0.0122***	**-0.0125*** **	-0.0123***	**-0.0147*** **	-0.0120***	**-0.0124*** **	-0.0120***	**-0.0125*** **
	(0.00282)	**(0.00244)**	(0.00282)	**(0.00231)**	(0.00282)	**(0.00239)**	(0.00282)	**(0.00232)**	(0.00282)	**(0.00231)**
Year2007	-0.0131***	**-0.0233*** **	-0.0141***	**-0.0246*** **	-0.0148***	**-0.0252*** **	-0.0133***	**-0.0239*** **	-0.0140***	**-0.0245*** **
	(0.00287)	**(0.00398)**	(0.00287)	**(0.00356)**	(0.00287)	**(0.00357)**	(0.00287)	**(0.00365)**	(0.00287)	**(0.00356)**
Year2008	-0.0329***	**-0.0519*** **	-0.0328***	**-0.0534*** **	-0.0339***	**-0.0496*** **	-0.0321***	**-0.0528*** **	-0.0329***	**-0.0533*** **
	(0.00288)	**(0.00555)**	(0.00288)	**(0.00504)**	(0.00288)	**(0.00510)**	(0.00288)	**(0.00507)**	(0.00288)	**(0.00503)**
Year2009	-0.0155***	**-0.0508*** **	-0.0139***	**-0.0519*** **	-0.0138***	**-0.0549*** **	-0.0111***	**-0.0493*** **	-0.0138***	**-0.0519*** **
	(0.00277)	**(0.00505)**	(0.00276)	**(0.00432)**	(0.00276)	**(0.00438)**	(0.00278)	**(0.00551)**	(0.00276)	**(0.00431)**
Year2010	-0.0175***	**-0.0592*** **	-0.0158***	**-0.0607*** **	-0.0156***	**-0.0654*** **	-0.0133***	**-0.0584*** **	-0.0156***	**-0.0607*** **
	(0.00283)	**(0.00620)**	(0.00282)	**(0.00522)**	(0.00282)	**(0.00536)**	(0.00283)	**(0.00604)**	(0.00282)	**(0.00522)**
Constant	0.176***	**1.062*** **	0.147***	**1.067*** **	0.115***	**0.131**	0.109***	**1.052*** **	0.136***	**1.074*** **
	(0.00658)	**(0.0439)**	(0.00527)	**(0.0295)**	(0.00527)	**(0.281)**	(0.00559)	**(0.0387)**	(0.00499)	**(0.0263)**
Number of observations	159,404	**159,404**	159,404	**159,404**	159,404	**159,404**	159,404	**159,404**	159,404	**159,404**
Number of establishments	37,599	**37,599**	37,599	**37,599**	37,599	**37,599**	37,599	**37,599**	37,599	**37,599**
Fisher test statistic	437.0***	**2924*** **	470.0***	**3167*** **	474.5***	**3166*** **	473.2***	**3166*** **	510.5***	**3454*** **
Adjusted R^2	0.0343		0.0340		0.0346		0.0343		0.0337	
R^2 within		**0.421**		**0.421**		**0.421**		**0.421**		**0.421**
R^2 between		**0.000507**		**0.000505**		**0.000768**		**0.000519**		**0.000509**
R^2 overall		**0.0311**		**0.0310**		**0.0289**		**0.0312**		**0.0311**

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

References

Acemoglu, D., Johnson, S. and Robinson, J., 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review,* 91(5):1369-1401.

Acs, Z., Armington, C. and Zhang, T., 2007. The determinants of new-firm survival across regional economies: The role of human capital stock and knowledge spillover. *Papers in Regional Science,* 86(3): 367–391.

Acs, Z. J., Audretsch, D. B. and Feldman, M. P., 1994. RandD Spillovers and Recipient Firm Size. *Review of Economics and Statistics,* 76(2): 336–340.

Audretsch, D. B. and Dohse, D., 2007. Location: A neglected determinant of firm growth. *Review of World Economics,* 143(1):79-107.

Audretsch, D. B., Hülsbeck, M. and Lehmann, E., 2012. Regional competitiveness, university spillovers, and entrepreneurial activity. *Small Business Economics,* 39(3):587-601.

