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Do place-based policies help people? Evidence from French enterprise zones.

P.CHARNOZ[1]

[1] CREST and University Paris Sud (RITM). E-mail: pauline.charnoz@ensae.fr

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Pauline Charnoz

*University Paris Sud (RITM) and Crest**

Abstract

This paper evaluates the effect of enterprise zones on their residents. Using the French case, it provides results on a dimension that has not been much studied but is quite crucial for understanding the mechanisms at play : the social composition of the zones. It also provides new results for the French case, complementing and reconciling results of previous studies.

The paper will show : first, a significant effect of the program on the unemployment rate of residents of French enterprise zones due, in large part, to the fact that some exemptions were made conditional on local hiring ; second, that this result is mainly due to composition effects. The unemployment rate of the residents decreases mainly because of a change in the resident composition of the zones. Enterprise zone programs with a local hiring condition seem to change the social mix of the zone.

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*pauline.charnoz@ensae.fr

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1. Introduction

Enterprise zone programs (hereafter EZ) were launched in the 1970s in the UK as a remedy for deprived urban neighborhoods. Numerous programs have been implemented subsequently: in the US since the 1980s and in France since the 1990s. They are based on more or less generous tax exemptions granted to firms located in chosen areas. They generally target labor and/or capital expenditures. EZ programs are still quite popular (Information report on enterprise zones, 2013), in particular at the level of local politics, but they are costly and the urban problems they were meant to solve have not gone away decades later. In France for instance, in August 2012, outbreaks of violence occurred in poor urban neighborhoods, and the unemployment rate is still much higher in these zones (24% in 2010 against 9.5% for the whole country, see ONZUS report, 2011). An evaluation of these programs is important from a public policy point of view but also from an academic point of view, as among other things it offers an opportunity to study the response of economic actors to fiscal incentives. This paper provides results on a dimension that has not been much studied but is quite crucial for understanding the mechanism of EZ: the resident composition effects. It also provides new results, derived from the French case, on the effect of EZ on those who reside in these zones.

Neumark and Simpson (2014), Lynch and Zax (2011) and Ham et al. (2011) review the evidence on EZ, and find it difficult to arrive at a general statement about their efficiency, although studies are quite numerous. EZ can in fact be evaluated on various dimensions. The first and more obvious way is to look at the effect on firms, as this is the direct channel of the policy: are they attracted to the zone? Do they increase their employment? If the firms do not respond to the incentives, then it is likely that the program has no effect on other dimensions. If they do, the next logical step is to assess whether this results in a better situation for the residents.

As pointed out by Neumark and Simpson (2014), EZ are specific among place-based policies because their ultimate goal is to help people. EZ are targeted at depressed areas (low income, high poverty rate, high unemployment rate), so there is a redistributive aspect to these programs. The policy implicitly assumes that bringing jobs closer to residents is a solution. The idea that too great a distance between jobs and residency prevents some people from finding a job is known as the spatial mismatch hypothesis (Gobillon et al., 2007) and EZ programs are viewed as a way to reduce spatial mismatch. But bringing jobs into the zones might not be enough : the financial incentive may be enough to make firms move into the area, but will they necessarily employ those living nearby? It could be the case for instance that the skills of residents do not correspond to the needs of the firm. In other words, spatial mismatch might not be the only reason for the difficulties the residents experience on the labor market; other factors could be skills mismatch or discrimination. The firms would then keep on employing people from outside the zone if the cost of commuting to the zone is not too high. Briant et al. (2014) do indeed show that the less isolated EZ attract more firms : this is an important clue that the mobility of workers may play a part in the success of EZ (though the firms in question might also be motivated by the ease of reaching suppliers or customers).

To counteract this phenomenon, some programs have a local hiring condition : some, or some parts, of the exemptions are granted only if a percentage of the workforce resides in the zone. The addition of this condition is also an indirect indication that just bringing the firms into the zone is not enough, and thus that spatial mismatch alone cannot account for the poor performance of residents on the labor market. The presence of this condition may hinder firms from hiring outside the zone, but it will then raise the incentives for workers with other profiles to move into the EZ. Even without a local hiring condition, there is an incentive for workers who can potentially work for the EZ firms to move into the zone, as they thus become cheaper hires for the EZ firms. Gottlieb and Glaeser (2008) summarize this concern this way "place-based policies that throw enough resources at a small community may indeed be able to improve the quality of that place, but it is not obvious that the poorer residents of that community will benefit. Some community-based policies may just lead employers to come to the area and hire new migrants." The next step in evaluation is thus to try to find out whether workers do indeed change their residency because of the program, or to put it differently, whether the resident composition of the zones changes.

Finally, if there is an effect of EZ on the location of firms and/or residents, one would expect an effect on land/real estate prices, as demand for space increases and the supply is very inelastic. Some even argue

that in the long run all the subsidies will be taken into account in land/real estate prices and will thus benefit land owners (Lynch and Zax, 2011; Gottlieb and Glaeser, 2008; Kline and Moretti, 2014). Another issue, related to general equilibrium effects, is the possibility of positive or negative externalities on adjacent zones. The gains of the treated zones might be obtained at the expense of their neighbors.

The French enterprise zone program was implemented in 1997, then renewed and extended in 2004 and 2006. It grants very large tax exemptions to firms located in the enterprise zones and it has a local hiring condition : the payroll exemptions are granted only if at least 20% of the workers are residents of the enterprise zone, 33% after 2002. Most econometric evaluations of French EZ use establishment level data and are thus concentrated on firm outcomes. Rathelot and Sillard (2008), Givord et al. (2013), Mayer et al. (2013), Trevien et al. (2012) and Briant et al. (2014) all study business creations and/or firm employment located in the zones. They find a small positive effect of the EZ on these outcomes for the 2004 program, and a stronger effect for the one of 1997 (Trevien et al., 2012, about 50 000 jobs after 5 years for 38 zones). Gobillon et al. (2012) partly address the impact on residents by studying the unemployment exit rate of the EZ residents, controlling by their characteristics. Their results are for the whole Paris region, and are conducted at a broader spatial level than the zone itself (they observe municipalities containing an EZ). Although they study the 1997 EZ for which the effect on firms is quite strong, the positive effect they find is both small and temporary (10 jobs per semester per zone). As the local hiring condition is in place, these results may appear contradictory. This paper complements and reconciles these results by showing that, while there is an effect on the employment of residents, it is to a large extent driven by an effect on the social composition of the zones. The paper shows that the program affects not only the location of firms but also the location of the residences of the workers and thus the social composition of the EZ, and does not do much to improve the situation of the “original" residents.

More precisely, I initially find a significant effect of the program on the unemployment rate of residents of 1997 French EZ, and this effect does appear to be largely due to the local hiring condition. This hints that the higher unemployment rate in the EZ is probably caused more by skills mismatch or discrimination than by spatial mismatch. Second, this result is mainly driven by composition effect, i. e. the unemployment rate of the residents decreases mainly because of a change in the resident composition of the zones.

Section 1 presents the French enterprise zone program, the data and the econometric method used to evaluate it. Global results and the evaluation of the effect of the local hiring condition are presented in section 2. Section 3 studies composition effects more precisely. In section 4, I estimate the effect of the program on adjacent zones. Section 5 concludes.

2. The French program of enterprise zones

This section first presents the design of the French EZ program, and then describes the data and econometric methodology used in order to achieve an evaluation of the effect on residents and social composition within the EZ.

