Direction des Études et Synthèses Économiques

G 2015 / 13

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Document de travail

Institut National de la Statistique et des Études Économiques

INSTITUT NATIONAL DE LA STATISTIQUE ET DES ÉTUDES ÉCONOMIQUES

Série des documents de travail
de la Direction des Études et Synthèses Économiques

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SEPTEMBRE 2015

I am grateful to Quoc-Anh DO, Miren LAFOURCADE, Claire LEROY, Thierry MAGNAC, Michael ORAND, Corentin TREVIEN, Benjamin VIGNOLLES and the participants of ERSA Congress, Liepp Seminar, Narsc Conference, Royal Economic Society conference and RUES Workshop for helpful comments. I thank Gabrielle FACK, Cécile GAUBERT, Laurent GOBILLON, Joan MONRAS and Maxime TÔ for their suggestions.

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Abstract

A new class of policies explicitly targets transfer toward particular zones rather than groups of individuals, the so-called place-based policies. Among them, the Enterprise Zones target development incentives to economically distressed areas. It is of primary interest to assess the effect of this type of programs on commercial real estate prices because capitalization of local tax cuts into property values potentially hinders the ability of Enterprise Zones to stimulate economic development and local employment. I develop a simple model where local subsidies on labor affect positively business real-estate prices at the equilibrium. The inflationary effect depends on the wage credit rate, on the output elasticity of real-estate in the production and on the real-estate supply elasticity. I then assess the impact of French local Enterprise Zones- the "Zones Franches Urbaines" (ZFUs)- on commercial property values and test my theoretical predictions. To cope with the endogeneity problem due to the fact that zones designated by the policy are different from the non-targeted zones, I implement various identification strategies using spatial and time differencing. My empirical analysis is based on a unique dataset which provides the geocoded transactions of commercial real estate gathered by the French Notaries Chamber over the period 2000-2012 for all the French regions. The empirical results imply that ZFU status has a positive effect on commercial property values. I find heterogeneous effects according to the type of industry and the level of real-estate supply elasticity in the zone.

Keywords: Enterprise Zone, Real-estate prices, Place-based policies, Propensity score matching

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Zones Franches Urbaines : quel impact sur le prix de l'immobilier d'entreprise ?

Résumé

Certaines politiques publiques ciblent désormais des territoires plutôt que des groupes d'individus. Parmi elles, le dispositif des Zones Franches Urbaines désigne certains quartiers comme bénéficiaires d'un ensemble de mesures d'encouragement économique. Il est important d'évaluer l'impact de ce type de programmes sur les prix de l'immobilier d'entreprise car la transmission des aides au marché immobilier pourrait potentiellement limiter la capacité des Zones Franches à stimuler l'emploi et l'activité. Je développe un modèle simple dans lequel les subventions visant à réduire le coût du travail ont un effet inflationniste sur les prix immobiliers à l'équilibre. Cet effet dépend de l'ampleur des subventions, de l'intensité du facteur travail dans la production et de l'élasticité de l'offre immobilière. J'évalue ensuite empiriquement l'effet des Zones Franches Urbaines sur les prix de l'immobilier d'entreprise dans ces zones et teste les prédictions du modèle. J'utilise diverses méthodes d'identification exploitant des différenciations spatiales et temporelles pour tenir compte du fait que les zones bénéficiant de ce type de programme sont en général différentes du reste du territoire. Mon analyse empirique s'appuie sur la base des notaires qui recense les transactions géolocalisées sur la période 2000-2012 pour toutes les régions françaises. Les résultats empiriques suggèrent que les Zones Franches Urbaines ont eu un effet inflationniste sur la valeur des biens immobiliers. Je trouve des effets hétérogènes selon le type de secteur considéré et le niveau d'élasticité de l'offre immobilière dans la zone.

Mots-clés : Zones Franches, Prix de l'immobilier, Appariement sur le score de propension

Classification JEL : H25, H32, R38, R58

1 Introduction

During the 80s, the developed countries experienced an increase of inequalities, which have often resulted in geographical divergences. These disparities between territories of one country give rise to different risks, from the spatial segregation to the reconsideration of national solidarity. In the 90s, politics were more and more aware of these local problems and governments of several countries decided to implement place-based policies as a remedy for those local difficulties, aiming to make these areas more attractive to businesses, and following, to improve both local employment and population welfare.

Three types of economic arguments were invoked to support the replacement of population-based policies by place-based policies: the agglomeration economies, the spatial mismatch and the equity principle. The agglomeration economies argument includes different mechanisms that can be used to justify the existence of increasing returns in higher density zones. Productivity gains of agglomeration can come for instance from lower transport costs (sharing fixed cost of rail infrastructure), from a thick labor market (better worker-employer matches) or even from knowledge spillovers. Duranton and Puga (2004) establish a typology of these effects by distinguishing the mechanism at stake: "sharing, matching or learning". All these sources of urban increasing returns led to promote concentration of activities and were invoked to justify the creation of Enterprise Zones.

The market imperfection named spatial mismatch is the second theoretical support of place-based policies. It refers to the spatial disconnection between jobs and unemployed. Thus it could become efficient to introduce some incentives to influence firms location choice if racial or regional segregation produce an unjustified lack of mobility (of workers or firms). Enterprise Zones, by inciting firms to set up in segregated areas could lead to better matches between employers and employees. Gobillon et al. (2007) review the different models involving spatial mismatch and give some predictions and empirical results of this phenomenon.

The third argument does not directly target economic efficiency. For the safe of equity it could be justified to foster some previously neglected areas. Place-based policies can indeed be rationalized by some previous inequalities concerning, for instance, government spendings. Moretti (2011) highlights that most of the Enterprise Zones aim to redistribute income from areas with high level of economic activity to areas with low level of economic activity. Yet, according to the author, this goal is far from being achieved in most of the cases.

These three previous arguments are rather constructed from an economic point of view. For sure, some political or social reasons have certainly also led to implement place-based policies. Deprived areas, high local unemployment rates, economic wastelands threaten national cohesion and could give rise to violences, as it was invoked in the case of French riots in 2005.

Like many other countries (the United States and their Empowerment Zones at the federal level, the United Kingdom and the Enterprise Zones, Italy with its Law 488,...), France implemented in 1997 a place-based policy named "Zones Franches Urbaines" (ZFUs), in order to help some particularly distressed areas. According to Briant et al. (2012), the French Enterprise Zone program is the most costly. The average annual public subsidy by employee in ZFU in 2006 was around 1800 €.

Many evaluations of Enterprise Zone programs have already been done. Yet, the results in France as in the other countries are ambiguous. For instance, in the US, the major part of the empirical evaluations finds that Enterprise Zones have little or no impact on economic activity and employment, as shown by Bondonio and Greenbaum (2007) or Kolko and Neumark (2010).

Very few papers investigate the reasons of these mitigated results. One exception is Briant et al. (2012) for whom the geographical accessibility is a major factor which explains the success or the failure of the French place-based policy.

Our goal is not to directly assess the success of these programs through labor or business output variables but to test one theoretical prediction of the implementation of such policies. Identifying the mechanisms through which policy works permits to analyze who benefits *in fine* from the subsidies and in what proportions. We will focus on the transmission of subsidies to business real-estate and following, on the share of public grants captured by landlords. In this paper, we will test the presence of an inflationary effect of the place-based policies on real estate market.

Economic theory predicts indeed that subsidies should be finally capitalized into real estate market. The intuition is the following. In a standard spatial equilibrium model, mobile workers and firms will choose to change location until land prices rise enough to offset local subsidies. Mobility of workers affects residential property market and mobility of firms impacts business real-estate market. Depending on the intensity of each mobility, the effect on prices will be more or less important on housing and on business property market.

Kline and Moretti (2014) develop a theoretical model of place-based policy and conduct some welfare analyses. Workers move from one city to another until equating the gain in wage with the loss in property price. Because firms are considered fixed, there is no effect on business property market. Their model predicts an inflationary effect on housing. Since the Enterprise Zones target incentives to firms and because the influx of new workers following the policy implementation seems to have been limited (consistent with a spatial mismatch mostly due to workers immobility, see Busso et al., 2013 for instance), we instead develop a model with firm mobility.

Some empirical evaluations try to test for the presence of inflationary effect on residential property market. Busso et al. (2013) in the US use data on rent levels and on housing prices. They conclude that Enterprise Zones have not been accompanied by changes in the housing market prices. Moreover they observe no population effect (no change in location choices) of the policy. Grégoir and Maury (2012) in France find negative effects on housing prices in ZFUs of Ile de France. They interpret their result as a stigmatizing effect of Enterprise Zones.

Furthermore, the literature on the potential effects of place-based policies on commercial real estate is sparse, theoretically and empirically. To our knowledge, there is no theoretical paper modeling the impact of local subsidies on business real-estate prices. Empirically, Bond et al. (2013) find a positive effect of property tax reduction in Enterprise Zones on rents charged by landlords. But their results suffer from two different biases: on the one hand, comparing only prices between properties without taking into account the characteristics of the property (surface, quality, ...) potentially biases the results, on the other hand the estimator is also biased because the reduced level of property tax will capture other Enterprise Zones characteristics (other tax cuts for instance).

Landers (2006) finds a positive effect of Enterprise Zones on commercial and industrial properties in Ohio, from 1984 to 1993. But the econometric method does not deal with the endogeneity problem of Enterprise Zone designation. We instead develop an econometric strategy based on difference-in-difference estimation within hedonic regressions. Therefore we take into account the endogeneity of the subsidized zones designation and we control for the characteristics of the properties.

The rest of the paper is organized as follows. Section 2 describes the French EZ program. Section 3 introduces the model. In Section 4, we describe our empirical analysis. Section 5 presents and discusses the results and Section 6 concludes.

2 The ZFU program

2.1 Policy implementation

In 1997 begins the French *Urban Revival Pact*, a large place-based policy. 416 zones are designated as *"Zones de Redynamisation Urbaine"* (ZRUs), where the program is implemented. Among these zones, some are chosen to benefit from higher tax exemption and public subsidies: the *"Zones Franches Urbaines"* (ZFUs).

ZFUs have been designated in three waves: 44 zones in 1997 (1^{st} generation), 41 zones in 2004 (2^{nd} generation) and 15 zones in 2010 (3^{rd} generation).

The committee in charge of choosing which ZRUs would be granted ZFU status had to follow precise guidelines. The selection was supposed to stem from their respective ranking to a synthetic index aggregating the unemployment rate, the proportion of residents with no qualification, the proportion of residents under 25 and the tax potential of the corresponding municipality. Moreover, a ZFU should count more than 10,000 residents.