Audretsch, D. and Feldman, M., 2004. Knowledge Spillovers and the Geography of Innovation. *Handbook of Urban and Regional Economics,* Volume 4 :2713-2739.

Baldwin, R., 1994. Towards an Integrated Europe. *Centre for Economic Policy Research, London.*

Barbosa, N. and Eiriz, V., 2011. Regional Variation of Firm Size and Growth: The Portuguese Case. *Growth and Change,* 42(2):25-158.

Beaujolin-Bellet, R. et al., 2006. Anticipation et accompagnement des restructurations d'entreprises : dispositifs, pratiques, évaluation. *DARES, document d'études,* # 119.

Becchetti, L. and Trovato, G., 2002. The determinants of growth for small and medium sized firms. The role of the availability of external finance. *Small Business Economics,* 19(4):291-306.

Bottazzi, G. and Secchi, A., 2003. Common Properties and Sectoral Specificities in the Dynamics of U.S.Manufacturing Companies. *Review of Industrial Organization,* 23(3-4):217-232.

Bottazzi, G. and Secchi, A., 2006. Explaining the distribution of firm growth rates. *Journal of Economics,* 37(2): 235–256.

Braunerhjelm, P. and Borgman, P., 2004. Geographical concentration, entrepreneurship and regional growth: Evidence from regional data in Sweden, 1975-99. *Regional Studies,* 38(8):929-947.

Carré, D. and Levratto, N., 2013. Dans quelle mesure la croissance des entreprises est-elle sensible a leur localisation ? Une analyse a partir d'une population d'établissements français entre 2003 et 2009. *Région et Développement,* Issue 38.

Ciccone, A. and Hall, R., 1996. Productivity and the Density of Economic activity. *American Economic Review,* 86(1):54-70.

Coad, A., 2009. *The Growth of Firms: A Survey of Theories and Empirical.* Cheltenham, UK: Edward Elgar.

Coad, A. and Holzl, W., 2009. On the autocorrelation of growth rates. Evidence for micro, small and large firms from the austrian service industries, 1975-2004. *Journal of Industry, Competition and Trade,* 9:139-166.

Coad, A. and Rao, R., 2008. Innovation and firm growth in high-tech sectors: a quantile regression approach. *Research Policy,* 37(4):633-648.

Creedy, J. and Johnson, P., 1983. Firm Formation in Manufacturing Industry. *Applied Economics,* 15:177-185.

Dethier, J., Hirn, M. and Straub, S., 2011. Explaining Enterprise Performance in Developing Countries with Business Climate Survey Data. *World Bank Research Observer,* 26(2):258-309.

Duhautois, R. and Lagarde, P., 2004. Entreprises de groupe ou entreprises indépendantes : quel impact sur les réallocations d'emplois ?. *Economie et Statistique,* September, 380:63-81.

Duhautois, R., Levratto, N. and Petit, H., 2014. Au-delà de la tertiarisation : 30 ans de modifications du tissu productif. *Working Paper, Centre d'Etudes de l'Emploi.*

Duranton, G. and Puga, D., 2005. From sectoral to functional urban specialization. *Journal of Urban Economics,* 57(2): 343–370.

Evans, L. and Leighton, L., 1990. Small Business Formation by Unemployed and Employed Workers. *Small Business Economics,* 2(4):319-30.

Fagiolo, G. and Luzzi, A., 2006. Do liquidity constraints matter in explaining firm size and growth? Some evidence from Italian manufacturing industry. *Industrial and Corporate Change* , 15(1):1-39.

Figueiredo, O., Guimarães, P. and Woodward, D., 2009. Localization economies and establishment size: Was Marshall right after all?. *Journal of Economic Geography,* 9(6): 853–868.

Fingleton, B., Igliori, C. and Moore, B., 2004. Employment Growth of Small Computing Services Firms and the Role of Horizontal Clusters: Evidence from Great Britain 1991–2000. *Urban Studies,* 41(4), :773-799.

Fuchs, M., 2009. The determinants of local employment dynamics in Western Germany. *IAB discussion paper,* Issue 2009-18.