2.1. The design of the program

The "Pacte de Relance pour la ville" (Urban Stimulus Package) was enacted in 1996 (effective in 1997). It creates 3 types of priority zones, roughly nested. First 751 ZUS (Zones d'Urbanisation Sensibles, sensitive urban zones) are defined. The choice is inspired by previous urban programs and by qualitative criteria such as "deteriorated housing" and "unbalance between residential and working zones." Among these ZUS, 416 ZRU (Zones de Redynamisation Urbaine, urban redynamisation zones) are then defined, and from that set 44[1] ZFU (Zones Franches Urbaines, urban enterprise zones, hereafter designated as ZFU 1G) which are the most disadvantaged according to a synthetic index. This index of deprivation is computed using the

[1] 38 without French overseas territories

unemployment rate, the proportion of residents under 25 years old, the proportion of residents without a diploma and the average earnings in the municipality. The ZFU comprised about 700 000 residents in the 1990s. The ZFU program was renewed and extended to 41 new zones in 2003 (effective in January 2004, hereafter designated as ZFU 2G) and 15 in 2006 (effective in 2006, hereafter designated as ZFU 3G) thus creating a second and third generation of ZFU. There are thus today 100 ZFU.

The ZFU are the French equivalent of what are designated EZ in the US and UK. The firms located in the EZ (ZFU) benefit from large tax exemptions (corporate income tax, local business tax, payroll tax) for 5 years. These exemptions are granted to firms with less than 50 employees, and to new firms as well as to firms already in the zone before designation. As a comparison, firms in the ZRU benefit from exemptions for only one year and only when they are new incomers. The ZRU are thus very lightly treated in comparison to the ZFU (see figure A.18 for a detailed comparison). There are no systematic exemptions for the ZUS. Apart from the creation of new ZFU, the program was also renewed for the existing ZFU, and a progressive exit from the program was implemented : instead of a total halt to the exemptions for a firm after 5 years, a degressive rate is applied to the exemptions over the following 3 to 9 years. A firm can thus be treated for up to 14 years.

Apart from this design with three roughly nested types of zone, another key feature of the program is the fact that payroll tax exemptions are made conditional on local hiring : a proportion of at least 20% of employees must be living in the zone for the firm to benefit from payroll tax exemptions. The level of local residency needed to meet this condition was extended to 33% in 2002 and 50% in 2012. In 2002, it was also extended to all residents of the ZUS who are located within the same urban unit[2] as the ZFU in question. The residents of a ZUS (or ZRU) who are in the same urban unit as a ZFU can therefore be directly impacted by the program since 2002. Lastly the only jobs eligible for the tax-exemption condition are ones that employ workers on long-term contracts, a category that covers open-ended contracts (CDI, "contrat à durée indéterminée") and fixed-term contracts of more than 12 months.

2.2. Data and econometric method

The purpose here is to study the effects of the program on the residents of the zones rather than on the people working there. It is thus necessary to use data that include the location of the residences of the workers. The French Labor Force Survey is a survey conducted at the main residence of households, and gathers fine geographical information (at the census block level, finer than municipality) for the surveys of 1993 to 2011. All household members aged 15 and over are interviewed. The survey generates rotating panel data (dwellings are interviewed several times) and the sample is stratified and clustered. Areas of 40 dwellings (or 20 in cities of more than 100 000 inhabitants) are sampled, and all the dwellings in each area are surveyed.[3] This data set is thus of particular interest for this evaluation, as the geographical level is sufficiently fine to identify the enterprise zones, and it provides a great deal of information on the labor market situation of the residents.

The evaluation is made with a standard Difference-in-Difference method (hereafter DD), implemented on the treated group (residents of the enterprise zones) and a control group that has to be defined. The model is the following : i is an individual and t the year. Y is the outcome of interest (for instance the probability of unemployment), EZ is a dummy for living in a treated zone and γ_t is a year fixed effect.

$$Y_{it} = \alpha EZ_i + \beta EZ_i * 1_{t>=97} + \gamma_t + u_{it} \quad (1)$$

[2]Urban units are defined by the INSEE (French national institute of statistics) as a municipality or a group of municipalities forming a continuous built-up zone (no space of more than 200 meters between any two buildings) and with at least 2000 inhabitants.

[3]A comparison of the sample of ZUS in the Labor Force survey of 1999 with the Census confirms that they are representative. For instance, the unemployment rate (with the Census definition) is 25% in the ZUS (computations made from the results in Tocqueux and Moreau (2002)) and 25.6% in the sample in 1999. The activity rate of the 15-24 years old is 33% in the census and it is 31.6% in our sample. The weights provided by the producer (INSEE) are used for statistics and estimations.

The β coefficient in the linear regression 1 gives the effect of the treatment under the hypothesis that the difference between treated and control would have been constant over time in the absence of treatment. The coefficient is then estimated by Ordinary Least Squares (OLS). In this basic framework, errors are assumed to be homoscedastic, which is probably not the case here for two reasons : first, this is a rotating panel data set, and, as an area is observed 3 times (before 2002 and 6 times after), the 3 (or 6) observations are likely to be correlated (serial correlation, see Bertrand et al. (2004)) ; second, the sample is clustered, so it is very likely that errors for individuals of the same area are correlated (spatial correlation).

To deal with the serial correlation problem, one can allow for a correlation between the errors of each individual. The variance of the residuals is then, with T=3 for instance :

$$V(u) = I_N \otimes \begin{pmatrix} \sigma_{11} & \sigma_{12} & \sigma_{13} \\ \sigma_{12} & \sigma_{22} & \sigma_{23} \\ \sigma_{13} & \sigma_{23} & \sigma_{33} \end{pmatrix} = I_N \otimes \Omega \tag{2}$$

where N is the number of individuals, I_N is the identity matrix. Ω is then estimated by $\widehat{\Omega} = \overline{\underline{\widehat{u_i}}\,\underline{\widehat{u_i}}'}$ where $\underline{\widehat{u_i}}' = (\widehat{u_{i1}}, \widehat{u_{i2}}, \widehat{u_{i3}})$ is the estimated residual for individual i. With $\underline{\widehat{x_i}}' = (\widehat{x_{i1}}, \widehat{x_{i2}}, \widehat{x_{i3}})$ the explanatory variables $(EZ_i, EZ_i * 1_{t>=97}, \gamma_t)$, the variance of the estimator is thus :

$$\widehat{V}(\widehat{\beta}) = \frac{(\overline{\underline{\widehat{x_i}}'\underline{\widehat{x_i}}})^{-1}\overline{\underline{\widehat{x_i}}'\widehat{\Omega}\underline{\widehat{x_i}}}(\overline{\underline{\widehat{x_i}}'\underline{\widehat{x_i}}})^{-1}}{N} \tag{3}$$

or

$$\widehat{V}(\widehat{\beta}) = \frac{(\sum_{i=1}^{N}\underline{\widehat{x_i}}'\underline{\widehat{x_i}})^{-1}(\sum_{i=1}^{N}\underline{\widehat{x_i}}'(\sum_{i=1}^{N}\underline{\widehat{u_i}}.\underline{\widehat{u_i}}')\underline{\widehat{x_i}})(\sum_{i=1}^{N}\underline{\widehat{x_i}}'\underline{\widehat{x_i}})^{-1}}{N} \tag{4}$$

To take into account potential heteroscedasticity as well, a White style robust covariance matrix can be computed, as follows :[4]

$$\widehat{V}(\widehat{\beta}) = \frac{(\sum_{i=1}^{N}\underline{\widehat{x_i}}'\underline{\widehat{x_i}})^{-1}(\sum_{i=1}^{N}\underline{\widehat{x_i}}'\widehat{u_i}.\underline{\widehat{u_i}}'\underline{\widehat{x_i}})(\sum_{i=1}^{N}\underline{\widehat{x_i}}'\underline{\widehat{x_i}})^{-1}}{N} \tag{5}$$

The estimation 5 of the variance of the estimator does not require the number of observations by individuals to be the same. In our case, this is important as some sampling areas at the beginning and end of the period are observed only once or twice (due to the sample design).