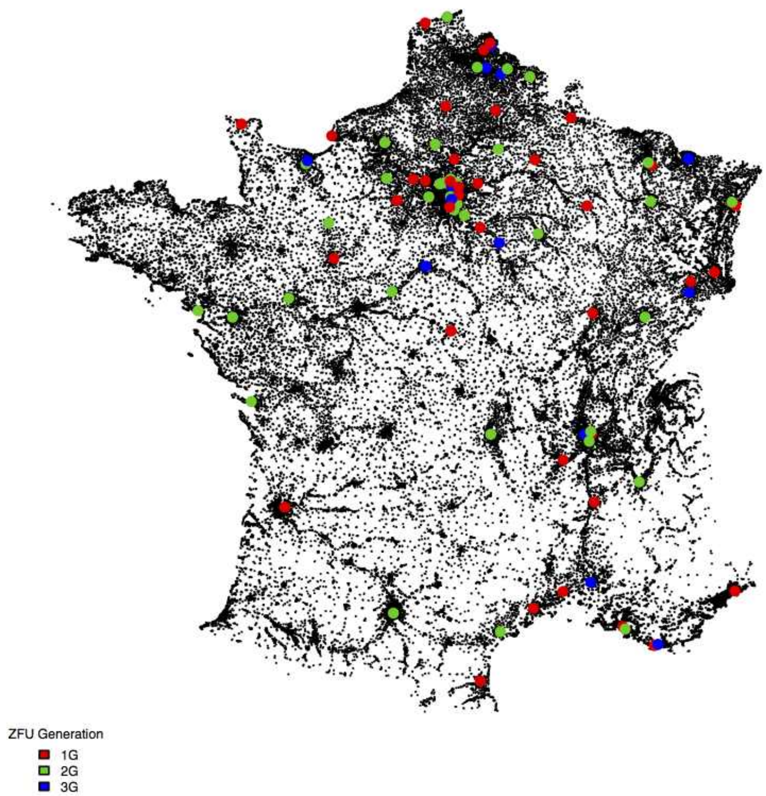
It has been shown that the most distressed neighborhoods, which might have been difficult to compare to any other areas, were in principle turned into ZFUs in the first round of the program. Statistical evidence given by Givord et al. (2013) shows that first-round ZFUs are indeed more distressed than second-round ones.

A second wave of 41 ZFUs has been designated in 2004, out of the stock of ZRUs that had not turned ZFU in 1997. Whereas this second selection was officially supposed to be based on the same criteria, Givord et al. (2013) show that it was mostly driven by local political bargaining. For Briant et al. (2012), "the selection of the ZFU2Gs [of the second generation] out of remaining ZRUs was close to random". We will confirm this statement with our data in Section 4 and will extend it to the third generation in order to use the non-selected ZRUs as a control group.

Figure 2.1 displays the geographical distribution of the three generations of ZFUs in metropolitan area. The overlaying of the ZFUs locations with the map of built-up land in France shows that ZFUs have been always implemented in urban areas and are more likely located near major agglomerations. An other program was implemented in 1995 for rural areas, which designated ZRRs (*Zones de Redynamisation Rurales*).

Figure 2.2 shows an example of geographical contours of a ZFU. The ZFU we map is called *Ville Nouvelle* in the municipality of Rillieux-la-Pape, in the agglomeration of Lyon. The boundaries of *Ville Nouvelle*, as the boundaries of the other ZFUs, do not correspond to the limits of the municipality, nor to the limits of some smaller administrative districts. The layout of the targeted zones was decided according to the very local characteristics of the area and the boundaries were drawn at the level of the road to prevent potential deadweight benefits.

Figure 2.1: Distribution of ZFUs created in 1997 (1G), 2004 (2G) and 2006 (3G) over French metropolitan area (dark zones correspond to built-up land).

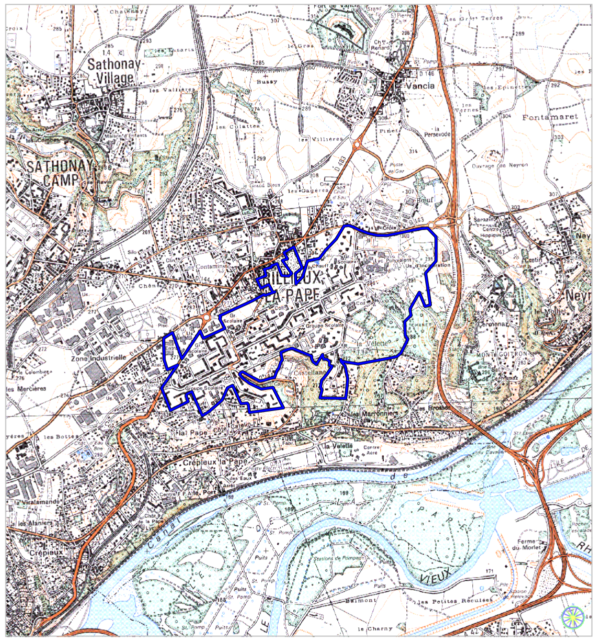


Source: *INSEE and Corine Land Cover data*

The French ZFUs consist in substantial tax reliefs to existing and new businesses. More precisely, ZFUs-located companies with fewer than 50 employees benefit from five-year exemptions from local business taxes, corporate income tax and property taxes. They are also exempted from employers' social security contributions for a period of five years on the fraction of salaries lower than 1.4 times the minimum wage. For instance, for a wage of 1.4 times the minimum wage, it reduces the labour cost of around 20% (Source: URSAFF, Union de Recouvrement des cotisations de Sécurité Sociale et d'Allocations Familiales, which is the main social security office). The total cost of the place-based subsidy for the year 2008 was 594 million €, sharing between an annual cost of 320 million € for labor subsidies, an annual cost of 185 million € for exemptions from national business taxes and 89 million € for exemptions of local taxes (Source: 2010 French Budget Bill). The total cost was 547 million € in 2007.

Despite these huge amounts, results are mixed. Givord et al. (2013) find that tax exemptions provided by the ZFU program had a positive impact on the number of businesses located in the treated areas. But the increase is mainly due to a surge in the number of businesses relocating. Gobillon et al. (2012) find a significant and positive effect on employment but its magnitude is rather small (increase of 3% of the probability to find a job for an unemployed person) and it is a short run effect (3 years).

Figure 2.2: Example of ZFU boundaries.



Source: *Ministry of Urban Affairs*

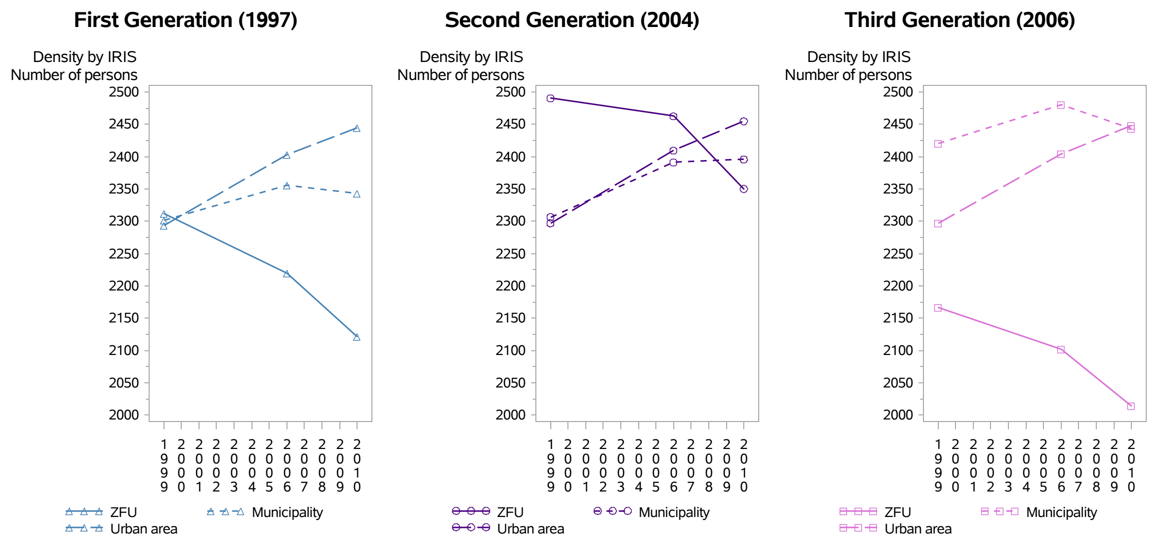
2.2 Effect on real-estate

Theoretically, one part of this public transfers will be capitalized into real-estate market. Depending on the level of capitalization, this inflationary effect can severely hinder the ability of Enterprise Zones to stimulate economic development and local employment. We argue that the impact of Enterprise Zones in France is rather on business real-estate than on housing. We give some evidence below.

On the one hand, we find that population in ZFUs has experienced a downward trend during the past ten years. Figure 2.3 shows the evolution of the population density in the ZFUs, in the corresponding municipalities and in the corresponding urban areas. While population density decreases over the period (1999-2010) in ZFUs (plain lines), it slightly increases in the municipalities (dotted lines) and experiences strong growth in the corresponding urban areas (dashed lines). The first generation (left) is treated in 1997, before the period of observation, the second (middle) is treated in 2004 and the third (right) in 2006. The three generations experience similar trends over the period, a moderate decrease between 1999 and 2006 and a sharper decline beween 2006 and 2010, although they have not been treated since the same date. It suggests that Enterprise Zones have been implemented in areas suffering downward trend in the population growth rate but the policy implementation has had no particular effect on the growth rate of population.

On the other hand, we find significant effects of the implementation of a ZFU on business creations. We replicate the methodology of Givord et al. (2012) and figure 2.4 shows the evolution of the difference between the number of firms in ZFUs and the number of firms in ZRUs. Data come from the French business repertory, SIRENE, which collects exhaustive business creations with precise location. We compare ZFUs with ZRUs because of certain similarities between these two types of zones (see section

Figure 2.3: Evolution of the population density per IRIS in ZFUs, in the corresponding municipalities and in the corresponding urban areas by generation.



