Political Connections and Alignment: Evidence from Intergovernmental Grants in France

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Abstract

This paper provides new evidence on the politics of intergovernmental grants and raises the issue of political connections in Local Public Finance. Using a new dataset on financial accounts of French municipalities, I look at two effects. The first, never studied to my knowledge, is a multiple offices effect (whether a municipality whose mayor has also an office in an upper layer gets more grants from this layer). The second is an alignment effect (whether upper tiers of government give more grants to mayors of their political affiliation). For identification, I use a Regression Discontinuity Design in close electoral races. I show that aligned mayors who have concurrently a seat in an upper level of government get *double* the amount of grants received by other aligned municipalities. However, mayors who have a seat in an upper tier but are not in the upper council's majority do not manage to get more funds for their municipality. These results suggest that connections play an important role in the allocation of intergovernmental grants. As for the alignment effect, I find robust evidence that aligned municipalities receive more grants *only* when the number of multiple office-holders in the upper council is low. This contrasts with the previous literature on alignment effect. Favouring aligned municipalities may not be the most profitable option for grantors, that is why they may practice other types of targeting.

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1 Introduction

Local governments play an important role in providing public goods and intergovernmental grants represent a high share of decentralized revenues. Among OECD countries, decentralized spending represented between 5.98% and 61.63% of public expenditures in 2012, while intergovernmental grants represented between 10.77% and 71.40% of decentralized revenues[1]. Thus, the allocation of intergovernmental grants is of key importance in the provision of public goods over territories. This grants allocation is decided by *elected* incumbents (through the definition of formulas or discretionary processes). Hence, it may depend on pure political determinants, that is why a growing literature focused on the politics of these grants.

This is what this paper does. I bring new evidence on the politics of intergovernmental grants. I focus on two effects. The first, never studied to my knowledge, is a multiple offices effect (whether a local government whose incumbent has concurrently an office in an upper layer gets more grants from this layer). The second is an alignment effect (whether upper tiers of government give more grants to local elected officials of their political affiliation).

To my knowledge, the existing literature on the politics of intergovernmental grants has focused on the alignment effect. A local government is "aligned" with an upper tier of government if it has the same political affiliation as this upper layer. For example, a positive alignment effect on municipalities regarding grants from the Central State means that the Central State gives more funds to municipalities managed by a mayor of its political affiliation. To my knowledge, main contributions on this issue are Solé-Ollé & Sorribas-Navarro (2008), Arulampalam et al. (2009), Brollo & Nannicini (2012) and Bracco et al. (2014). They all find a positive and significant alignment effect, which varies across papers between 16% and 47% higher grants for aligned local governments than for non-aligned ones. Authors argue that this effect is due to a vote-seeking behaviour. If a local government funds a public good with an upper grant, voters may attribute most of the reward of this public good to local elected officials because this good is managed by them and voters may not know that this is the upper tier which funds this public good. Thus, an upper grantor may indirectly increase the popularity of local incumbents he subsidises, and at the same time the popularity of these local incumbents' party. If upper politicians want to increase the popularity of their party (to be reelected or to help local incumbents of their party to be reelected), they will give more funds to aligned municipalities.

This story may not capture the whole political discrimination there may be behind the allocation of intergovernmental grants. The allocation of these grants may strongly depend on connections between elected officials of the different layers of government. Even if incumbents of a same party may be more likely to be connected, political alignment may not capture all connections between politicians (especially for big parties).

This paper aims at challenging this weakness. I use a new database on detailed financial ac-

[1]See the OECD Fiscal Decentralisation Database:
http://www.oecd.org/ctp/federalism/oecdfiscaldecentralisationdatabase.htm

counts of French local governments over the period 2004-2010 and I look at the effect of holding multiple offices on intergovernmental grants. To my knowledge, this effect on intergovernmental grants has never been studied before. Multiple office-holders are politicians who have concurrently different seats in different tiers of government. It is a common practice in France. Among municipalities with more than 3,500 inhabitants, 40.2% of mayors have also a seat in an upper tier of government. This practice exists in other countries as well[2]. Estimating a multiple offices effect on intergovernmental grants consists in looking at whether local incumbents get more funds from an upper layer of government when they have an office in this layer. Estimating this effect allows me to provide some knowledge on the impact of political connections on intergovernmental grants. Moreover, multiple office-holders may be supported because they may communicate more in favour of the upper tier's policy in their local jurisdiction and make easier the carrying out of common projects between their local government and the upper one.