Lastly, to take into account the potential spatial correlations, I aggregate the data at the sampling area level as suggested by Bertrand et al. (2004). The model is then, with a indexing a sampling area, A the total number of sampling areas and I_A the identity matrix :

[4] see Wooldridge (2009) for more details.

$$Y_{at} = \alpha EZ_a + \beta EZ_a * 1_{t \geq 97} + \gamma_t + u_{at}$$

with

$$V(u) = \frac{\sigma}{2} I_A,$$

and

$$\widehat{V}(\widehat{\beta}) = \frac{(\sum_{a=1}^{A} \widehat{\underline{x_a}}' \widehat{\underline{x_a}})^{-1} (\sum_{a=1}^{A} \widehat{\underline{x_a}}' \widehat{\underline{u_a}} . \widehat{\underline{u_a}}' \widehat{\underline{x_a}}) (\sum_{a=1}^{A} \widehat{\underline{x_a}}' \widehat{\underline{x_a}})^{-1}}{A} \tag{6}$$

This is the model that is estimated in the remainder of the paper. For the first set of results, no other control variables are introduced, in order to estimate a global effect of the program. Later, some variables are added to control for potential social composition changes induced by the program. These social composition changes are a potential channel of the effect of the program and are thus also studied separately.

2.3. Choice of the control group

As the ZFU have been chosen from among the ZRU, which are very specific urban neighborhoods, it makes sense to try to find a control group among the ZRU as well. Indeed these neighborhoods have been chosen at the same time and with similar criteria (the synthetic index mentioned earlier), so they are more likely to be a good control group. The effect estimated is thus the effect of becoming ZFU compared to ZRU.

As there have been several waves of the program, the zones that became ZFU later (in 2004 and/or 2006) could be used as a control group for the first generation. One may assume that the ZFU of the subsequent generations will have common features with those of the first generation. This is a standard strategy in the evaluation literature. Previous papers have shown, however, that the second generation is quite different from the first (Givord et al., 2013) and there are too few observations of 3rd generation zones for a control group. For these same reasons, only the first generation is evaluated.[5]

The estimations are made on the period 1993-2011.[6] This means that the effect is estimated up to 15 years out from the start of the program.

There are several ways to construct a good control group from among the set of ZRU :

- The first possibility is to simply take all ZRU. The ZFU1G have been chosen from among the ZRU as those most deprived by some social indicators, so by nature they will be distinguished by a different level of unemployment. But as all ZRU are zones of deprivation, I can also assume (and partly test) that their evolutions were similar before designation and would have remained similar without the program.

- Another solution is to exclude the ZRU later to be selected as the 2nd or 3rd generation of ZFU. The ZFU2G in particular have been found to possess quite specific features.

- A source of concern is the possibility that the ZRU which are too close geographically to the ZFU might be affected by the treatment. A third approach excluding the ZRU that are in the same urban unit of a ZFU is thus tested.

[5] I did seek a suitable control group for the 2nd generation among the ZRU as for the ZFU1G but the placebo tests rejected them.

[6] I have performed estimations of the same kind on the period 1993-2005, in other words before the start of the 2nd generation, and the results are similar.

- Lastly, a very common approach in the literature is to use a propensity score matching method : one estimates the probability of being treated according to some characteristics. Each zone is assigned a score according to this model, and each treated zone is matched to the non-treated zone with the closest score (closest neighbor method). Certain information about the zones from the census of 1990 (population size, share of 15-25 year olds, unemployment rate, share of non-European citizens) is used to find a match for the ZFU1G among the ZRU (see AppendixB).

In any case, observations of the ZRU which did become ZFU (2G or 3G) are excluded when they turned into a ZFU. Moreover, because of the extension in 2002 of the local hiring condition to all the ZUS falling within the same urban unit as a ZFU, the observations of ZRU in the same urban unit as a ZFU are excluded, but only after 2002 and when the ZFU is created. As these cases are not too numerous, it is simpler and not too costly to exclude them rather than keeping them and controlling for all these events.[7]

3. Results on the employment of residents

The results are presented with the ZRU that are never ZFU as a control group, but they are similar for all control groups (see comparisons and placebo tests further in this section). This is the preferred specification as it makes it possible to retain enough observations to have power in the estimations.

3.1. Global results

This section presents the global or "raw" effect, i. e. without controlling for any social characteristics, of the program on the residents' labor market outcomes.

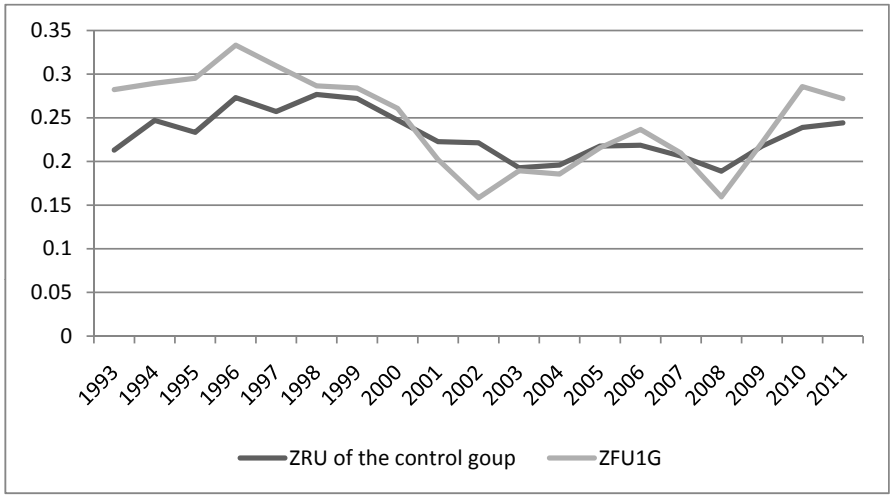
The DD estimation shows a significant reduction – 7.4 percentage points – of unemployment in the ZFU (see figure 3) when it is roughly 30% before the start of the program (see figure 1). As the only previous study (Gobillon et al., 2012) evaluating the effect on residents focuses exclusively on the Paris region and finds a small significant effect, an estimation is run without the Paris region to check if this region is driving the results. Without the Paris region, the effect is still very close – 6.5 percentage points – and still significant. The unemployment rate is one way to look at the effect, but it depends on both the number of jobs occupied by residents[8] and their rate of participation in the labor force. So one might want to look as well at the employment rate of the population. Here the population studied is persons 15-65 years old, as those working outside this age range are very few and highly specific. As the program concerns private sector firms, it is interesting to distinguish employment in the private versus the public sector, to check if the effect really is on private sector jobs. Another concern is this: at the same period some public jobs were massively created for young people ("emplois jeunes") and especially young people from these neighborhoods.[9] The "emplois jeunes" program is the same across all ZFU and ZRU but it will be reassuring that the effect of the EZ program examined in this paper is not driven by public jobs. The population of the 15-65 year olds is thus divided between wage earners in the private sector, wage earners in the public sector, self-employed individuals, and people without jobs (unemployed or out of the labor force). Figure 2 presents the share of these four groups among the 15-65 year olds in the ZFU1G and in the control group from 1993 to 2011. Figure 4 presents the DD estimation of the effect of the program on the shares of these four groups (the effects sum up to zero). And it shows a significant increase of people working in the private sector (wage earners or self employed) and a significant decrease of people without jobs while there is no significant effect for the public sector. This therefore confirms the initial results.