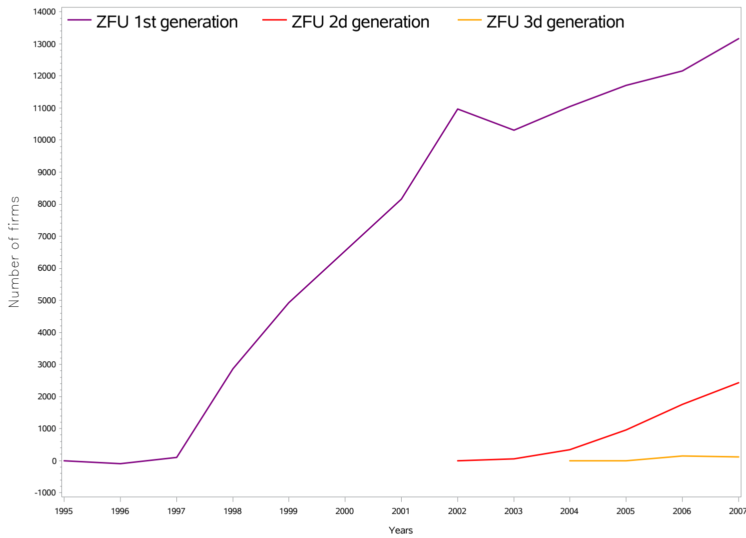
Notes: IRIS is an acronym of "aggregated units for statistical information", and it refers to a 2000 individuals neighborhood and is the smallest census tract unit. Because the boundaries of the ZFUs do not correspond to administrative data, we consider that an IRIS is in a ZFU if the centroid of the IRIS is within the ZFU.
Lecture: In 2006, the average density in the ZFUs of the first generation is around 2225 people per IRIS, the average density in the corresponding municipalities is around 2350 and the average density in the corresponding urban areas is around 2400.

Source: *1999, 2006 and 2010 French Population Census (Insee)*

4.3 for further details). Each generation corresponds to a positive shock on business creations in ZFUs. In the zones of the first generation (44 zones), in 2001, the implementation of ZFU would have caused an increase in the number of enterprises between 9700 and 12,200 units. Givord et al. (2012) show that the positive shock caused by ZFU on the second generation (41 zones) would have been weaker and even weaker for the third generation but still significantly positive.

These two figures suggest that place-based policy implementation has impacted differently households and firms behaviors. ZFUs are business-oriented even if the final goal is the welfare of local population. It makes logical sense that the first effects would be on business activity and not on population. As a result, we argue that EZ first impact business real-estate market. Housing market could also be affected in case of significant worker mobility and because housing is a substitute of business property, see Bondonio and Greenbaum (2007). A third channel is the common competition for land but it only affects new construction which is a small part of the housing market, it is therefore a second-order effect.

Figure 2.4: Effect of the policy on business location: difference between the number of firms in ZFUs and the number of firms in ZRUs by generation.



Notes: We replicate the strategy of Givord et al. (2012). We compare the number of new firm creations in ZFUs and the number of new firm creations in ZRUs
Lecture: At the end of 2006, the implementation of the EZ policy would have caused the location of around 10,000 new firms in the ZFUs of the first generation and around 2000 firms in the ZFUs of the second generation.

Source: *SIRENE (Insee)*

3 Model

We construct a simple model of firm location choice that is useful for understanding the effects of place-based policies. This model illustrates how the presence of local subsidies on labor will affect business real-estate prices at the equilibrium. Our model, like the one of Kline and Moretti (2014), focuses on the effect of place-based wage subsidy in a context of inelastic supply of real-estate but unlike them we focus on firm mobility and our real-estate market of interest is the business real-estate market. We assume conversely that workers can commute to balance the labor market.

3.1 A model of firm creation

Consider a city where firms are free to enter the market. The number of firms in the city in period t is n_t. Each firm produces a single good Y using a quantity of labor L and a fixed amount of real-estate $\overline{R}$ (McDonald and McMillen, 2010).

$$Y_t = L_t^{\alpha}\overline{R}^{1-\alpha} \tag{1}$$

We denote by w_t the city-specific wage and by r_t the price of real estate.

Real-estate is supplied competitively at a marginal cost, which, because land is fixed, is increasing in the number of units produced. We assume that this gives rise to the following constant elasticity inverse supply function:

$$r_t = z n_t^k \tag{2}$$

Because firms need a fixed amount of real-estate, the number of real-estate units is equal to the number of firms. The parameter k governs the elasticity of real-estate supply. As Kline and Moretti (2014), we assume that this parameter is exogenously determined by geography and local land regulation. In areas where geography and regulations make it easy to build, k is small. In the extreme case in which there is no constraint to construct new buildings, the supply curve is horizontal, and k is zero.

At the first period, there is no subsidy, firms equate the marginal revenue product of labor to the corresponding price. There is only one First Order Condition (FOC) because real-estate is considered fixed.

$$w_1 = \alpha \frac{Y_1}{L_1} \tag{3}$$

Because of free entry, we have a zero profit condition:

$$Y_1 = r_1 \overline{R} + w_1 L_1 \tag{4}$$

Thus

$$r_1 = (1-\alpha) \frac{Y_1}{\overline{R}} \tag{5}$$

Assume labor supply is given by:

$$n_1 L_1 = \beta w_1^{\eta} \tag{6}$$

According to Blundell et al. (2011), the aggregate total hours elasticity η lies in the range 0.3 to 0.44 for France.

By combining the previous equations[1], we find the equilibrium number of firms in period 1.

$$n_1^{k - \frac{\alpha}{\alpha\eta - \eta - 1}} = \frac{1-\alpha}{z} \left(\frac{\overline{R}}{\alpha\beta} \right)^{\frac{\alpha}{\alpha\eta - \eta - 1}} \tag{7}$$

3.2 Real-estate prices in the presence of place-based subsidy on labor

We consider now, in a second period, that the government provides an ad valorem wage credit τ to firms in the zone, corresponding to the most common place-based policy. This subsidy is financed by lump sum taxes on all workers (not only the workers of the subsidized zone).

The new FOC is:

$$(1-\tau) w_2 = \alpha \frac{Y_2}{L_2} \tag{8}$$

The zero profit condition gives us:

$$Y_2 = r_2 \overline{R} + w_2 (1-\tau) L_2$$

[1] Replacing w by (6) in (3) and r by (2) in (5), we obtain a system of three equations (the new (3) and (5) and the old (1)), for three unknowns Y, L and n. Combining (5) and (1) gives the relationship between n and L, and we can transform (3) in an equation in n.

Thus

$$r_2 = (1-\alpha)\frac{Y_2}{\overline{R}} \tag{9}$$

And with the new labor supply equation,

$$n_2 L_2 = \beta w_2^{\eta} \tag{10}$$

we obtain the second period equilibrium number of firms:

$$n_2^{k-\frac{\alpha}{\alpha\eta-\eta-1}} = \frac{1-\alpha}{z}\left(\frac{(1-\tau)\overline{R}}{\alpha\beta}\right)^{\frac{\alpha}{\alpha\eta-\eta-1}} \tag{11}$$

In fine, we can compute the growth rate of the number of firms between the two periods,

$$g_n = \Delta \log n$$

which verifies:

$$1+g_n = \left(\frac{1}{1-\tau}\right)^{\frac{\alpha}{\alpha+k(1+\eta-\alpha\eta)}} \tag{12}$$

This growth rate of the number of firms depends on four parameters: τ, k, α and η. It increases with τ, the wage credit rate because a higher subsidy permits new firms to enter the market. On the contrary, the additional number of firms in the second period decreases with the real estate supply elasticity, k. When k is large, real-estate supply is rather inelastic, so the price increase due to additional buildings is huge, firm creation is therefore limited. The number of firms increases with the output elasticity of labor, α, which represents the importance of the labor factor in the production, and consequently the relative importance of the real-estate factor in the production. Because the place-based policy results *in fine* in a wage subsidy and in an increase of real-estate prices, the relative gain of the wage subsidy is higher for a firm whose production is less real-estate intensive (more labor intensive) than for a firm whose production is more real-estate intensive. Finally, the number of firms decreases with the labor supply elasticity for the same reason. The place-based policy is a wage subsidy, consequently when the labor supply elasticity decreases, workers react less and less to the labor incentives. We have a subsequent real-estate price change:

$$g_r = \Delta \log r$$

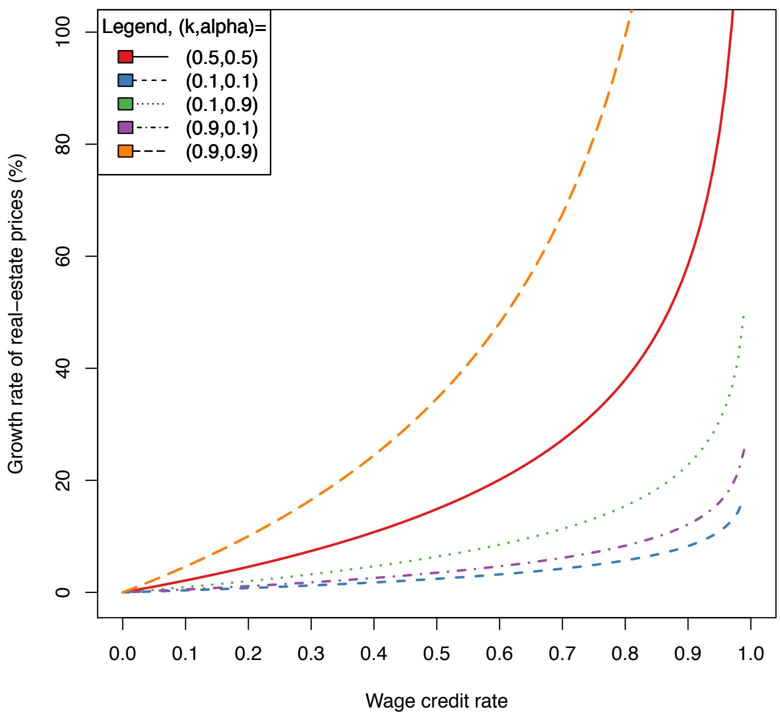
which verifies:

$$1+g_r = \left(\frac{1}{1-\tau}\right)^{\frac{\alpha k}{\alpha+k(1+\eta-\alpha\eta)}} \tag{13}$$

Figure 3.1 represents the growth rate of real-estate prices between the first and the second period in function of the wage credit rate for different values of real-estate supply elasticity and output elasticity of labor. We represent a standard case $(k,\alpha) = (0.5, 0.5)$ and four polar cases $(k,\alpha) = (0.1, 0.9), (0.1, 0.1), (0.9, 0.1), (0.9, 0.9)$. We consider the labor supply elasticity fixed, equal to 0.3.

Between the first and the second period, new firms are created until the increase of real estate price compensates the gain in labor cost. As a result, the implementation of the wage credit is followed by firm creation and real-estate price increase. The growth rate of real-estate prices in (13) increases

Figure 3.1: Effect of the wage credit rate on business real estate prices.