Gabriele, R., Giuliani, D., Corsino, M. and Espa, G., 2013. Reassessing the spatial determinants of the growth of Italian SMEs. *Department of Economics and Management, University of Trento, Italy, Discussion Paper,* Issue 2013/06.

Garsaa, A., Levratto, N. and Tessier, L., 2014. La Corse est-elle soluble dans le modèle méditerranéen ? Une analyse à partir d'une régression quantile sur données d'entreprises en panel entre 2004 et 2010. *Revue d'Economie Régionale et Urbaine,* forthcoming.

Gibrat, R., 1931. *Les inégalités économiques.* s.l.:Paris: Librairie du Receuil Sirey.

Glaeser, E., 1992. Are cities dying?. *Journal of Economic Perspective,* 12(2):139-160.

Glaeser, E., Kallal, H., Scheinkman, J. and Shleifer, A., 1992. Growth in Cities. *Journal of Political Economy,* 100(6): 1126–1152.

Hall, R. and Jones, C., 1999. Why Do Some Countries Produce So Much More Output per Worker than Others?. *Quarterly Journal of Economics,* 114(1) :83-116.

Hamelin, A., 2013. Influence of family ownership on small business growth. Evidence from French SMEs. *Small Business Economics,* 41(3) :563-579.

Hecquet, V., 2013. Emploi et territoires de 1975 à 2009 : tertiarisation et rétrécissement de la sphère productive. *Economie et Statistique,* Issue 462-463 :25-68.

Herpin, N., 1992. Les conséquences du chômage sur la consommation. *Economie et Statistique,* Issue 256:43-57.

Insee, 2010. Sphère présentielle et sphère non présentielle. *INSEE documentation.*

Jaffe, A. B., 1989. Real Effects of Academic Research. *American Economic Review,* 79(5): 957–970.

Krugman, P., 1991. Increasing returns and economic geography. *Journal of Political Economy,* 99(3) :483-499.

La Porta, R., Lopez-de-Silanes, F. and Shleifer, A., 2008. The Economic Consequences of Legal Origins. *Journal of Economic Literature,* 46(2): 285–332.

Léglise, D. and Vilain, E., 2006. Vers une connaissance de l'emploi salarié au niveau local. *Pages de profils,* Issue 8.

Marshall, A., 1920. *Principles of Economics.* Londres, Macmillan: s.n.

Martin, P., Mayer, T. and Maynerie, F., 2011. Spatial concentration and plant-level productivity in France. *Journal of Urban Economics,* 69(2) :182-195.

Mottet, S., 2002. La démutualisation. *Revue d'économie financière,* 67 :111-120.

Neary, J. P., 2001. Of Hype and Hyperbolas: Introducing the New Economic Geography. *Journal of Economic Literature ,* 39(2): 536–561.

Nefussi, B., 2007. Les groupes absorbent des sociétés à fort potentiel. *Insee Première,* Issue 1144, July.

Ottaviano, G. and Puga, D., 1998. Agglomeration in the Global Economy: A Survey of the 'New Economic Geography'. *The World Economy,* 21(6):707-731.

Penrose, E. T., 1959. *The theory of the growth of the firm.* New York: John Wiley and Sons.

Picart, C., 2004. Le tissu productif : renouvellement à la base et stabilité au sommet. *Economie et Statistique,* Issue 371:89-108.

Porter, M., 1998. Clusters and the New Economics of Competition. *Harvard Business Review.*

Schimke, A. and Teicher, 2012. Impact of local knowledge endowment on employment growth in nanotechnology. *DRUID Academy,* Issue 19-21.

Schulz, N. and Stahl, K., 1996. Do consumers search for the highest price? Equilibrium and monopolistic optimum in a differentiated products markets. *Rand Journal of Economics,* Volume 27: 542–562.

Stanley, M. H. R., Nunes Amaral L.A., Buldyrev S.V., Harlin S., Leschorn H., Maass P., Salinger M.A. and Stanley H.E., 1996. Scaling behaviour in the growth of companies. *Nature*, Volume 379 :804-806.