[7] Estimations have been run with this alternative option and results are similar

[8] Note that it is not possible to determine whether the jobs are indeed located in the ZFU, but there is no reason why job opportunities outside the zones would evolve differently between treated and control groups.

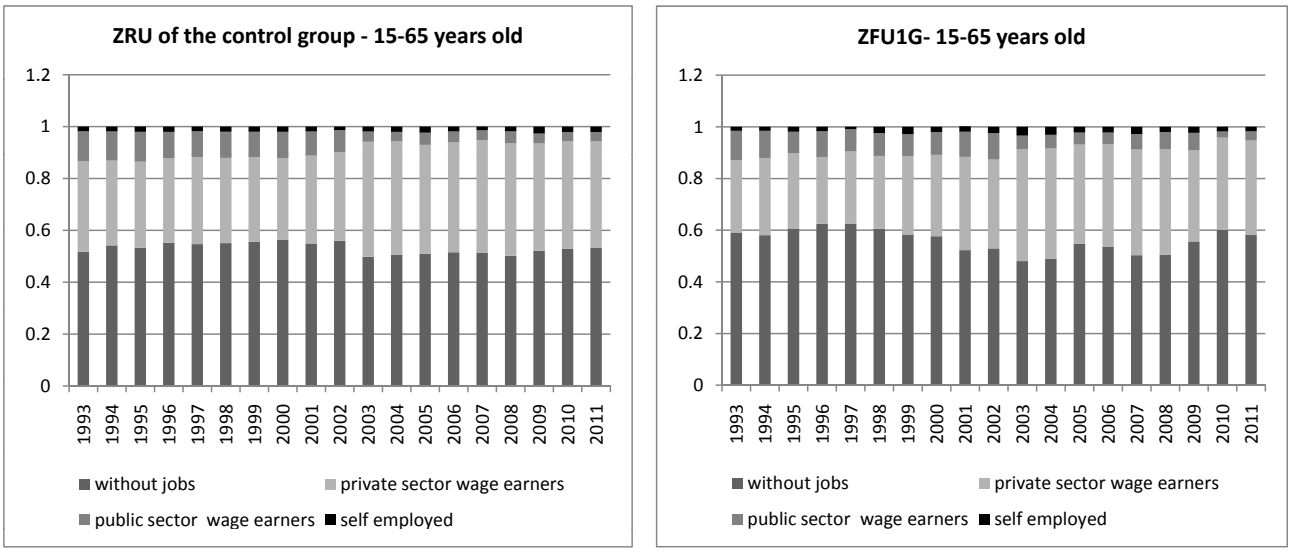
[9] The "emplois jeunes" are specific jobs for people under 26 years old and a portion of the unemployed aged 26-30. They are created in the public or non-profit sectors and the remuneration is partially paid by the State. The program was created in 1997 and ended in 2002. Only contracts already existing were maintained after 2002.

Figure 1: Unemployment rate in ZFU1G and control group from 1993 to 2011



Source : French Labor Force Survey, 1993-2011

Figure 2: Employment of 15-65 year olds in ZFU1G and control group from 1993 to 2011



Source : French Labor Force Survey, 1993-2011

Figure 3: DD estimations for unemployment rate

Control group	ZRU never ZFU	ZRU never ZFU
Geographical scope	all	without Paris region
ZFU1G	0.044 (0.029)	−0.009 (0.036)
ZFU1G × post97	−0.074*** (0.026)	−0.065** (0.028)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	2 202	1 965
obs. (individuals × year)	55 892	49 440
R^2	0.31	0.32

Source : French Labor Force Survey, 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Figure 4: DD estimations for employment of 15-65 years old

	share among 15-65 years olds of			
	private sector wage earners	public sector wage earners	self employed	without jobs
ZFU1G	−0.042* (0.025)	−0.007 (0.018)	−0.010* (0.006)	0.059* (0.032)
ZFU1G×post97	0.032 (0.020)	0.021 (0.016)	0.010* (0.006)	−0.062** (0.026)
year fixed effects	yes	yes	yes	yes
UU fixed effects	yes	yes	yes	yes
obs. (sampling areas×year)	2 224	2 224	2 224	2 224
obs. (individuals×year)	100 926	100 926	100 926	100 926
R^2	0.31	0.28	0.17	0.31

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented. Note that the number of observations slightly varies with the outcome (unemployment or jobs). This is due to the fact that when the outcome is computed on a smaller population, some sampling areas have no observations (it happens that no one from the sampling area is in the labor force for instance) and thus do not contribute to the estimations.

Figure 5: Placebo estimations for the effect of ZFU1G on unemployment rate

	all ZRU	ZRU never ZFU	ZRU never ZFU not in UU of ZFU	matched ZRU
ZFU1G	0.046	0.040	0.050	0.144***
	(0.044)	(0.047)	(0.037)	(0.045)
ZFU1G × 1993	−0.008	0.005	0.044	−0.006
	(0.052)	(0.054)	(0.049)	(0.050)
ZFU1G × 1994	−0.016	−0.015	0.005	−0.018
	(0.041)	(0.043)	(0.043)	(0.045)
ZFU1G × 1995	−0.005	−0.002	0.025	−0.013
	(0.025)	(0.027)	(0.037)	(0.030)
year fixed effects	yes	yes	yes	yes
UU fixed effects	yes	yes	yes	yes
obs. (sampling areas × year)	537	414	0	223
obs. (individuals × year)	11889	9392	0	4807
R^2	0.42	0.45	0.23	0.52

Source : French Labor Force Survey, 1993-1996

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Before going into further detail, the validity of the DD strategy is tested through placebo tests (figure 5) and the robustness of the results to the choice of the control group is also tested (figure 6). The idea of the placebo test is to verify that the treated and control groups are really similar in trend before the treatment of 1997. Only the years 1993 to 1996 are used. The test can be performed only if several years of observation before the treatment are available, as it is necessary to measure not only the difference between the two groups but also their trends. A regression is then run controlling for the difference in level of unemployment between the two groups (dummy ZFU1G) as in the previous DD estimation and estimating an effect of a "fake" or placebo treatment in some years (1993, 1994 and 1995). In no case is this fake treatment for any possible control groups significant (figure 5) which means that the control and treated group do have similar trends in unemployment before the start of the program. Our identification strategy thus appears valid.

As all the possible control groups are valid, the robustness of the results to the choice of the control group can be tested. They are very similar, all significant and not significantly different from one another (see figure 6).