Lecture: a wage credit rate of 10% will cause a 2% increase of business property prices when real-estate supply elasticity and output elasticity of labor are equal to 0.5.

Source: *Model simulations*

naturally with the wage credit rate τ, because more firms are present on the market.

This growth rate increases also with the output elasticity of labor, α. If the real-estate factor has limited importance in the production, the effect of the increase of real-estate prices has a small impact on the production costs, and therefore, the supported surge of prices experienced by firms can be higher.

For two different values of real-estate supply elasticity, we do not have the same real-estate price increase, all other things being equal. More the real-estate market is inelastic, more its price increases. This is due to the lower number of firms at the equilibrium which affects the labor supply and the equilibrium wage.

We calibrate now our model with standard values of the parameters used in the literature to assess the expected effect of the French EZ. We fix the labor supply elasticity, η to 0.3, the output elasticity of labor, α, to 3/4 and the wage credit rate to 20%. Typical values for the inverse supply elasticity, k range within 1 to 3 for the US (Saiz, 2010). For this range of values, the subsequent inflationary effect is expected to be between 10% and 13%. But this effect is very sensitive to the wage credit rate, and for a credit rate of 30%, the corresponding inflationary effect ranges within 16% and 22%. Because the ZFU program is not only a wage credit but includes also some exemptions from national business taxes and exemptions of local taxes (property tax for instance), it is likely that the effect will be higher than the expected effect of the labor wage credit only.

Our simple model of firm creation predicts that place-based labor subsidies are partly capitalized into business real-estate prices. The subsequent price increase depends mainly on three parameters: the wage credit rate, the output elasticity of real-estate in the production sector, and the real-estate supply elasticity. For our empirical analysis, we will first estimate a unique effect of the policy, considering the implementation of one type of policy: the place-based policy named ZFUs (a particular τ, a unique output elasticity of labor for every firm and a common real-estate supply elasticity in all our zones). We will then allow for some heterogeneity in the last two parameters. We will first consider that the output elasticity of real-estate can change for different types of activities corresponding to different types of business properties (shops, offices, . . .). We will then take into account the heterogeneity of the real-estate supply in each zone by using land-use in the zone and building permits data.

4 Empirical analysis

4.1 Data description

The data we use come from several sources. The *Perval* database from Notaires de France and the *Bien* database from the Chambre des Notaires de Paris[2] display sales of business properties. The registration of each transaction in those databases is legally required, but in practice only between 80% and 90% of the transactions are reported in the *Ile-de-France* region and around 60% in the rest of France. Data are available for each even numbered year over the period 2000-2012 and include information on price, surface, extension, type of ownership, use, date of construction and precise location (geographical coordinates) for each transaction.

The geographical boundaries of different zones of the French place-based policy (ZRU and ZFU) are provided by ONZUS (Observatoire national des zones urbaines sensibles, the French observatory of EZ). Combining these two types of data, we are able to determine which transactions took place in a ZFU or in a ZRU.

Socio-demographic and economic data that precisely describe the situation in the zones were used to designate which ZRU will turn ZFU. They were computed at the zone level before the implementation of the policy and they have been updated yearly until now. They include local unemployment level, demographic composition, fiscal potential of the corresponding municipalities and other socioeconomic variables. These data are made available by Insee (Institut National de la Statistique et des Etudes Economiques, the French Statistical Institute).

Our data on building permits come from the unique administrative database Sitadel (Système d'Information et de Traitement de Données Elémentaires sur les Logements et les locaux)[3] which display most of the information requested in the building permit form for each authorized construction

[2]Our access to these databases has been made possible thanks to the *Service de l'Observation et des Statistiques* (SOeS) of the *Ministère du Développement Durable*

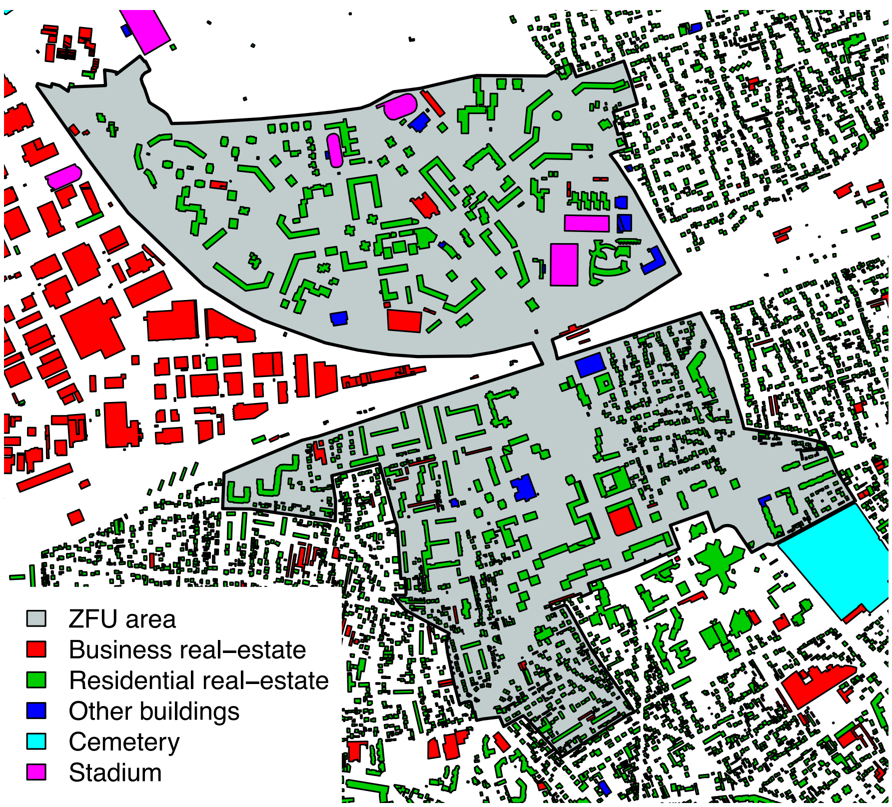
[3]Our access to these databases has been made possible thanks to the *Service de l'Observation et des Statistiques* (SOeS) of the *Ministère du Développement Durable*

project. In particular, it includes the type of building (residential or non-residential), the surface area, the precise location of the building and the category of the future owner. We use informations on building permits located in ZFU (or future ZFU) between 2000 and 2014.

Our data on the use of land in ZFUs are provided by the National Geographic Institute (Institut Géographique National, hereafter IGN). The precise composition by type (residential, business or remarkable real-estate like churches or rail stations for instance) is available for the year 2014 in an IGN's digital topographic database.

We intersect the land-use map with the boundaries of our zones to compute the real-estate composition of ZFUs in terms of part of the surface occupied by the different types of buildings.

Figure 4.1: Land-use around a ZFU



Source: *National Geographic Institute (IGN) for the land-use and Ministry of Urban Affairs for the ZFU boundaries.*

Figure 4.1 maps the boundary of the ZFU Val d'Argent in the Paris Region (*département* of *Val d'Oise*) and the buildings by type in the area in 2014.

4.2 Descriptive Statistics

Table 1 reports some summary statistics about the economic situation in three types of zones before the implementation of the policy (data come from the 1999 Census or 2003 French Budget Bill): the ZFUs of the second generation, the ZFUs of the third generation and the ZRUs that have never turned ZFU. We do not include the first generation because real-estate data are available only from the year 2000 onwards.

Table 1: Economic situation in the different types of zones before the policy

	ZFU 2G 2^{nd} generation	ZFU 3G 3^{rd} generation	ZRU all
Number of zones	41	14	272
Average surface	160.83	119.32	56.23
Average density	124.76	128.51	108.74
Average population	17,741	12,564.5	5179.82
Average unemployment rate	0.26	0.29	0.3
% dropouts	0.21	0.25	0.25
% students	0.11	0.1	0.11
% less than 25	0.41	0.39	0.41
% less than 15	0.25	0.23	0.24
Fiscal potential	5273.36	4550.94	3271.62

Notes: The different areas are defined as follows: ZFU of the second generation, ZFU of the third generation and ZRU. ZRU are not turning ZFU in 2004 or 2006.

Source: *Data come from the 1999 Census and from the French Ministry of Finances.*

These zones, as expected, are more deprived than the rest of France. Unemployment rates are above 25%, while the national rate was about 10.4% in 1999 (Insee, Census). Similarly, the proportions of dropouts and young people are much higher than the national proportions. Although ZFUs are more subsidized than ZRUs, we do not find that the ZFUs of the second and the third generation are more deprived than ZRUs. The average unemployment rate is weaker, the proportion of dropouts is weaker or similar and the average fiscal potential of municipalities including ZFUs is substantially higher than the fiscal potential of municipalities including ZRU for both generations. But we find significant differences in average population, of almost $18,000$ for the second generation, and almost $13,000$ for the third, while the average population in ZRU was around 5000 in 1999 (consistent with the legal threshold of $10,000$).

Table 2 presents some statistics on business real-estate market before the implementation of the policy (between 2000 and 2003) and over the whole period (2000-2012). We again compare our three types of zones: the ZFUs of the second generation, the ZFUs of the third generation and the ZRUs. We distinguish seven types of real-estate: industrial workshops, offices, medical real-estate, retail, storage building, hotel and serviced residences. This last type corresponds mostly to medicalized residences or retirement residences. Because no transaction had been reported before the implementation of the policy, this type of real-estate will not be used to estimate the impact of ZFU on prices. However,

Table 2: Business real-estate transactions

		2000-2003		2000-2012	
		ZFU	ZRU	ZFU	ZRU
Industrial Workshop	number of transactions	11	13	32	36
	median price per sq.m.	362.98	229.25	403.99	365.34
	mean price per sq.m.	429.72	257.71	540.90	560.45
	sd price per sq.m.	311.47	120.38	457.23	632.04
Offices	number of transactions	17	13	133	73
	median price per sq.m.	448.38	449.85	1425.60	929.49
	mean price per sq.m.	586.42	572.58	1400.09	1045.42
	sd price per sq.m.	405.20	416.20	730.97	713.48
Medical real-estate	number of transactions	3	5	24	19
	median price per sq.m.	499.84	609.80	1766.46	805.56
	mean price per sq.m.	442.81	617.01	2114.75	1027.26
	sd price per sq.m.	145.74	12.95	2068.27	643.85
Retail	number of transactions	110	104	323	341
	median price per sq.m.	467.88	569.18	761.42	704.88
	mean price per sq.m.	620.96	700.80	1030.05	950.68
	sd price per sq.m.	516.11	524.58	904.80	887.13
Storage buildings	number of transactions	7	6	21	20
	median price per sq.m.	157.25	120.02	225.85	274.05
	mean price per sq.m.	171.33	206.15	457.28	470.25
	sd price per sq.m.	39.73	185.60	467.75	466.50
Hotel	number of transactions	1	1	14	9
	median price per sq.m.	82.52	173.23	1015.87	586.35
	mean price per sq.m.	82.52	173.23	1103.53	703.31
	sd price per sq.m.			752.00	480.70
Serviced residences	number of transactions	0	0	75	17
	median price per sq.m.			2295.24	2006.78
	mean price per sq.m.			2377.35	2028.83
	sd price per sq.m.			355.67	379.79
Total	number of transactions	149	142	622	515

Lecture: in the future ZFU of second and third generations, between 2000 and 2003, the median price per square meter for industrial workshop was around 363€.