To estimate this effect, I look at grants French municipalities receive from their district (*département*). 25% of mayors of my sample have concurrently a seat at the district level. My dependent variable is the amount of *discretionary* investment grants (which are allocated through calls for project). My database on detailed financial accounts of French local governments allows me to distinguish between formula-based and discretionary grants, and between grants from different grantors. Focusing on discretionary grants allows me to identify a potential pure discrimination based on political determinants. For identification, I use a Regression Discontinuity Design in close electoral races. I compare mayors who barely won in last district elections to mayors who barely lost. As explained in Lee & Lemieux (2010), this method allows me to compare groups for which the treatment can be considered as random. I find a strong multiple offices effect *among aligned municipalities*. Aligned mayors who have an office at the district level get *double* the amount of grants received by other aligned mayors. However, *non-aligned* multiple office-holders do not have any advantage in terms of grants. Even if these mayors have a seat at the district level, they are not in the district council's majority and seem to have no power on the allocation of grants. This last result allows me to exclude interpretations in terms of information on grants application for the strong multiple offices effect among aligned municipalities. Thus, this strong effect of multiple office-holding among aligned municipalities illustrates a high impact of connections between politicians.

This paper estimates as well the effect of political alignment on intergovernmental grants. First, I look at alignment with the district. This estimation aims at seeing whether the effect of alignment in this context of multiple office-holding is similar to what the previous literature has found. Then, I estimate the effect of alignment with the province (*la région*), by looking at grants from this other tier of local government. Only 7% of mayors of my sample have a seat at the province level (while 25% of them are district councillors)[3]. Thus, estimating the effect of alignment with these two different

[2]For example, the share of Member of national Parliaments who have concurrently a local seat is 24% in Germany, 35% in Sweden, 20% in Spain and 83% in France. See Bach (2012).

[3]Despite this low share of mayors who have a seat in a province council, it would have been interesting to estimate

upper tiers of government allows me to know whether alignment matters differently according to the number of multiple office-holders. My dependent variables are still discretionary investment grants. I use a Regression Discontinuity Design which consists in comparing municipalities in which the first aligned candidate barely won in last municipal elections to those in which he barely lost. I find only *weak* and non-robust evidence of an effect of alignment with the district. This last result contrasts with the existing literature. However, I find a positive and significant effect of alignment with the *province*. Municipalities aligned with their province receive 48.5% higher grants from this layer than non-aligned ones. This effect corresponds actually to a cut in grants for barely non-aligned municipalities (this is in line with Brollo & Nannicini, 2012). To my knowledge, this effect is high relatively to those in the previous literature on political alignment[4].

Why is evidence on alignment with districts weak whereas alignment with provinces seems to strongly matter? As explained above, targeting aligned multiple office-holders may be very profitable for district councils (probably more profitable than targeting aligned municipalities). This may be the case for province councils as well. However, given the relatively high number of mayors who have concurrently a seat at the district level, districts *can* focus only on holding multiple offices, contrary to province councils. Even if the kind of discrimination I observe on alignment with the province has no financial costs (because it consists in giving *less* grants to a group of municipalities), it may present a risk (e.g. denunciation by discriminated mayors) district councils may not want to take because potential returns are lower than focusing on the high number of multiple office-holders.

This paper contributes to the literature on the alignment effect on intergovernmental grants. It shows that political alignment may not be the main political criterion which drives the allocation of grants. If grantors prefer to make their targeting on other criteria than alignment, they may *not* favour aligned municipalities. Moreover, this paper may bring new evidence on the previously mentioned story on the attribution of the reward from grants. According to Solé-Ollé & Sorribas-Navarro (2008), Arulampalam et al. (2009), Brollo & Nannicini (2012) and Bracco et al. (2014), the attribution of the reward from grants by voters is unclear. Bracco et al. (2014) provide a model which makes it endogenous. In their theoretical framework, voters observe only taxes and public goods and are aware that this information is incomplete. They use the difference between the level of public goods and the level of taxes as a signal to infer the missing information (grants, effort and abilities of politicians). Under the assumption that abilities of politicians of the same party are positively correlated, the reward got by aligned mayors from grants is higher than the reward got by challengers in non-aligned municipalities. The main idea of papers on alignment effect is the following. If most of the reward from grants goes to the local incumbent who received these funds, grantors will prefer to allocate grants to aligned municipalities. In case of an aligned multiple office-holder, the attribution of the reward is *unambiguous*, because the mayor and the upper councillor

a multiple offices effect "with the province". However, electoral rules of the province ballot prevent me to apply my Regression Discontinuity Design for the estimation of this effect. See Subsection 4.1 for an explanation.