The size of effect estimated here can be compared to other results on the first generation of ZFU. First Trevien et al. (2012) estimate that the program induced a creation of 41500 to 56900 jobs (estimates for the year 2001, 5 years after the start of the program). According to an administrative report of 2002[10], there are 72 409 jobs in ZFU in December 2001 and among them 63 325 are exonerated. So it appears that the majority of these jobs are due to the program.

But these jobs are not necessarily occupied by residents : only 25% of them are occupied by residents (this ratio is available only for 1999[11]). If I assume that the ratio is identical in 2001, this means that there are roughly 16 000 jobs exonerated and occupied by residents of the ZFU. This is an upper bound of the direct effect[12] of the program for the residents, as there is no evaluation of what portion of these jobs would have existed without the program.

[10]Bilan des zones franches urbaines, rapport au parlement (2002)

[11]Bilan des zones franches urbaines, rapport au parlement (2002)

[12]This does not, however, take into account potential positive externalities : the program might also have increased the number of non-exonerated jobs available to the residents through an increase in local economic activity for instance.

Figure 6: DD estimations of the effect of ZFU1G on unemployment rate for different control groups

	all ZRU	ZRU never ZFU	ZRU never ZFU not in UU of ZFU	matched ZRU
ZFU1G	0.044	0.044	0.209***	0.126***
	(0.027)	(0.029)	(0.069)	(0.028)
ZFU1G × post97	−0.084***	−0.074***	−0.096***	−0.074***
	(0.025)	(0.026)	(0.026)	(0.028)
year fixed effects	yes	yes	yes	yes
UU fixed effects	yes	yes	yes	yes
obs. (sampling areas × year)	2 550	2 202	1 874	1 094
obs. (individuals × year)	63 138	55 892	49 690	26 780
R^2	0.30	0.31	0.34	0.35

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights.As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Gobillon et al. (2012) find that the program created 10 jobs per semester per enterprise zone in the Paris region. Assuming that this number is the same for the enterprise zones outside the Paris region and for all the semesters from 1997 to 2001, this leads to an estimation of 10∗2 semesters∗5 years∗38 zones = 3 800 jobs created in 2001 thanks to the program and benefiting to the residents.

There are approximately 294 000 people in the labor force in the ZFU1G in the 1999 Census. So the estimated 7.7 percentage points reduction in unemployment corresponds to approximately 22 000 jobs. This is quite close to the 16 000 upper bound estimated previously. However this estimation is not very precise due to the small number of observations : the 95% confidence interval is 6 800 to 37 800 jobs. The effects could be much smaller but the lower bound of the interval is still higher that the estimation of Gobillon et al. (2012). I can conclude for now that there is an effect for the whole program, not just for the Paris region, and that this effect is of a larger magnitude than estimated by Gobillon et al. (2012).

3.2. Efficiency of the local hiring condition

In this section, I evaluate whether this positive effect on the employment of residents is due to the local hiring condition, using changes in the percentage of local hiring required over the period of study, or the fact that it is restricted to long term contracts.

The local hiring condition was tightened in 2001 (effective in 2002) : it was raised from 20% to 33% and was extended to workers residing in all ZUS that were part of the same urban unit as a ZFU. The first column in figure 7 details the effect of the program on unemployment year by year, to try to detect any additional specific effect of the ZFU1G after 2002. This effect is indeed stronger and more significant since 2002. So the tightening of the condition does appear to have had an effect for the ZFU1G. The second column in figure 7 presents the estimations for the share of 15-65 year olds working as private sector wage earners and the results show the same pattern (although they are not significant).

With this first approach, it is difficult nonetheless to distinguish between the effect of the local hiring condition and a progressive effectiveness of the program overall. One of the requirements of the local hiring condition pertains to the type of labor contract. Hence another way to test the utility and effectiveness of the hiring condition is to study the effect of the program on jobs with a long term contract. There is potentially a selection effect if the contracts of employed people only are studied. If more jobs are created but with short term contracts, and at the same time the long term contract share rises for those who would have

Figure 7: Effect by year of ZFU1G on unemployment rate and share of private sector wage earners among 15-65 years,

	unemployment rate	share among 15-65 years old private sector wage earners
ZFU 1G	0.048^{*}	-0.041^{*}
	(0.029)	(0.025)
ZFU 1G×an=1997	-0.008	-0.002
	(0.035)	(0.025)
ZFU 1G×an=1998	-0.043	0.003
	(0.039)	(0.027)
ZFU 1G×an=1999	-0.044	0.030
	(0.039)	(0.028)
ZFU 1G×an=2000	-0.039	0.045
	(0.040)	(0.032)
ZFU 1G×an=2001	-0.062^{*}	0.064^{**}
	(0.037)	(0.032)
ZFU 1G×an=2002	-0.097^{***}	0.040
	(0.033)	(0.033)
ZFU 1G×an=2003	-0.087^{**}	0.066^{*}
	(0.040)	(0.038)
ZFU 1G×an=2004	-0.117^{***}	0.061
	(0.043)	(0.037)
ZFU 1G×an=2005	-0.149^{***}	0.041
	(0.044)	(0.036)
ZFU 1G×an=2006	-0.108^{**}	0.037
	(0.047)	(0.047)
ZFU 1G×an=2007	-0.109^{***}	0.050
	(0.040)	(0.038)
ZFU 1G×an=2008	-0.172^{***}	0.054
	(0.039)	(0.043)
ZFU 1G×an=2009	-0.101^{***}	-0.020
	(0.037)	(0.037)
ZFU 1G×an=2010	-0.062	0.006
	(0.038)	(0.031)
ZFU 1G×an=2011	-0.086^{**}	0.020
	(0.039)	(0.032)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas×year)	2 200	2 224
obs. (individuals×year)	59 797	100 926
R^2	0.32	0.31

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented. Note that the number of observations slightly varies with the outcome (unemployment or jobs). This is due to the fact that when the outcome is computed on a smaller population, some sampling areas have no observations (it happens that no one from the sampling area is in the labor force for instance) and thus do not contribute to the estimations.

Figure 8: Effect of ZFU1G on the type of contracts

	among 15-65 years olds	
	private sector wage earners with **long term contracts**	private sector wage earners with **short term contracts**
ZFU1G	−0.039*	−0.002
	(0.023)	(0.008)
ZFU1G × post97	0.017	0.009
	(0.020)	(0.009)
ZFU1G × post2002	0.017	−0.008
	(0.022)	(0.011)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	2 224	2 224
obs. (individuals × year)	100 926	100 926
R^2	0.24	0.22

Source : French Labor Force Survey 1993-2011

Long term contracts : undetermined duration (CDI) or at least than 12 months. Short term contracts : duration inferior to 12 months.
*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

been employed without the program, the rate of long term contract among the employed might decrease. Or if the jobs created have the same distribution between short and long term contracts as those that exist already, there will be no effect of the program on the share of long term contracts among employed people. So the results would have to be interpreted relative to the distribution without the program. To avoid this, it is more straightforward to present the number of long term (and respectively short term) contracts of private sector wage earners relative to the 15-65 year old population (figure 8). There is a positive effect of the program on long term contracts share among the 15-65 year old population, but it is not significant. Nonetheless when effects are detailed by year (figure 9), they are stronger and more significant year after year. On the other hand, the short term contracts share does not significantly rise. This is another hint that the tightening of the local hiring condition does have a positive effect on the employment of residents.