Source: *Bien and Perval databases.*

the huge development of this type of real-estate (in particular in ZFU) is in line with the findings of previous studies concerning the setup of medical services in French EZ (see Observatoire national des zones urbaines sensibles, 2006).

We find that the average and median real-estate prices per square meter are rather similar in ZFUs and in ZRUs. Because we only compute price per square meter, our statistics mix changes in prices and changes in quality of real-estate and in particular, the presence of new buildings. Between 2000 and 2012, we observe for instance in ZFUs the sales of several large new medical centers which cause the large increase of the standard deviation for that category. Throughout the rest of the paper, we will use hedonic regressions in which we control for the characteristics of the properties, including amongst others a dummy for new buildings.

4.3 Econometrics

4.3.1 Difference-in-difference estimator

To assess the impact of the EZ policy, we have to cope with the usual endogeneity problem for EZ evaluations: real-estate in ZFUs is likely to be different from real-estate in the neighborhoods of the zones or in the corresponding urban areas. The econometric method called difference-in-difference consists in comparing prices of business properties in ZFUs before and after the implementation of the policy (the treatment) with the prices before and after that date in some similar non-treated zones, considering the time trends and the impact of the other variables on prices to be the same. We made the following common trend assumption: the evolution of prices in ZRUs and in ZFUs would have been the same in the absence of treatment.

The identification hypothesis consists in considering that the only change in the ZFUs after 2004 for the second generation and after 2006 for the third generation is the treatment. The common trend assumption implies that the relative prices of the different characteristics are unaffected by the treatment.

We run hedonic regression to take into account the different characteristics of the properties. Hedonic regression permits to avoid some composition bias. We include in all the regressions: the logarithm of the surface and dummies for new buildings, for the occupancy status, for the presence of an extension (a storeroom), for the year of sale, for being located in a (future) ZFU and for the treatment (transaction located in a ZFU after the implementation of the policy).

We estimate the effect of the policy on prices by running a difference-in-difference regression with zone and time fixed effects.

The estimating equation is the following:

$$\log(Y_{ijt}) = e_t + c_j + \delta T_{jt} + X_i\beta + \epsilon_{ijt} \tag{14}$$

where Y_{ijt} is the price of the business property (i) purchased (sold) in the zone j, year t, e_t is a time fixed effect, c_j is a zone fixed effect, T_{jt} is one if the zone j is treated year t, i.e. is a ZFU after the implementation of the policy, X_i are the characteristics of the good (surface, extension,...). The treatment is the implementation of the place-based policy.

4.3.2 Propensity score

As ZFUs are supposed to be particularly economically depressed, companies may naturally choose to locate less frequently in ZFUs, regardless of any tax incentives. This would induce a negative selection bias. The goal is to find similar zones than ZFUs of the second and third generations (the ones we want to evaluate) but not affected by the policy implementation. We use the ZRUs, i.e. the zones designated by the French *Urban Revival Pact* as particularly distressed but which were not chosen to become one of the 100 ZFUs. To test the robustness of our difference-in-difference estimations which use all the ZRUs, we want now to compare ZFUs only with some ZRUs selected to be the most similar to ZFUs.

As briefly mentioned in Section 2, the committee in charge of choosing which ZRUs would be granted ZFU status in 2004 and 2006 had to follow precise guidelines. They should designate as ZFUs the most distressed ZRUs of at least 10,000 residents according to an index calculated with local variables (unemployment rate, tax revenues, proportion of youth, proportion of dropouts) residents. As we were able to compute the index variables, we estimate a propensity score by running a probit model at the level of the zones to determine the probability to be treated for the zones in the control group, the ZRUs.

Table 3: Probit regression

	Dependent variable:	
	turn ZFU	
	(1)	(2)
log Fiscal Potential	0.0000	0.0003^{***}
	(0.0001)	(0.0001)
Population	0.003^{***}	
	(0.001)	
Population square	-0.0000^{**}	
	(0.0000)	
Proportion of students	-27.92	16.96^{*}
	(18.64)	(10.07)
log Density	-30.31	22.47^{**}
	(22.46)	(11.32)
Proportion of unemployed	0.0000	0.0004
	(0.003)	(0.002)
Proportion of less 25	3.18	-0.03
	(2.68)	(1.52)
Proportion of less 15	32.40^{*}	-18.51^{*}
	(19.25)	(9.52)
Proportion of no diploma	3.21	-2.79
	(4.08)	(2.59)
Constant	-19.22^{***}	-1.26
	(5.02)	(0.89)
Observations	327	327
Log Likelihood	-51.55	-118.33
Akaike Inf. Crit.	125.10	252.66

*p<0.1; **p<0.05; ***p<0.01

Notes: The dependent variable is one if the zone is a ZFU and zero if the zone is a ZRU. The variables are measured before the implementation of the policy.

The results of the estimations are presented in Table 3. Some of the variables included in the index have an insignificant effect on selection to treatment which is rather unexpected. Nevertheless, our results are in line with previous literature (see Givord et al., 2013 for instance).

ZFUs had to be implemented in the most deprived ZRUs with a population over 10,000 and this condition seems to have been fairly respected (3 zones are slightly below the threshold in 2004 and 6 in 2006). Because of this threshold, the variable population is a strong determinant of the treatment and has a large and significant estimated coefficient in the probit regression.

In the second column we exclude the total population in the zone but we still control for the density in the zone and for other sociodemographic characteristics of the zone.

The goal of the propensity score is indeed to select similar zones in terms of sociodemographic and economic characteristics, not in terms of size. The largest zones, not selected to be ZFU in 2004 ou 2006 are likely to be different from the selected ones, otherwise they would have a similar index. Therefore, we do not want to include them in our control group.

Following, we construct a propensity score on intensive variables and not on extensive variables[4]. Using this probit estimation of the second column, we compute the propensity score, i.e., the probability of treatment assignment conditional on observed characteristics. We represent these probabilities for the two groups in the histogram 4.2.

We find that the ZRUs chosen to become ZFUs proved to be quite similar to the areas that did not benefit from the policy. However, we will now propose some alternative methods in order to be sure that our estimated effect is not due to the difference in the distribution of propensity score between the control group and the treatment group.

4.3.3 Alternative estimation methods

We want now to fully exploit the differences between the observable characteristics of the zones in the control group and in the treatment group. The first idea is to reweigh our sample to make the distribution of propensity score in the control group similar to the distribution in the treatment group: it is the inverse probability weighting method. The second idea is to compare each unit of the treatment group with some comparable units in the control group: these are matching methods. Here we compute a nearest-neighbor estimator and a kernel matching estimator.

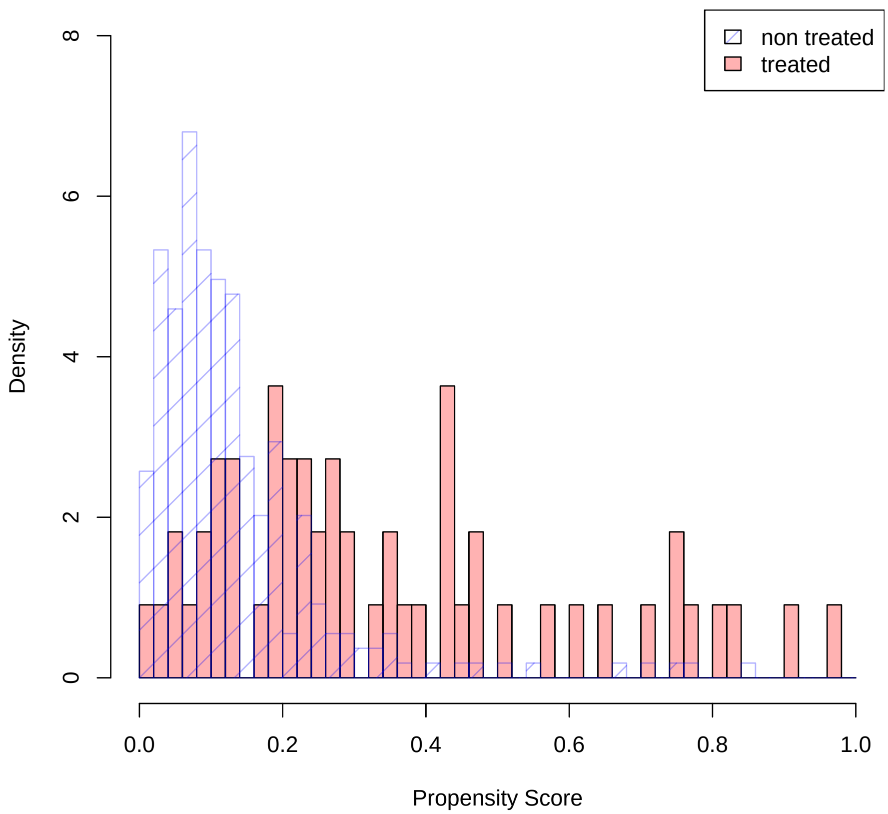
In practice, we proceed in two steps. First, by estimating the equation 15, we recover a before and an after zone fixed effect for each zone of the control group and the treated group: $c_{j,-\mathbb{1}_{\{t<t_0\}}}$ and $c_{j,-\mathbb{1}_{\{t\geq t_0\}}}$

$$\log(Y_{ijt}) = e_t + c_{j,-\mathbb{1}_{\{t<t_0\}}} + c_{j,-\mathbb{1}_{\{t\geq t_0\}}} + X_i\beta + \epsilon_{ijt} \tag{15}$$

And the second step consists in computing the propensity score matching difference-in-difference estimator. We match each treated unit with untreated units with similar propensity score. We use different matching methods: nearest-neighbor matching and kernel. For the kernel matching method, the untreated observations are weighted according to their distance from the treated observation, the weights being determined by a gaussian kernel. For the nearest-neighbor matching method, the

[4]By analogy with chemistry, we call intensive variable a variable whose value does not depend on the system size for which it is measured.