[4]According to the existing literature, aligned municipalities get between 16% and 47% more grants than non-aligned ones. See Solé-Ollé & Sorribas-Navarro (2008), Arulampalam et al. (2009), Brollo & Nannicini (2012) and Bracco et al. (2014).

are *the same person* and this person is in the upper council's majority. Thus, political returns of giving grants to an aligned multiple office-holder may be high. This can be another explanation of the strong multiple offices effect I find.

In addition to contributing to the literature on intergovernmental grants, this paper provides input into the literature on political connections. A huge literature estimates the impact for a firm of having leaders connected to politicians on the value of the firm. The intuition is that a firm leader who knows an elected official can benefit from some supports through different channels (e.g. he can obtain more state procurement contracts, or the creation of a legal framework which favours the firm's activity). To my knowledge, main contributions on this issue are Fisman (2001), Fisman et al. (2012), Do et al. (2012), Do et al. (2013) and Coulomb & Sangnier (2014). Except the paper of Fisman et al. (2012), all contributions find a positive effect of political connections on firm value. This effect varies across papers between 3% and 23%. By looking at holding multiple offices, I raise this issue of connections in Local Public Finance. Moreover, while existing literature uses as a dependent variable an *indirect* output of political connections (which is the firm value), I use a *direct* one (which is the amount of discretionary grants connected or non-connected mayors manage to get). This allows me to identify a precise channel through which political connections can matter.

This paper also contributes to the more specific literature on multiple office-holding. As mentioned above, multiple office-holding exists in France but also in other countries. Such a literature is important because it can be used as a guide to define efficient political institutions. In France, there is a huge debate on holding multiple offices. One the one hand, it is argued that a local incumbent has good insights on his territory and those around it. Thus, his skills are especially appropriated to responsibilities in upper tiers of government. On the other hand, it is argued that multiple office-holders cannot have enough time to take on all their responsibilities. Multiple office-holding is seen by its detractors as a way for politicians to decrease their probability to have no term in the future. This paper provides some input in this debate. To my knowledge, the impact of holding multiple offices on intergovernmental grants has never been studied before. Bach (2011) shows for France that Members of Parliament who have a seat in a municipal council reduce by one third their attendance in parliamentarian committees. However, he finds no more chances for municipal incumbents of running for or winning legislative elections. Foucault (2006) finds for France that Members of Parliament who have also a seat in a municipal council are not more likely to win next legislative elections. The closest contribution to mine regarding the literature on holding multiple offices is the paper of François (2006). He shows that multiple office-holders raise more money for their electoral campaign. However, his identification strategy uses simple OLS and may not get rid of endogeneity issues, contrary to my work which uses a Regression Discontinuity Design in close electoral races.

This paper proceeds as follows. Section 2 describes the French institutional context I study. Section 3 presents the data and sample restrictions. I describe the empirical strategy in Section 4. Results and discussion follow in Section 5. Section 6 contains validity tests. Section 7 concludes.

2 Institutional context

In France, there are three tiers of local government. The lowest one is the municipality (*la commune*). There are 36,688 municipalities over the territory. Their traditional competencies are the management of primary schools, town planning and services of proximity related to culture and social assistance. The second layer is the district (*le département*). The territory is divided into 100 districts, which are in charge of main social services, disabled and elderly people policies, local roads and secondary schooling. The third tier is the province (*la région*). There are 26 provinces over the territory. They are in charge of vocational training policy, economic development and aid to firms. In most of the territory, there are inter-municipal communities (*intercommunalités*), which are between municipalities and districts. These are groups of municipalities which decided to cooperate and merged for the provision of public goods for which there are potential economies of scale. Since 2013, being in such a community is mandatory for every municipality. However, in my sample period (2004-2010), it was not the case[5].

Table 1 shows the amount of total expenditures in 2010 for each tier of government in France. Municipalities are the most important tier of *local* government in terms of spending. Municipal expenditures account for 4.6% of GDP. This is an additive motivation to study intergovernmental grants received by municipalities.