Figure 9: Effect by year of ZFU1G on the type of contracts

	among 15-65 years olds	
	private sector wage earners with **long term contracts**	private sector wage earners with **short term contracts**
ZFU 1G	−0.039*	−0.002
	(0.023)	(0.008)
ZFU 1G × an=1997	−0.010	0.008
	(0.024)	(0.011)
ZFU 1G × an=1998	−0.017	0.020
	(0.024)	(0.012)
ZFU 1G × an=1999	0.023	0.007
	(0.028)	(0.014)
ZFU 1G × an=2000	0.040	0.005
	(0.031)	(0.013)
ZFU 1G × an=2001	0.058*	0.006
	(0.030)	(0.015)
ZFU 1G × an=2002	0.055*	−0.014
	(0.032)	(0.018)
ZFU 1G × an=2003	0.052	0.013
	(0.035)	(0.018)
ZFU 1G × an=2004	0.070**	−0.009
	(0.034)	(0.017)
ZFU 1G × an=2005	0.050	−0.009
	(0.034)	(0.021)
ZFU 1G × an=2006	0.036	0.001
	(0.042)	(0.023)
ZFU 1G × an=2007	0.033	0.018
	(0.036)	(0.019)
ZFU 1G × an=2008	0.021	0.033
	(0.043)	(0.021)
ZFU 1G × an=2009	−0.032	0.012
	(0.035)	(0.024)
ZFU 1G × an=2010	0.016	−0.009
	(0.031)	(0.019)
ZFU 1G × an=2011	0.031	−0.011
	(0.029)	(0.017)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	2 224	2 224
obs. (individuals × year)	100 926	100 926
R^2	0.24	0.23

Source : French Labor Force Survey 1993-2011

Long term contracts : undetermined duration (CDI) or at least than 12 months. Short term contracts : duration inferior to 12 months.

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

4. Composition effects

The program has decreased resident unemployment, thanks partly to the local hiring condition. This section investigates whether this has helped the "original" residents, or whether changes in social composition have occurred.

As noted in the introduction, a key issue is the composition effect of the program. A way to test this is to directly estimate the effect of the program on some sociodemographic characteristics. I study the occupations of residents, separating them into four groups based on the French classification of occupations: high-skilled (executive jobs), medium skilled (for example, mid-level manager), low skilled in service occupations (employees) and low skilled in manufacturing occupations (workers). Results in figure 10 show that the new jobs are medium or high skilled. It is not clear however if this means that the residents already in place are getting more qualified jobs than they would have without the program, or if some new residents with those skills are coming in. To disentangle the two possibilities, it is helpful to look at characteristics than cannot be changed easily and that are relevant on the labor market. I study age as a proxy for experience and the level of education. Figure 11 shows that the population is a bit older and more educated than it would have been without the program, so the program does induce a change in the resident composition of the zone.

These characteristics are traditionally associated with better labor market outcomes.To be sure that their presence is explanatory, at least in part, of the effect of the program, I run the same regression as in figure 3 but with controls and verify if the estimated effect is different. The controls used are age and age squared, the level of education[13], gender, nationality [14], and the share of single-parent families [15]. Figure 12 shows that the estimated effect is then lowered by half (and not significant) meaning that some composition effects do explain the result.[16] Only certain observed characteristics have been taken into account but it is possible that some composition effects on unobservable characteristics occurred too, lessening the effect even more.

To examine this question more precisely, it is of interest to distinguish, within the zone, the arriving, staying and leaving residents. This information is not available, but thanks to the survey design, it is possible to know if the residents were living in the same dwelling as the year before.[17] I define as a new resident someone who did not live in the same dwelling the year before. This is only a proxy of what it would be useful to measure, as they might have arrived from another dwelling in the same zone. However it is possible to know if they come from another municipality; so they may be split between the ones coming from within and from outside the municipality. The proportion of new residents with either definition is not much impacted by the program (figure 13). In a second step I examine whether the characteristics of these new residents change because of the program. Figure 14 shows that residents coming into the zone from the same municipality are indeed more frequently employed in the private sector (compared to new residents of the control group zones). They are a bit older and more educated (however this is not significant, see figure 15). The characteristics of new residents coming from outside the municipality are unchanged (results are presented in AppendixC).[18]

To sum up, there has been a change in EZ composition due to the program and mostly through a reallocation within the municipality. Some residents living relatively close to the neighborhood and who

[13]The diploma classification is from the lowest to the highest : no diploma, primary and junior high school ("brevet des collèges"), low vocational ("Cap-Bep"), high vocational ("baccalauréat professionnel") and high school ("baccalauréat général"), some college (1 or 2 year of post secondary studies), university (at least 3 years of post secondary studies). No diploma is used as reference in the estimation.

[14]A dummy for non-European nationality is used. These deprived neighborhoods are known to have a concentration of low skilled immigrants, a characteristic which is not favorable on the labor market.

[15]This is also a characteristic which is a disadvantage on the labor market.

[16]The results are then more comparable with Gobillon et al. (2012) who used controls.

[17]This piece of information is not requested at every interview, so the number of observations is lower.

[18]These results can be compared to Freedman (2012) who found, for another type of place-based policies, an increasing effect on residents' turnover.

Figure 10: Effect of ZFU1G on employment by professions

	share among 15-65 years olds of			
	private sector high skilled jobs	private sector medium skilled jobs	private sector employees (low skilled)	private sector workers (low skilled)
ZFU1G	−0.011	−0.018**	0.002	−0.021
	(0.008)	(0.008)	(0.012)	(0.015)
ZFU1G × post97	0.020**	0.029***	−0.015	0.004
	(0.008)	(0.008)	(0.011)	(0.014)
year fixed effects	yes	yes	yes	yes
UU fixed effects	yes	yes	yes	yes
obs. (sampling areas × year)	2 224	2 224	2 224	2 224
obs. (individuals × year)	100 926	100 926	100 926	100 926
R^2	0.24	0.23	0.29	0.24

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented. High skilled occupations correspond to number 3 in the French socio-economic ranking, for medium skilled occupations, it is 4, for employees 5 and for workers 6.

Figure 11: Effect of ZFU1G on the sociodemographic characteristics of zone residents

	age (in years) in whole population	share of at least high school graduates among 15-65 years olds
ZFU1G	−3.6***	−0.054***
	(1.1)	(0.020)
ZFU1G × post97	2.9***	0.046**
	(1.1)	(0.019)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	2 239	2 224
obs. (individuals × year)	119 196	100 926
R^2	0.32	0.41

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Figure 12: DD estimations of ZFU1G effect with sociodemographic controls

Outcome	unemployment rate	private wage earners among 15 65 years olds
ZFU1G	0.020	−0.008
	(0.023)	(0.023)
ZFU1G × post97	−0.050**	0.031
	(0.021)	(0.022)
age	−0.023***	0.057***
	(0.008)	(0.008)
age squared	0.000	−0.001***
	(0.000)	(0.000)
non Europeans	0.259***	−0.145***
	(0.037)	(0.037)
single head family	0.113***	−0.133***
	(0.034)	(0.044)
men	0.049	0.079
	(0.035)	(0.051)
education(ref: no diploma)		
- primary and junior high school	−0.164***	0.159**
	(0.047)	(0.067)
- low vocational	−0.180***	0.141***
	(0.037)	(0.044)
- high vocational and high school	−0.297***	0.353***
	(0.044)	(0.055)
- some college	−0.324***	0.431***
	(0.047)	(0.065)
- university	−0.352***	0.206***
	(0.042)	(0.061)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas×year)	2 197	2 220
obs. (individuals×year)	58 429	84 770
R^2	0.55	0.48