Figure 4.2: Probability to be treated for ZRU and ZFU



Notes: Using the probit estimation of the second column of Table 3, we compute the predicted probability for each zone to become ZFU conditional on observed characteristics. We represent these probabilities for the ZFUs (treated) and for the ZRUs (non treated).

treated observation is matched with the 5 nearest untreated observations, i.e., the 5 ones with the closest propensity score.

We also compute the inverse probability weighting estimator, which introduces weights in the control group in order to mimic the distribution of the propensity score in the treatment group.

Finally, the average treatment effect on the treated is computed by averaging the estimated effects for each treated zone.

In this model, because we have observations of different years in different zones, we have spatial and time correlation of errors. To cope with this difficulty, we follow Bertrand et al. (2004) and we correct these correlations by clustering or by block-bootstrapping the estimation at the level of the zone for our estimators using all the ZRUs as control group. For our difference-in-difference matching estimators, the standard deviations are estimated by block bootstrap at the level of the zones. We compute cluster-robust standard errors, i.e. we allow the error terms to be correlated within zones but we do not impose specification of a model for within-cluster error correlation (see Cameron and Miller, 2013).

5 Results

5.1 Pre-trend tests

Table 4: Pre-trend tests

Generation	2^{nd} gen		3^{rd} gen	
	(1)	(2)	(3)	(4)
Variables	logprice	logprice	logprice	logprice
	FE	FE	FE	FE
Placebo treatment	0.065	0.065	-0.004	-0.004
	(0.217)	(0.205)	(0.272)	(0.135)
Hedonic Controls	x	x	x	x
Number of observations	236	236	197	197
Number of zones	101	101	87	87
R-Square adjusted	0.256	0.619	0.185	0.590
R2-within	0.668	0.668	0.638	0.638
R2-between	0.142	0.142	0.155	0.155
R2-overall	0.282	0.282	0.335	0.335

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.010

Notes: We regress the logarithm of the prices on a placebo treatment, equal to one in ZFU in 2002 for the second generation and equal to one in ZFU in 2004 for the third generation. The columns 2 and 4 correspond to robust estimations with clustered standard-errors at the level of the zone.

Table 4 and Table 5 show the results of the pre-trend tests. We can not test the identification hypothesis which is the common trend in absence of treatment, but we can at least verify if it holds before the treatment. We therefore compare the treatment time trends between the control and the treatment group. This is equivalent to the estimation of the effect of a placebo treatment (equal to one in ZFU in 2002).

The fixed-effects estimators of being ZFU before the policy implementation are very close to zero for the second and for the third generation. We find similar results when we compute difference-in-difference estimators of a placebo treatment for both generations. This suggests that ZFU and ZRU followed the same price trend before the implementation of the policy.

To support the hypothesis of common trend between the control and the treatment group, we compute the pre-trend tests for the evolution of business creation for the second generation of ZFU. We replicate in the Table 6 the methodology of Givord et al. (2013). We find no difference between the evolution of business creation in ZFU and in ZRU before the implementation of the policy (in 2003): all estimates are very close to zero.

Table 5: Pre-trend tests (difference-in-difference matching estimators)

Estimation method	Nearest neighbor	Inverse probability weighting	Kernel matching
Estimator	ATT	ATT	ATT
	(1)	(2)	(3)
Placebo treatment	-0.019	-0.003	-0.011
	(0.378)	(0.401)	(0.394)
Hedonic controls	x	x	x
Number of zones	50	50	50

Notes: We compute two propensity score matching difference-in-difference estimators (the nearest neighbor and the Kernel one) and the inverse probability weighting estimator. The treatment variable is a placebo, equal to one in ZFU in 2002 for both generations. We compute cluster-robust standard-errors at the level of the zone by blockbootstrap.

Table 6: Pre-trend tests for business creation by industry for the second generation

Year	2003
Stock (Δ Log)	
Manufacturing	0.00
	(0.06)
Construction	0.06
	(0.05)
Retail	0.00
	(0.03)
Transportation	0.04
	(0.08)
B to B	0.03
	(0.07)
Services to households	-0.03
	(0.05)

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.010

Notes: Results correspond to a Gaussian kernel matching method. The standard deviations are estimated by block bootstrap in zones.

Source: *We replicate Givord et al. (2013).*

5.2 Effect on all types of business properties

5.2.1 Effect on the second generation

Table 7 presents estimations of the treatment effect of ZFUs for the second generation: treatment since 2004 for 41 zones when the control group is composed of all the ZRUs.

We pooled the transactions of all types of commercial properties (offices (20%), retail (65%), industrial workshops (7%), storage buildings (4%) and medical real-estate (4%)). For each estimation, the explained variable is the logarithm of the transaction price. We include in all the regressions the characteristics (surface, occupancy status, . . .) by type of commercial real-estate. In other words, we consider that the prices of characteristics and the time trends depend on the type of business real-estate we consider. These markets are indeed likely to be quite independent.

Table 7: Estimation of the impact of the 2^d generation of ZFU on all types of business real-estate (control group: all the ZRUs)

Variables	(1) logprice OLS	(2) logprice Cluster	(3) logprice Blockbootstrap	(4) logprice FE	(5) logprice RE	(6) logprice RE (FE sample)
Treatement effect	0.285**	0.285**	0.285**	0.222*	0.223	0.223**
	(0.116)	(0.140)	(0.129)	(0.121)	(0.158)	(0.112)
Hedonic Controls	x	x	x	x	x	x
Number of observations	934	934	934	892	934	892
Number of zones				136	178	136
R-Square adjusted	0.630	0.630	0.630			
R2-within				0.685	0.683	0.683
R2-between				0.398	0.602	0.602
R2-overall				0.467	0.643	0.643

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.010

Notes: We regress the logarithm of the prices on the treatment variable which is equal to one if the transaction is located in a ZFU after the implementation of the treatment. The standard deviations in columns 2 and 4 to 6 are clustered at the level of the zone. They are estimated by block-bootstrap at the level of the zone in the column 3.

Our sample is composed of 934 transactions, 515 in ZRUs, 419 in ZFUs, of whom 325 after the treatment. In the first column of Table 7, we report simple Ordinary Least Squares of the logarithm of the price on the previously cited variables with robust standard-errors. The estimated effect is around 28%, and significant at 5%. In the second column, we run the same regression but we cluster standard-errors by zone. This standard-error is corrected for heteroskedasticity and becomes larger but the estimate remains significant at 5%. This implies some heteroskedasticity, due to common exposition to the same local shocks which produce serial correlation within zones. In the third column we estimate the variance-covariance matrix by block-bootstrap in zone, the estimate remains significant at 5%. In the fourth column we run fixed-effects model (we introduce fixed effects at the level of the zone). Because in some zones we have only one transaction over the period, we have to reduce our sample to 892 transactions in 136 zones.

We find a positive effect of 22%, which is significant at 10% percent. The estimated treatment effect is obtained by exploiting only the variation of prices within zones, controlling for the price of characteristics and for the time trend which would have prevailed if the zone would not have been treated. This is a very reliable estimation of the effect of the implementation of the enterprise zone because we take into account the potential evolution of the characteristics of the properties and we allow the prices to vary in level by zone.

In the last two columns we run random-effects model for the whole sample and for the sample used for the fixed-effect estimation (zones with at least two transactions). We exhibit both fixed and random effects estimators because the Hausman test does not conduct to reject random effect estimation[5]. The non-rejection on the random effects estimation means that we do not reject the

[5]The p-value of this test is around 0.98 for the estimations on the same sample. We do not reject the null hypothesis of the consistency of the random effects estimator.

hypothesis of the absence of selection. In other terms, we do not reject the possibility that among the ZRUs, ZFUs are chosen randomly, concerning business real-estate prices. Both methods estimate a positive impact of ZFUs on business real-estate prices of around 22%. Table 8 reports the results of

Table 8: Estimation of the impact of the 2^d generation of ZFU on all types of business real-estate (difference-in-difference matching estimation)

Estimation method	Nearest neighbor	Inverse probability weighting	Kernel matching
Estimator	ATT	ATT	ATT
	(1)	(3)	(5)
Treatment effect	0.264***	0.294***	0.248***
	(0.041)	(0.047)	(0.050)
Hedonic controls	x	x	x
Number of zones	136	136	136

Notes: We compute two propensity score matching difference-in-difference estimators (the nearest neighbor and the Kernel one) and the inverse probability weighting estimator. The treatment variable is equal to one if the transaction is located in ZFU after 2004. We compute cluster-robust standard-errors at the level of the zone by blockbootstrap.

our difference-in-difference matching estimators described in subsection 4.3.3. We compute each time the average treatment effect for the treated.

The three estimates are around 25% and are significant at 5%. These results are very similar to those obtained by considering all the ZRUs equivalently in the control group. This suggests that our results in Table 7 would not be driven by the difference between the two distributions of propensity score in figure 4.2.

5.2.2 Effect on the third generation

Table 9 presents estimations of the treatment effect for the third generation (treatment since 2006).

Table 9: Estimation of the impact of the 3^d generation of ZFU on all types of business real-estate (control group: all the ZRUs)

Variables	(1) logprice OLS	(2) logprice Cluster	(3) logprice Blockbootstrap	(4) logprice FE	(5) logprice RE	(6) logprice RE (FE sample)
Treatement effect	0.059	0.059	0.059	0.128	0.133	0.149
	(0.137)	(0.170)	(0.123)	(0.132)	(0.125)	(0.126)
Hedonic Controls	x	x	x	x	x	x
Number of observations	718	718	718	680	718	680
Number of zones				117	155	117
R-Square adjusted	0.574	0.574	0.574	0.478		
R2-within				0.639	0.633	0.637
R2-between				0.492	0.610	0.577
R2-overall				0.551	0.602	0.596

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.010

Notes: We regress the logarithm of the prices on the treatment variable which is equal to one if the transaction is located in a ZFU after 2006. The standard deviations in columns 2 and 4 to 6 are clustered at the level of the zone. They are estimated by block-bootstrap at the level of the zone in the column 3.

When we compute the estimation of the impact of the third generation of ZFU using all the ZRUs as control group, we find no significant effect of the policy implementation. Our sample is smaller because only 14 zones are treated but our estimates are not only insignificant but also of smaller magnitude: between 6% and 15% for the third generation while we find an effect of around 20% for the second generation.