Table 1: Total spending of the different tiers of French governments in 2010 (non-consolidated)

	Amounts	Percentage of GDP
Central State	482.5 B €	24.1%
Provinces (*régions*)	26.5 B €	01.3%
Districts (*départements*)	68.4 B €	03.4%
Inter-municipal communities (*intercommunalités*)	36.2 B €	01.8%
Municipalities (*communes*)	91.1 B €	04.6%

Source: DGFiP (French Ministry of Economy and Finance)

2.1 The investment section of municipal accounts

French local governments have to decompose their budget into two sections: the operating section and the investment one. As I study discretionary investment grants received by municipalities, I describe in Table 2 macro data on the investment section of municipal accounts for all French municipalities. This section represents 32.5% of total municipal spending in 2010[6]. A picture of both sections is provided in Appendix (Section D, Table A1).

As shown in Table 2, discretionary investment grants represent 11.7% of municipal investment spending in 2010. There is no official rules for the way of allocating these grants. Usually, they

[5]The share of municipalities who are in a community moves from 85.7% in 2004 to 94.8% in 2010.

[6]See Table A1 in Appendix which mentions this share.

Table 2: Financial resources for investment spending of French municipalities in 2010

Type of resource	Amounts	Share in investment resources
Operating section surplus	12.1 B €	40.3%
Formula-based investment grants	04.5 B €	15.0%
Loans	06.4 B €	21.3%
Discretionary investment grants	03.5 B €	11.7%
from districts	*01.3 B €*	*04.3%*
from provinces	*00.6 B €*	*02.0%*
from others[1]	*01.6 B €*	*05.4%*
Other investment resources[2]	03.5 B €	11.7%
TOTAL	30.0 B€	100.0%

Source: DGFiP (French Ministry of Economy and Finance).
These macro data come from financial accounts of all French municipalities.
[1] These are grants from inter-municipal communities, the Central State and the European Union.
[2] "Other investment resources" include diverse revenues like capital property donations or transfers of capital assets due to transfers of competencies. This category also includes the Tax on Local Facilities (*Taxe Locale d'Équipement*) which is a local tax on constructions.

are allocated through calls for projects. Then, a grant is associated to a special project of investment. Municipalities have to send to grantors an application which contains a description of the project and financial accounts of the municipality for previous years. My data on French financial accounts contains the amount of these grants each municipality receives from each grantor. Focusing on discretionary grants allows me to identify a potential pure discrimination based on political determinants.

40.3% of municipal investment expenditures are funded by surplus from the operating budget[7]. Therefore, municipal investment is partially funded by operating resources (See Table A1 in Appendix for the structure of operating resources). The remaining share of municipal investment expenditures is funded by loans, formula-based investment grants and "other investment resources"[8].

2.2 Elections of local incumbents

This subsection presents briefly electoral rules for the three tiers I study : the municipality, the district and the province. Figures 1 and 2 provide a broad picture of the timing of these elections. More details on electoral rules can be found in Appendix (Section A).

[7]French local governments do not have the right to have a debt on their operating section. This section has to be either in equilibrium, or in surplus. If there is a surplus, it can be used to fund investment spending. However, investment expenditures can be funded by debt. See Section D, Table A1 in Appendix for a broad picture of municipal accounts in 2010, with a description of both budget sections (the operating section and the investment one).

[8]This last category includes other diverse resources like capital property donations or transfers of capital assets due to transfers of competencies. This category also includes the Tax on Local Facilities (*Taxe Locale d'Équipement*) which is a local tax on constructions.

The municipal ballot is a two-rounds list system. It consists in electing members of the municipal council (*conseil municipal*) and not the mayor, which is elected by the council. In towns with more than 3,500 inhabitants[9], the winning list is attributed half of the seats in the municipal council. The remaining half is attributed in a proportional way among all lists (including the winning one). Therefore, there is always a list which is assigned the absolute majority of seats. Municipal elections take place every 6 years (with no term-limit). In my sample period, municipal incumbents come from two elections : one in 2001 and one in 2008[10].

In district elections, citizens vote only for members of their district council (*conseil général*). Then, district councillors vote for the president of the council.

Each district is divided into different *cantons*. There is a first-past-the-post vote (and so, one incumbent) in each *canton*, with two rounds. In 2010, there were 4,038 district councillors for 100 districts (so, about 40 councillors per district on average). District incumbents have a 6-years term (with no term-limit). But elections are organized every 3 years. In each election, half of the *cantons* renews their representative. In each district, there are *cantons* of both series (i.e. no district renews all its incumbents during one election). In my sample period, I have incumbents from three elections : 2001, 2004 and 2008[11].

This voting system is such that all district incumbents in a given district have not the same political affiliation. That is why among district incumbents who have an office of mayor concurrently, there can be aligned incumbents and non-aligned ones. This will allow me to distinguish between aligned multiple office-holders and non-aligned multiple office-holders.