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Figure 13: Effect of ZFU1G on the share of new residents in the zone

	share of new residents (less than 1 year)		
	all	coming from inside the municipality	coming from outside the municipality
ZFU1G	−0.008	0.007	−0.016
	(0.016)	(0.011)	(0.011)
ZFU1G × post97	0.003	−0.001	0.005
	(0.016)	(0.011)	(0.010)
year fixed effects	yes	yes	yes
UU fixed effects	yes	yes	yes
obs. (sampling areas × year)	1 612	1612	1 612
obs. (individuals × year)	55 358	55358	55 358
R^2	0.22	0.19	0.21

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Figure 14: Effect of ZFU1G on labor market outcomes of new residents coming from the same municipality

	unemployment rate	private wage earners among 15 65 years olds
ZFU1G	0.049	−0.005
	(0.079)	(0.064)
ZFU1G × post97	−0.114	0.104*
	(0.071)	(0.063)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	876	966
obs. (individuals × year)	2 176	3 392
R^2	0.41	0.39

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Figure 15: Effect of ZFU1G on on the sociodemographic characteristics of new residents coming from the same municipality

	age (in years) in whole population	share of at least high school graduates among 15-65 years olds
ZFU1G	−2.400	−0.004
	(1.661)	(0.056)
ZFU1G × post97	−0.598	0.051
	(1.849)	(0.052)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	985	947
obs. (individuals × year)	3 530	2 981
R^2	0.26	0.46

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

have better ex ante chances to be hired, do decide to move inside the zone. If they were living close by already, the move might not have been too costly.

5. Geographical externalities

The foregoing results hint that geographical externalities could be an issue and that neighbors of the EZ might be affected too. They also show that measuring the effect at the municipality level might tell a different story. This part tries to probe these issues.

In the literature, the spatial level of the data used has been found to be rather important. First there is a mechanical effect : if the effect is measured at a higher level of geographical aggregation than the treated zone (and there are no externalities), the estimated effect is a mean of a zero effect and the effect of the program. Indeed Gobillon et al. (2012),when they restrict their estimation to zones where the enterprise zone is a larger part of the municipality, find a greater effect. In figure 16, the DD estimations are re-run aggregating the data at the municipality level, and the effect is indeed much diluted (2.1 percentage points compared to 7.4), even if it remains significant. This may partly explain why the magnitude of the effect estimated by Gobillon et al. (2012) is smaller.

If it is the case that there are geographical spillovers or externalities, measuring the effect of the EZ at the municipality level may be even more problematic. There could be for example negative spillovers if unemployed residents of the ZFU are employed instead of neighbors living in closer proximity. Then the number of jobs measured at the ZFU level will be higher and there will be a negative effect on the near neighbors. To evaluate this issue, figure 17 presents a DD estimation of the effect of the ZFU program on the neighbors of the zones.[19] No significant effect on the unemployment rate of the neighbors and on their private sector employment is detected. There thus might not be externalities on the neighbors or at least not of a significant magnitude.

[19]Neighbors are defined as those living in a municipality which contains a ZFU without actually living in the ZFU. The control groups are the neighbors of the ZRU; a placebo test has been performed to verify that they are a valid control group.

Figure 16: DD estimations of the effect of containing a ZFU1G for municipalities

	unemployment rate	share among 15-65 years old private sector wage earners
Municipalities with a ZFU 1G	0.045^{***}	-0.033^{***}
	(0.008)	(0.009)
Municipalities with a ZFU 1G × post1997	-0.021^{***}	-0.002
	(0.008)	(0.008)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas×year)	22 294	22 582
obs. (individuals×year)	491 945	759 823
R^2	0.10	0.21

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%

The controls are municipalities containing a ZRU but some of these ZRU became ZFU2G in 2004 so a control dummy of having a ZFU2G (and its effects since 2004) is added.

Figure 17: Effect of ZFU1G on the unemployment rate of non treated areas in the same municipality of a ZFU1G

	unemployment rate	share among 15-65 years olds private sector wage earners
Neighbors of a ZFU 1G	0.035^{***}	-0.022^{**}
	(0.007)	(0.010)
Neighbors of a ZFU 1G × post1997	-0.005	-0.009
	(0.007)	(0.009)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	18 721	18 966
obs. (individuals × year)	394 188	596 297
R^2	0.09	0.25

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented. The controls are neighbors of municipalities containing a ZRU but some of these ZRU became ZFU2G in 2004 so a control dummy of having a ZFU2G (and its effects since 2004) is added.

6. Conclusion

To conclude, the ZFU program has significant impact in terms of decreasing unemployment among residents, more than 7% when the starting level was about 30%. This brings the ZFU unemployment rate to the level of the control group, but unemployment remains much higher than in the rest of the country.

The local hiring condition seems to be effective, as the effect of the program is stronger when the clause is made more rigorous, and there is a positive effect of the program on long term contracts, which are the type of labor contract stipulated in the condition.

There is evidence of social composition effects within the municipalities containing the enterprise zones : the program helps to attract or retain residents with better labor market outcomes such as employment in the private sector. Controlling for this composition effect reduces the impact of the program by half. Hence the program does not appear highly efficient when it comes to helping the "original" residents of the zones.

From a public policy point of view, it might therefore be more efficient to attach benefits to people rather than to places. The French government is in fact experimenting with a new policy of "emplois francs" (roughly, "free-range jobs") in which hiring subsidies are linked to the residents of deprived zones whatever the location of their workplace. From a methodological point of view, this study highlights once again the necessity of evaluating the effect of place-based policies at a very fine geographical level, and not only for firms but also for residents.

References

Bertrand, M., Duflo, E., Mullainathan, S., 2004. How much should we trust differences-in-differences estimates? The Quarterly Journal of Economics 119 (1), 249–275.
URL http://ideas.repec.org/a/tpr/qjecon/v119y2004i1p249-275.html

Bilan des zones franches urbaines, rapport au parlement, 2002. Ministère délégué à la ville et à la rénovation urbaine.

Briant, A., Lafourcade, M., Schmutz, B., 2014. Can Tax Breaks Beat Geography? Lessons from the French Enterprise Zone Experience. American Economic Journal: Economic Policy, forthcoming.

Freedman, M., 2012. Teaching new markets old tricks: The effects of subsidized investment on low-income neighborhoods. Journal of Public Economics 96 (11), 1000–1014.