Table 10: Estimation of the impact of the 3^d generation of ZFU on all types of business real-estate (difference-in-difference matching estimators)

Estimation method	Nearest neighbor	Inverse probability weighting	Kernel matching
Estimator	ATT	ATT	ATT
	(1)	(2)	(3)
Treatment effect	0.096***	-0.060	-0.011
	(0.047)	(0.077)	(0.076)
Hedonic controls	x	x	x
Number of zones	117	117	117

Notes: We compute two propensity score matching difference-in-difference estimators (the nearest neighbor and the Kernel one) and the inverse probability weighting estimator. The treatment variable is equal to one if the transaction is located in ZFU after 2006. We compute cluster-robust standard-errors at the level of the zone by blockbootstrap.

In Table 10, we report the results of the difference-in-difference matching estimations. We find a significant effect of around 10% with the nearest-neighbor method but estimates close to zero and insignificant with the two other methods.

We will now focus on the second generation to explore the heterogeneity of the effect and we will come back to the difference between the two generations and try to explain why the third generation had no or a smaller inflationary effect on business real-estate prices while the second generation had a rather huge inflationary effect.

5.2.3 Spillover effects

Because some ZRUs are close to ZFUs we can expect spillover effects of the implementation of the policy. Three scenarios are possible. First, a ZRU in the neighborhood of a ZFU could benefit from some positive collateral effects of the proximity of a ZFU. Second, on the contrary, a ZRU in the neighborhood of a ZFU could suffer from the proximity of a ZFU if potential entrepreneurs in ZRU would finally prefer to create new businesses in ZFU because of the policy. Third, there could be no spillover between the zones. By excluding from our control group the ZRUs that are in the same urban area than a ZFU (all generations considered, including the first generation), we propose a test of these equilibrium effects.

Table 11 presents the results of the estimation of a treatment effect for the second generation of ZFU. We use our two groups of estimators. Comparing Table 7 and Table 8 with Table 11, we find higher effects for each of our estimations than with our baseline control group, which would be in line with a knock-on effect.

Table 11: Equilibrium effect for the scond generation

Estimation method	Control group: ZRU			Nearest neighbor	Inverse probability weighting	Kernel matching
	FE	RE	RE (FE sample)	ATT	ATT	ATT
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment effect	0.320*	0.333**	0.324**	0.361***	0.416***	0.349***
	(0.174)	(0.165)	(0.156)	(0.035)	(0.086)	(0.073)
Hedonic Controls	x	x	x	x	x	x
Number of observations	674	701	674			
Number of zones	101	128	101	61	61	61
R2-overall	0.583	0.672	0.673			

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.010

Notes: We exclude from our control group the ZRUs that are in the same urban area than a ZFU (all generations considered, including the first generation). The columns 1 to 3 correspond to the fixed and random effects estimators. We report in columns 4 to 6 two propensity score matching difference-in-difference estimators (the nearest neighbor and the Kernel one) and the inverse probability weighting estimator. We compute cluster-robust standard-errors at the level of the zone by blockbootstrap.

5.2.4 Magnitude of the effects

We find an positive effect of around 25% for the second generation. To compare this increase of real-estate prices with the granted public subsidies, we use aggregate amounts. According to the French Budget Bill of 2006, the total cost of tax exonerations in 2004 was 495 million € for a total of 24, 875 firms in ZFU (ONZUS, all generations) at that date. The average cost for one firm per year is therefore around 20,000€ . A lower bound of the expected gain for a firm is the discounted sum of five years of total exemption (in fact, there is a four years extension at a reduced rate, for a total of nine years of subsidies), which is approximately equal to 90, 000 € (we assume a discount rate of 5%).

The mean price of business property values in our database in 2002 is 64, 700 € , an effect of 25% corresponds to 16, 000 € which is far below the expected gain. But we do not take into account the installation costs, the risk of default, etc.

5.3 Estimation by industry

According to our model, the magnitude of the inflationary effect depends on the intensity of real-estate in the production function. If the importance of real-estate is low for the production, i.e. the output elasticity of labor (α) is high, the firm would be able to bear a higher increase of real-estate prices. We want now to test this prediction. We use two different types of business real-estate available in our data, the offices and the retail real-estate. Because office-based activities are more intensive in labour than retail activity, we expect a higher increase in that type of business real-estate.

More precisely, we consider two industries (retail and office-based activities, indexed respectively by r and o) with independent real-estate markets (which is fairly realistic for the case of retail real-estate and offices) and different intensities of real-estate in the production function. By combining equation (1) and (3) for both industries, we obtain the following equations:

$$\frac{w_r L_r}{r_r \bar{R}_r} = \frac{\alpha_r}{1-\alpha_r} \tag{16}$$

and

$$\frac{w_o L_o}{r_o \bar{R}_o} = \frac{\alpha_o}{1 - \alpha_o} \quad (17)$$

Therefore,

$$\alpha_o > \alpha_r \iff \frac{w_o L_o}{r_o \bar{R}_o} > \frac{w_r L_r}{r_r \bar{R}_r}$$

We want to compare these two ratios by using proxies for the three following variables: w, the wage in the industry, r, the real-estate price for offices and retail and $\frac{L}{R}$, the average number of employees per square meter.

We use databases of the notaries to compute the average price per square meter in retail real-estate and in offices. Average prices per square meter in France in 2010 are approximately equal to 2000 € for offices and to 2500 € for retail. For the average wage in each industry, we use the data from the French National Institute of Statistics (Insee). Every year, the average wage by industry is computed using exhaustive data on wages. For 2010, the average wage was 22,750 € for the retail sector, and 25,550€ for the services industry. Considering the office-based activities as those of the services industry is imprecise but we certainly undervalue the average wage of an office worker by this way. This approximation will not reverse the inequality.

We use data from Insee for the number of employees per square meter in the retail sector. According to the retail survey 2009 (*enquêtes Points de vente*), the average number of square meters per employee in the retail industry is around 48 in 2009 (we simply divide the total surface by the number of employees in the industry).

For the office-based activities, there is no official statistics on the average number of square meters per employee. The labour code imposes a minimum of 10 square meters per employee but according to a study of Cushman & Wakefield, the European average for the number of square meters per office worker is 14 square meters, we will use this value.

Computing these two ratios (the three variables contribute to increase the difference between the two ratios $\frac{\alpha}{1-\alpha}$ for offices), we find, as expected, that $\alpha_o > \alpha_r$, i.e., office-based activities are less intensive in real-estate than retail (and more intensive in labour). We test now if the inflationary effect is larger for offices than for retail real-estate.

Table 12 presents the results of the estimation of the treatment effect for the second generation of ZFU on retail transactions only for the three first columns and on offices only for the three last columns. We find an impact of approximately 30% with the fixed and random effects estimations on retail real-estate prices and an impact of approximately 50% (imprecisely estimated) with the fixed and random effects estimations for prices of offices.

We compute only the estimators using the whole sample of ZRU for control group and not our difference-in-difference matching estimators because we do not have enough observations to bootstrap the standard errors at the level of the zone for offices.

Even if our effects are not precisely estimated, we find a higher impact of the policy on retail property values than on office building prices. When we run the joint regression and test for the equality of the two coefficients (treatment for retail real-estate and treatment for offices), we obtain a F statistics of 0.71. We reject the equality of the coefficients at 40%.

The impact on office building prices seems higher than the impact on retail real-estate, which is in

Table 12: Estimation of the impact of the 2^d generation of ZFU on retail real-estate and offices

Type of real-estate	Retail			Offices		
	FE	RE	RE (FE sample)	FE	RE	RE (FE sample)
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment effect	0.318**	0.335**	0.320**	0.613**	0.416	0.436
	(0.141)	(0.131)	(0.132)	(0.295)	(0.351)	(0.346)
Hedonic Controls	x	x	x	x	x	x
Number of observations	498	530	498	180	183	180
Number of zones	126	158	126	59	62	59
R2-within	0.537	0.535	0.535	0.800	0.785	0.787
R2-between	0.580	0.605	0.582	0.570	0.681	0.675
R2-overall	0.512	0.531	0.522	0.685	0.730	0.728

Standard errors in parentheses
* $p<0.10$, ** $p<0.05$, *** $p<0.010$

Notes: We run fixed and random effects estimators for two subsamples: retail real-estate and offices. The columns 1 to 3 correspond to the estimation of the effect on retail real-estate prices. We report in columns 4 to 6 the results for offices. We compute cluster-robust standard-errors at the level of the zone by blockbootstrap.

line with an industry less intensive in real-estate and more intensive in labour. Office-based activities benefit relatively more than retail activity of the wage subsidy.

5.4 The influence of real-estate supply elasticity

We now want to test the third prediction of our model: the influence of real-estate elasticity on the magnitude of the impact. According to the model, the magnitude of the inflationary impact of the policy depends on the level of real-estate supply elasticity in the zone. Smaller is the elasticity of supply, higher would be the inflationary effect.

The elasticity of real-estate supply is not available at the local level in France. Even at the national level, the estimates are not necessarily reliable. Unfortunately, there is no equivalent of Saiz (2010) for the French territory.

But we have access to very detailed data on land registry and building permits over our period of interest. We will use the land-use ratio before the implementation of the policy as a proxy for elasticity of real-estate. The intuition is the following: if there is much free space in the zone at the date of policy implementation, it would be easier to construct new buildings, and following we would consider the elasticity of supply to be higher. We unfortunately can not take into account regulation because of lack of data.

We focus on the second generation and we split our sample of transactions into two equal groups depending on different measurements of the availability of land before the policy. Then, we estimate a different treatment effect for the two populations.