It is possible to have district councils without any absolute majority of a political affiliation. Therefore, I attribute to a district council the political affiliation of its President. From my point of view, this assumption may not be strong for two reasons. First, the President of the council may have an additive power on the council's policy. Secondly, the President is elected by councillors. Therefore, he can be considered as being representative of the majority of district incumbents.

The province ballot is a two-rounds list system. It consists in electing members of the province council (*conseil régional*). The president is elected by the council. The winning list is attributed one quarter of the seats. Remaining seats are attributed in a proportional way among all lists (including the winning one). Province elections are organized every 6 years (with no term-limit). In my sample period, incumbents come from two elections : 2004 and 2010. In 2010, there were 1,880 councillors for 26 provinces (so, about 72 councillors per province on average).

[9]Smaller municipalities have different electoral rules for the municipal ballot. See Section A in Appendix for a description. Data on election in these small municipalities is of low quality. Moreover, it is sometimes difficult to assign a political affiliation to these small jurisdictions. Thus, I do not include these municipalities in my analysis.

[10]The 2008 elections were 7 years after the previous ones in order not to have municipal elections during the same year as presidential and legislative elections.

[11]As for the municipal ballot, this last election was in 2008 instead of 2007 in order not to have district elections during the same year as presidential and legislative elections.

Table 3: Share of mayors who have concurrently an upper office (by type of upper office) - municipalities with more than 3,500 inhabitants

District councillor	25.0%
Province councillor	07.0%
Member of the French Parliament[1]	11.2%
Member of the European Parliament	00.1%

Source: French Home Office and computations of the author. These macro statistics come from municipalities over 3,500 inhabitants. To identify multiple office-holders, I do a matching between names of mayors and names of upper incumbents (see Section B in Appendix for more details). As the identity of municipal incumbents is sometimes missing, I drop related municipalities from my sample.
[1] The French National Parliament is made of two chambers: the National Assembly and the Senat. A Member of the French Parliament is a member of one of these two chambers.

For the same reasons as those explained above for district councils, I attribute to a province council the political affiliation of its President.

2.3 Holding multiple offices

Holding Multiple Offices (*le cumul des mandats*) is a common practice in France. This is illustrated in Table 3, which shows for each kind of upper office[12] the share of mayors (in municipalities with more than 3,500 inhabitants) who have this kind of office at the same time. In this paper, I focus on the impact of being concurrently a mayor and a district councillor[13]. This is all the more interesting since the highest share in Table 3 is the one related to district councils. 25% of mayors of my sample are district councillors. In the public debate, holding an office in several local councils is usually justified by the following argument. A politician who has already a seat in a local council may have more experience and better insights on his jurisdiction and those around it. Thus, he may have more appropriated skills to hold other responsibilities at upper levels. This argument is all the more raised to support mayors who are district councillor since each district incumbent represents a specific territory of his district (see Subsection 2.2).

Mayors who are district councillor at the same time are subject to two restrictions imposed by the French Law. First, a politician cannot have more than two offices among the following : municipal councillor, district councillor and province councillor. Second, an elected official cannot have more than one office among the following : mayor (president of the municipal council), president of the district council, president of the province council.

2.4 French political parties

In France, there are two main political parties: the Socialist Party (PS[14]), which is left-wing, and the Union for a Popular Movement (UMP[15]), which is right-wing. These two parties strongly

[12] Except the offices of Ministers or President of the Republic.
[13] I do not estimate the impact of being concurrently a mayor and a province councillor because electoral rules of the province ballot prevent me to apply my Regression Discontinuity Design. See Subsection 4.1 for an explanation.
[14] *Le parti socialiste.*
[15] *L'Union pour un Mouvement Populaire.*

dominate the French political debate. Apart from these two main organizations, there are several smaller left-wing parties[16] which frequently make coalitions with the PS for elections. The picture has been different for the right-wing since 2002 (i.e since the creation of the UMP). Before this year, the former main right-wing party (the RPR[17]) frequently made coalitions with smaller right-wing parties for elections. In 2002, the UMP was created. This new party consisted in merging the RPR with a lot of these smaller right-wing organizations.

There are also extreme parties. The extreme right is dominated by the National Front (FN). The extreme left is more divided, with two main organizations[18]. There are also some center-wing parties. Finally, some political organizations cannot be classified in terms of left-wing or right-wing (e.g. regionalist parties, some ecologist parties).

In practice, some incumbents have no official party of affiliation. However, they mention to the administration if they are left-wing, right-wing or independent. These incumbents are mostly in municipal councils. There are few of them in upper tiers.