Givord, P., Rathelot, R., Sillard, P., 2013. Place-based tax exemptions and displacement effects: An evaluation of the zones franches urbaines program. Regional Science and Urban Economics 43 (1), 151–163.
URL http://ideas.repec.org/a/eee/regeco/v43y2013i1p151-163.html

Gobillon, L., Magnac, T., Selod, H., 2012. Do unemployed workers benefit from enterprise zones? the french experience. Journal of Public Economics 96 (9-10), 881–892.
URL http://ideas.repec.org/a/eee/pubeco/v96y2012i9p881-892.html

Gobillon, L., Selod, H., Zenou, Y., 2007. The mechanisms of spatial mismatch. Urban Studies 44 (12), 2401–2427.
URL http://usj.sagepub.com/content/44/12/2401.abstract

Gottlieb, J. D., Glaeser, E. L., 2008. The economics of place-making policies. Brookings papers on economic activity.
URL http://ideas.repec.org/a/bin/bpeajo/v39y2008i2008-01p155-253.html

Ham, J. C., Swenson, C., Imrohoroglu, A., Song, H., 2011. Government programs can improve local labor markets: Evidence from state enterprise zones, federal empowerment zones and federal enterprise community. Journal of Public Economics 95 (7-8), 779–797.
URL http://ideas.repec.org/a/eee/pubeco/v95y2011i7-8p779-797.html

Information report on enterprise zones, 2013. Rapport d'information sur les zones franches urbaines, Assemblée nationale, rapport d'information 1023.
URL http://www.assemblee-nationale.fr/14/rap-info/i1023.asp

Kline, P., Moretti, E., 2014. People, Places, and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs. Annual Review of Economics 6 (1), 629–662.
URL http://ideas.repec.org/a/anr/reveco/v6y2014p629-662.html

Lynch, D., Zax, J. S., 2011. Incidence and substitution in enterprise zone programs: The case of colorado. Public Finance Review 39 (2), 226–255.
URL http://ideas.repec.org/a/sae/pubfin/v39y2011i2p226-255.html

Mayer, T., Mayneris, F., Py, L., 2013. The impact of Urban Enterprise Zones on establishment location decisions: Evidence from French ZFUs. Working papers 458, Banque de France.
URL http://ideas.repec.org/p/bfr/banfra/458.html

Neumark, D., Simpson, H., 2014. Place-based policies. Working Paper 20049, National Bureau of Economic Research.
URL http://www.nber.org/papers/w20049

ONZUS report, 2011. Rapport ONZUS, Observatoire national des zones urbaines sensibles.
URL http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics/114000646/0000.pdf

Rathelot, R., Sillard, P., 2008. The Importance of Local Corporate Taxes in Business Location Decisions: Evidence From French Micro Data. Economic Journal 118 (527), 499–514.
URL http://ideas.repec.org/a/ecj/econjl/v118y2008i527p499-514.html

Tocqueux, J. L., Moreau, J., 2002. Les zones urbaines sensibles. forte progression du chômage entre 1990 et 1999. INSEE Première (835).

Trevien, C., Givord, P., Quantin, S., 2012. A long-term evaluation of the first generation of the french urban enterprise zones. Ersa conference papers, European Regional Science Association.
URL http://ideas.repec.org/p/wiw/wiwrsa/ersa12p776.html

Wooldridge, J., 2009. Introductory econometrics: a modern approach. South Western, Cengage Learning.

AppendixA. Comparison of ZFU and ZRU

Figure A.18: ZFU and ZRU exemptions in 1997

	ZRU	ZFU
Payroll tax	1 year exoneration - within a limit of 50 employees and 1.5 minimum wage - for long term contracts	5 years of exoneration - within a limit of 50 employees and 1.5 minimum wage - local hiring clause from the 3rd employee - for long term contracts - firms of less than 50 employees at their date of creation - some activities are excluded
Individual social charges (health system) of artisans and tradespeople	no	5 years of exoneration - within a limit of 1.5 minimum wage
Local business tax	5 years of exoneration - est. of less than 150 employees - within a limit determined yearly (990 kF or roughly 151 kEuros in 2000 , half for est. already existing) - whatever the activity	5 years of exoneration - firms of less than 50 employees at their date of creation - within a limit determined yearly (2835 kF or roughly 432 kEuros in 2000) - some activities are excluded
Profit tax	5 years of exoneration - restricted to new firms - degressive : 100% for year 1 and 2, 75 % for year 3, 50 % for year 4, 25 % for year 5 - within a limit since 2000 - no employees number restriction	5 years of exoneration - for new firms and firms existing the 01/01/1997 - within a limit of 400 000 F or roughly 61 000 Euros for the yearly profit - no employees number restriction
Tax on properties	no	5 years of exoneration for business properties
Specific Paris region tax on creation of offices	no	exoneration
Transfer rights for acquisitions of businesses	exonerations up to 700 000 F or roughly 107 000 Euros	exonerations up to 700 000 F or roughly 107 000 Euros

AppendixB. Parameters of the matching equation

Figure B.19: Probability of a ZRU of being a ZFU1G

Intercept	−0.220
	(1.634)
unemployment rate	−6.970***
	(1.775)
share of 15-25 year olds	6.765***
	(2.087)
size of population	0.000***
	(0.000)
share of non Europeans	−4.697***
	(1.526)
education(ref: no diploma)	
- primary school	−0.008
	(0.037)
- junior high school	0.003
	(0.062)
- low vocational	−0.071*
	(0.040)
- high vocational	−0.175
	(0.109)
- high school	−0.060
	(0.052)
- some college	0.002
	(0.119)
- university	−0.080
	(0.112)
Observations	305
Percent Concordant	77.2

Source : French Census 1990
Logistic model, *** significant at 1%. ** significant at 5%. * significant at 10%

The 1997 ZFU were chosen among the ZRU, partly according to an index computed with information from the 1990 Census (the unemployment rate, the proportion of residents under 25, the proportion of residents without a diploma) and the mean earnings of the city (income tax data). Using a logistic estimation (see figures B.19), I compute a score with census information and match the ZFU with the closest ZRU according to this score. I use the unemployment rate in 1990, the share of 15-25 year olds as in the index. The mean earnings information is not available. I use the more detailed information on the diploma distribution available in the 1990 Census. The diploma classification is from the lowest to the highest : no diploma, primary school, junior high school ("brevet des collèges"), low vocational ("Cap-Bep"), high vocational ("baccalauréat professionnel"), high school ("baccalauréat général"), some college (1 or 2 year of post secondary studies), university (at least 3 years of post secondary studies). The share of no diploma is used as the reference category and excluded of the regression. I add also the size of the zone in terms of population as the ZFU were supposed to have at least 10 000 residents. I also add the share of non-Europeans as these deprived neighboorhoods have a concentration of low skilled immigrants. I then located in the Labor Force surveys the ZUS belonging to the municipalities of these matched ZRU and used them as a potential control group. This small approximation is due to the fact that after 2002, I have geographical information only on ZFU, ZUS and municipalities in the data and not directly on ZRU.

AppendixC. Results for new residents coming from outside the municipality

Figure C.20: Effect of ZFU1G on labor market outcomes of new residents coming from outside the municipality

	unemployment rate	private wage earners among 15 65 years olds
ZFU1G	−0.036	0.127*
	(0.065)	(0.074)
ZFU1G × post97	−0.028	−0.004
	(0.081)	(0.078)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	670	835
obs. (individuals × year)	1 396	2 334
R^2	0.37	0.43

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.

Figure C.21: Effect of ZFU1G on on the sociodemographic characteristics of new residents coming from outside the municipality

	age (in years) in whole population	share of at least high school graduates among 15-65 years olds
ZFU1G	−1.725	−0.113
	(2.152)	(0.072)
ZFU1G × post97	0.299	0.042
	(2.268)	(0.076)
year fixed effects	yes	yes
UU fixed effects	yes	yes
obs. (sampling areas × year)	852	784
obs. (individuals × year)	2 399	1 831
R^2	0.29	0.33

Source : French Labor Force Survey 1993-2011

*** significant at 1%. ** significant at 5%. * significant at 10%. Estimations with sampling weights. As the individual data are aggregated at the sampling area level for the estimations, both the number of individuals and sampling areas are presented.