Table 13 presents our results. In the first column, we split our sample depending on the level of the land-use ratio before the policy. In other terms, we compute the percentage of built-up land in the zones and we estimate a different treatment effect for zones with high percentages of land use and for low percentages. We find a much larger effect of around 50% for the high land-use ratio areas compared with a non-significant and very small effect for the low land-use ratio areas. In the second

Table 13: Influence of real-estate supply elasticity for the 2^{nd} generation

Variables	(1) logprice FE	(2) logprice FE	(3) logprice FE
Treatment effect	0.517***		
× high land-use ratio	(0.141)		
Treatment effect	-0.020		
× low land-use ratio	(0.131)		
Treatment effect		0.324*	
× high business land-use ratio		(0.176)	
Treatment effect		-0.092	
× low business land-use ratio		(0.131)	
Treatment effect			0.249
× high construction rate			(0.158)
Treatment effect			0.208*
× low construction rate			(0.123)
Hedonic Controls	x	x	x
Number of observations	892	892	892
Number of zones	136	136	136
R2-within	0.690	0.688	0.685
R2-between	0.551	0.564	0.570
R2-overall	0.600	0.615	0.624

Standard errors in parentheses

* p<0.10, ** p<0.05, *** p<0.010

Notes: We report only fixed-effects estimators. In the first column, we split our sample in two depending on the level of the land-use ratio (percentage of built-up land) before the policy. In the second column, we use the business land-use ratio (the part of the land occupied by business real-estate). And in the third column, we use the annual construction rate in sq.m.

column, instead of using the general land-use ratio, we use the business land-use ratio (the part of the land occupied by business real-estate) to split our sample in two equal subsamples. We find again a much larger effect of around 30% for the highest business land-use ratio areas compared with a non-significant and very small effect for the lowest business land-use ratio areas. These results are in line with our model predictions. It seems that the land surface available to new buildings in the zone before the policy had influenced the magnitude of the inflationary effect on real-estate prices.

We run in the third column a last regression to check if our previous results are not due only to particularly unattractive zones, in which floor area ratio was low before the policy and no activity has been developed after the policy. In this case, the low floor area ratio would not be only a sign of land availability but also a symptom of unattractiveness.

To test this hypothesis, the idea is to use the construction rate after the policy. We use the annual construction rate in sq.m. to split our sample in two equal subsamples. We find similar estimators of the treatment effect for the two groups, around 20%. This argues against the hypothesis of zones combining low floor areas, low construction rates and following low inflationary effect on prices. To try to understand the difference of magnitude between the inflationary effect of the second and of the third

Table 14: Statistics on land-use before the implementation of the policy in ZFU

Generation		Surface of the ZFU (sq.m.)	Floor area ratio in 2003 (2G) or 2005 (3G) (%)	Business real-estate ratio in 2003 (2G) or 2005 (3G) (%)
2^{nd}	Median	1,686,265	14.24	1.16
	Mean	2,012,606	13.83	1.20
	Sd	1,222,173	3.95	2.12
3^{rd}	Median	1,425,109	12.21	0.03
	Mean	2,001,863	13.55	0.67
	Sd	1,805,493	5.46	3.41
Total	Median	1,580,943	13.91	0.76
	Mean	2,010,019	13.76	1.08
	Sd	1,365,803	4.31	2.47

Notes: In the second column we compute the floor area ratio before the implementation of the policy. Because we have the precise land-use from IGN in 2014 and the exhaustive data on building permits between 2000 and 2014, we can subtract the net surface of new buildings (net from demolition permits) from the surface of built-up land in 2014. In the third column, we do the same but with business real-estate.

Source: *National Geographical Institute (IGN) and Sitadel.*

Table 15: Statistics on construction after the implementation of the policy in ZFU

Generation		Number of building permits by year after policy	Surface of new construction by year after policy (sq.m.)	Surface of new business construction by year after policy (sq.m.)
2^{nd}	Median	5.00	6064.10	2523.40
	Mean	6.47	6939.30	3492.24
	Sd	5.51	4939.77	3557.30
3^{rd}	Median	5.75	7586.00	3771.75
	Mean	7.22	7651.19	3835.75
	Sd	4.95	4011.55	2050.58
Total	Median	5.05	6329.80	2825.79
	Mean	6.65	7110.68	3574.94
	Sd	5.35	4706.81	3244.14

Notes: The statistics are computed for the period 2004 to 2010 for the second generation and for the period 2006 to 2010 for the third generation.

Source: *Sitadel*

generation, we report in Table 14 the descriptive statistics on land-use for both generations. The zones of the third generation have lower floor area ratio at the date of the implementation of the policy than the zones of the second generation. They have even lower business real-estate ratio (0.67 compared with 1.20 % on average). However, after the implementation of the policy, the average annual surface of new construction is higher for the third generation than for the second generation for comparable surfaces of zones (Table 15). This is in line with our previous results. The third generation seems to have known a lower inflationary effect than the second generation due to more available land at the date of the implementation of the policy. After the policy, we observe a catchup effect with higher construction rate in the zones of the third than in the zones of the second generation.

6 Conclusion

Our model of firm creation predicts that labor subsidy is capitalized into business real-estate prices. The rate of capitalization of subsidies depends on three parameters: the wage credit rate, the output elasticity of real-estate in the concerned industry, and the real-estate supply elasticity.

For our empirical analysis, we first estimate the effect simultaneously on all types of real-estate considering the different real-estate as independent. We run difference-in-difference regression with characteristics of the properties by type of real-estate and zone fixed-effects to assess the inflationary effect of the policy. We find a positive effect of the implementation of the second generation of ZFUs on the price of business real estate. The effect for the second generation is estimated to be approximately around 25% according to our different estimations. The effect of the third generation is positive and smaller but insignificant.

We then focus our empirical analysis on particular industries (with different output elasticities of real-estate): we assess the influence of output elasticity of real-estate by comparing the magnitude of the effects between the impact on offices and the impact on retail real-estate. We find that higher the output elasticity of labor is, lower is the inflationary effect, which is in line with the predictions of the model.

Finally, we relax the hypothesis of common real-estate supply elasticity between zones. We use land use ratio by zone as a proxy for the real-estate supply elasticity and by splitting our samples in different groups depending on the level of construction density in the zone, we try to evaluate the influence of real-estate elasticity on the inflationary effect. We find that in already densely constructed zones, the inflationary effect of the policy on real-estate is higher than for less constructed zones, in line with the predictions of the model.

References

Bertrand, M., Duflo, E. and 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*

Blundell, R., Bozio, A. and Laroque, G. (2011), 'Labor Supply and the Extensive Margin', *American Economic Review* **101**(3), 482–86.
URL: *http://ideas.repec.org/a/aea/aecrev/v101y2011i3p482-86.html*

Bond, S. A., Gardiner, B. and Tyler, P. (2013), 'The impact of enterprise zone tax incentives on local property markets in England: who actually benefits?', *Journal of Property Research* **30**(1), 67–85.
URL: *http://ideas.repec.org/a/taf/jpropr/v30y2013i1p67-85.html*

Bondonio, D. and Engberg, J. (2000), 'Enterprise zones and local employment: evidence from the states' programs', *Regional Science and Urban Economics* **30**(5), 519–549.
URL: *http://ideas.repec.org/a/eee/regeco/v30y2000i5p519-549.html*

Bondonio, D. and Greenbaum, R. T. (2007), 'Do local tax incentives affect economic growth? What mean impacts miss in the analysis of enterprise zone policies', *Regional Science and Urban Economics* **37**(1), 121–136.
URL: *http://ideas.repec.org/a/eee/regeco/v37y2007i1p121-136.html*

Briant, A., Lafourcade, M. and Schmutz, B. (2012), Can Tax Breaks Beat Geography? Lessons from the French Enterprise Zone Experience, PSE Working Papers halshs-00695225, HAL.
URL: *http://ideas.repec.org/p/hal/psewpa/halshs-00695225.html*

Busso, M., Gregory, J. and Kline, P. (2013), 'Assessing the Incidence and Efficiency of a Prominent Place Based Policy', *American Economic Review* **103**(2), 897–947.
URL: *http://ideas.repec.org/a/aea/aecrev/v103y2013i2p897-947.html*

Cameron, A. C. and Miller, D. L. (2013), 'A practitioner's guide to cluster-robust inference'.

Duranton, G. and Puga, D. (2004), Micro-foundations of urban agglomeration economies, *in* J. V. Henderson and J. F. Thisse, eds, 'Handbook of Regional and Urban Economics', Vol. 4 of *Handbook of Regional and Urban Economics*, Elsevier, chapter 48, pp. 2063–2117.
URL: *http://ideas.repec.org/h/eee/regchp/4-48.html*

Givord, P., Quantin, S. and Trevien, C. (2012), A Long-Term Evaluation of the First Generation of the French Urban Enterprise Zones, Technical report.

Givord, P., Rathelot, R. and 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*

Glaeser, E. L. and Gottlieb, J. D. (2008), 'The Economics of Place-Making Policies', *Brookings Papers on Economic Activity* **39**(1 (Spring), 155–253.
URL: *http://ideas.repec.org/a/bin/bpeajo/v39y2008i2008-01p155-253.html*

Gobillon, L., Magnac, T. and 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. and Zenou, Y. (2007), 'The Mechanisms of Spatial Mismatch', *Urban Studies* **44**(12), 2401–2427.
URL: *http://ideas.repec.org/a/sae/urbstu/v44y2007i12p2401-2427.html*

Grégoir, S. and Maury, T.-P. (2012), Quel a été l'effet de l'instauration de Zones Franches Urbaines sur les marchés immobiliers locaux ? Le cas de la Seine-Saint-Denis., Edhec position papers.

Kline, P. and 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*

Kolko, J. and Neumark, D. (2010), 'Do some enterprise zones create jobs?', *Journal of Policy Analysis and Management* **29**(1), 5–38.
URL: *http://ideas.repec.org/a/wly/jpamgt/v29y2010i1p5-38.html*

Landers, J. (2006), 'Why Don't Enterprise Zones Work? Estimates of the Extent that EZ Benefits are Capitalized into Property Values', *Journal of Regional Analysis and Policy, Mid-Continent Regional Science Association* **36**(1).
URL: *http://ideas.repec.org/a/ags/jrapmc/132311.html*

McDonald, J. and McMillen, D. (2010), *Urban Economics and Real Estate: Theory and Policy*, Wiley Desktop Editions Series, Wiley.
URL: *https://books.google.fr/books?id=yZ_mH-P6OYQC*

Moretti, E. (2011), *Local Labor Markets*, Vol. 4 of *Handbook of Labor Economics*, Elsevier, chapter 14, pp. 1237–1313.
URL: *http://ideas.repec.org/h/eee/labchp/5-14.html*

Observatoire national des zones urbaines sensibles (2006), 'Rapport annuel 2006'.

Saiz, A. (2010), 'The Geographic Determinants of Housing Supply', *The Quarterly Journal of Economics, MIT Press* **125**(3), 1253–1296.
URL: *http://ideas.repec.org/a/tpr/qjecon/v125y2010i3p1253-1296.html*

Sillard, P. and Rathelot, R. (2008), 'Zones Franches Urbaines : quels effets sur l'emploi salarié et les créations d'établissements ?', *Economie et Statistique* **415**(1), 81–96.
URL: *http://ideas.repec.org/a/prs/ecstat/estat_0336-1454_2008_num_415_1_7021.html*

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