In my analysis, I classify all incumbents into five affiliation categories. Left-wing incumbents are members of the PS or other smaller left-wing parties. I also include in this category left-wing candidates without any party. Right-wing candidates are defined in a similar way. The three other categories are extreme-left wing incumbents, extreme-right wing politicians, and "others". I include in this last category members of center-wing parties which have no official partnership with any left-wing or right-wing party[19], politicians without any party and who declare no informal affiliation in terms of left-wing and right-wing, and members of parties which cannot be classified in terms of left or right-wing.

3 Data description and the sample

Information on discretionary investment grants comes from a new dataset on detailed financial accounts of French local governments over the period 2004-2010. This dataset is provided by the General Broad of Public Finance (DGFiP, French Ministry of Economy and Finance). It contains, for each year and each local government, a detailed decomposition of their revenues and expenditures. It allows me to know the amount of discretionary investment grants received by each municipality from each upper tier. Using data of the French census on the total population of each municipality[20], I use as a dependent variable in my estimation the amount of grants per inhabitant.

[16]The main ones are the Communist Party (PC), Europe Ecology The Greens (EELV) and the Radical Left-Wing Party (PRG).

[17]the Rally for the Republic (Rassemblement pour la République).

[18]These two parties are the New Anticapitalist Party (NPA) and Worker's Struggle (LO).

[19]Before 2007, the main center-wing party was the UDF. This party had strong relationships with the UMP. Thus, UDF incumbents are classified as right-wing before 2007. In 2007, the UDF was divided into two parties. The first (the NC) was created by politicians who wanted to keep the partnership with the UMP. I classify it as right-wing. The second (the MoDem), was created by politicians who wanted to be independent. I classify it in the category of "other politicians".

[20]See Section C in Appendix for details on variable construction from the French census.

I deflate these amounts using the consumption price index with base 2010 provided by the National Institute of Statistics and Economic Studies (INSEE).

In my estimations, I drop years of municipal and upper elections[21]. These elections occur in March. During years of elections, the budget of local governments whose councillors are renewed is usually voted before the elections (although the deadline imposed by the law for voting the budget is always after the elections). However, the new council can make modifications on the voted budget during the whole year. Because I am not able to know whether grants registered in the budget were allocated before or after the elections, I cannot know for these years which local incumbents grants are linked to.

Data on local incumbents and results of elections are provided by the French Home Office. For each ballot (whatever the tier), I have the political affiliation and the share of votes of each list or candidate. However, this database does not contain directly the information on holding multiple offices, but it contains first names and surnames of incumbents. To identify multiple office-holders, I do a matching between names of mayors and names of upper incumbents (see Section B in Appendix for more details). As the identity of municipal incumbents is sometimes missing, I drop related municipalities from my sample.

Municipalities with more than 3,500 inhabitants and smaller municipalities have different electoral rules for municipal elections (see Section A in Appendix for more details). Electoral data on these two groups of municipalities are in different files. I restrict my sample to municipalities with more than 3,500 inhabitants for two reasons. First, data on elections in smaller municipalities is of low quality. Second, it is sometimes difficult to assign a political affiliation to these small jurisdictions. This restriction consists in keeping 2,746 municipalities over the 36,688 ones.

I divide political affiliations of incumbents into five categories: the left, the right, the extreme-left, the extreme-right, and "other politicians" (see Subsection 2.4 for a definition of these five groups). Except four districts which became center-wing in 2008 (which I drop from my sample), all districts and provinces are either left-wing, or right-wing[22]. This is not the case for municipal councils. I keep only left-wing and right-wing municipalities. Without this restriction, non-alignment (combined or not with holding multiple offices) would have different meanings. For example, in a left-wing upper council, a non-aligned municipality could be right-wing, extreme-right wing, extreme-left-wing or in "other municipalities". Non-aligned municipalities would be politically heterogeneous. This restriction is important for estimating the alignment effect but also the multiple offices effect, as I will estimate it among aligned municipalities and among non-aligned ones.

In each estimation, I include a set of control variables. All variables in Euros are deflated using the consumption price index with base 2010 provided by INSEE. First, I control for the area of

[21]For estimations on grants from the district (respectively the province), I drop years of municipal elections and district elections (respectively province elections)

[22]For reasons explained in Subsection 2.2, I define the political affiliation of district councils and province councils as the affiliation of their President.

municipalities (in squared kilometers) and the total municipal population. These variables are indicators of the degree of urbanisation and may be an important determinant of infrastructure needs. Information on areas of municipalities comes from the National Institute of Geography (IGN) and information on total municipal population is provided by the French national census (produced by INSEE). Second, I control for the share of people aged 14 and less in the municipal population and the share of people aged 65 and over, as an important part of municipal services are in practice intended to young people (e.g. primary schools, cultural activities) and elderly people (e.g. aids towards low income retired people, retirement houses). These shares come from the French national census as well. Third, I take as control variables the average fiscal income of residents per unit of consumption[23] and the ratio between the median and the mean in terms of residents' fiscal income per unit of consumption. As municipalities are active in terms of social policy, the average income and the degree of inequalities may be important determinants of municipal public choices. These two control variables come from the "RFL" dataset (*dispositif Revenus Fiscaux Localisés des ménages*). It is provided by INSEE and contains for each municipality indicators on the distribution of residents' fiscal income. Fourth, I control for per capita municipal investment spending. Finally, as an upper council's decision to give a grant to a municipality is likely to depend on other resources the municipality has to face its investment expenditures, I control for the following variables. I include in my regressions the fiscal potential per capita. The fiscal potential is the sum of all local tax bases multiplied by the average tax rate over the territory. In other words, it is the amount of revenues a municipality could get if it decides to apply average tax rates. I compute this variable using the "REI" database (DGFiP, French Ministry of Economy and Finance). This administrative file provides information on local tax bases and local tax rates. Section D in Appendix gives a description of local taxes municipalities can levy. I also control for investment grants other than discretionary grants from the examined upper tier and transfers of infrastructures (e.g. donations). These amounts are expressed in Euros per capita. They come from the same database on local public accounts mentioned above (which contains information on grants). I do not control for a right-wing or left-wing dummy. For the multiple offices effect, this is not an issue. I run separate regressions for aligned municipalities and non-aligned ones and I put an upper council fixed effect. Thus, such a dummy would be perfectly collinear with my other regressors (see Section 4 for details on my empirical specifications). For the alignment effect, I decide not to include such a dummy because it would be colinear with alignment, as 63.78% of municipalities are in left-wing districts[24] and 97.81% are in left-wing provinces.

Table 4 provides a broad picture of my sample during the whole period I study (2004-2010)

[23]The number of consumption units is a measure of households size used by INSEE. It takes into account economies of scale in consumption needs according to household's size. The rule is the following: one unit for the first adult, 0.5 unit per other individual who is 14 or more and 0.3 unit per child below 14.

[24]Although I prefer not to include this dummy for alignment with the district in results presented in this paper, I ran regressions on alignment with the district with a left-wing dummy. Results almost do not change. They are available upon request.

and after all sample restrictions mentioned above[25]. I have a database of 15,255 observations. This corresponds to an average of 2,179 observations per year. Municipalities of my sample have a total population which varies between 2,970 inhabitants[26] and 99,660 inhabitants[27]. Municipalities receive 20.40 Euros per head of discretionary investment grants from districts. Grants from provinces are lower, with an average amount of 8.15 Euros per head. Theses amounts may seem quite low, but they underestimate the importance of discretionary investment grants received by municipalities. As shown in Table 2, the sum of these transfers from all grantors represents 11.7% of municipal investment spending in 2010. Multiple office-holders are much more present in district councils than in province councils. 25% of mayors of my sample have a seat at the district level, whereas only 7% of them are province councillors. Even if I do not estimate whether province councils favour mayors who have a seat at the province level, it is important to have this share in mind because it will help to understand differences in results between alignment with the district and alignment with the province.

4 Identification strategy

4.1 The multiple offices effect

My aim is to know whether mayors who have concurrently a seat at the district level manage to get more funds from their district. The identification of this effect raises endogeneity issues. Holding multiple offices is likely to be correlated with some incumbents' characteristics. Mayors who also have an office in a district council may have more experience, as having responsibilities at the district level is usually a more advanced stage in political career processes than having municipal responsibilities. Moreover, multiple office-holders maybe managed to have more political responsibilities because they have more useful skills for politics (e.g. the ability to convince people). They can also use these skills to get grants for their municipality.

To deal with this issue, I use a Regression Discontinuity Design (RDD). I restrict my sample to municipalities whose mayor was candidate in the last district elections which took place in the

[25]As this table provides a picture of my sample during the whole studied period (2004-2010), it does not take into account restrictions on years of elections. Moreover, this table shows descriptive statistics on my"basic sample" in the sense that it does not take into account sample restrictions which are specific to an examined upper tier (the district for the multiple offices effect, the district or the province for the alignment effect). In other words, it does not take into account the dropping of the four center-wing districts mentioned above (because this restriction is not made for the study of the alignment with the province).

[26]The restriction on municipalities with more than 3,500 inhabitants consists in keeping municipalities in which applied electoral rules for municipal elections are those for municipalities with more than 3,500 inhabitants. Thus, the value of population used for this sample restriction is the one used by the French administration. This value is the last one known at the moment of the election. As explained in Section C in Appendix, the French census has been yearly only since 2006. Before this year, one census was produced every 8 years in average. For my estimations, I compute a value of population which varies each year (see Section C in Appendix). Nevertheless, values used by the administration can be lagged by some years, which explains that some municipalities of my sample do not fill the condition on population for some years. Moreover, a municipality with more than 3,500 inhabitants during an election can experience a decrease in population between two municipal elections.

[27]I drop from my sample biggest municipalities, with more than 100,000 inhabitants. Only 1.17% of municipalities are above this threshold and they increase a lot the dispersion of my estimations when I include controls.

Table 4: Summary statistics on the sample

	Mean	Std. dev.	Min	Max
Area in km^2	20.86	19.67	0.69	149.43
Municipal population (in thousands)	11.85	12.71	2.97	99.66
Share of municipal population aged 14 or less (in %)	18.76	2.89	8.39	29.82
Share of municipal population aged 65 and over (in %)	17.11	5.39	1.96	44.67
Average fiscal income (per UC) in thousands 2010 Euros[1]	21.36	5.08	10.71	70.64
Median/Average (fiscal income per UC)[2]	88.65	3.80	62.99	110.88
Municipal investment spending per head (in 2010 €)	490.36	287.98	23.22	2613.83
Left-wing municipality	0.49	0.50	0.00	1.00
Investment grants from districts per head (in 2010 €)	20.40	27.45	0.00	199.91
Investment grants from provinces per head (in 2010 €)	8.15	15.02	0.00	108.95
Alignment with the district	0.59	0.49	0.00	1.00
Alignment with the province	0.51	0.50	0.00	1.00
The mayor has an office at the district level	0.25	0.43	0.00	1.00
The mayor has an office at the province level	0.07	0.25	0.00	1.00
Nb. observations	15255			

This table provides a picture of my sample during the whole sample period (2004-2010). Hence, it does not take into account restrictions on years of elections. Moreover, this table shows descriptive statistics on my "basic sample" in the sense that it does not take into account sample restrictions which are specific to an examined upper tier (the district for the multiple offices effect, the district or the province for the alignment effect). In other words, it does not take into account the dropping of the four center-wing districts mentioned in the text (because this restriction is not made for the study of alignment with the province).

[1] This variable corresponds to the average fiscal income of municipal residents per unit of consumption. "Units of consumption" are a measure of households size used by INSEE (one unit for the first adult, 0.5 unit per other individual who is 14 or more and 0.3 unit per child below 14).

[2] This variable is the ratio between the median and the average of the fiscal income of municipal residents per unit of consumption. "Units of consumption" are a measure of households size used by INSEE (one unit for the first adult, 0.5 unit per other individual who is 14 or more and 0.3 unit per child below 14).

municipality[28]. Then, I compare municipalities whose mayor barely won in district elections with those whose mayor barely lost. Having or not a mayor who has a seat at the district level can be considered as random for these two groups of municipalities (see Lee & Lemieux, 2010). This method allows me to estimate a multiple offices effect getting rid of endogeneity problems.

To define these two groups, I need an *assignment variable*, which measures the margin to which a mayor won or lost district elections. I take the margin of victory of mayors in the last district elections which took place in the municipality. This margin is defined as the difference between the mayor's share of votes in the last round and the share of votes got by the second candidate (if the mayor won) or by the winner (if the mayor lost). By definition, a positive (respectively negative) margin of victory means that the mayor has an office (respectively no office) at the district level. A low and positive (respectively negative) value of this margin means that the mayor barely won (respectively barely lost) in last district elections. My main assumption is that mayors who won last district elections with a small margin and those who lost with a small margin are similar in terms of experience and political abilities.

As explained in Section 2, the two main local tiers of local government between the municipality and the Central State are the district (*le département*) and the province (*la région*). I do not estimate a multiple offices effect "with the province", while I estimate below the alignment effect with this upper tier. There are two reasons for it. First, only 7% of mayors of my sample have a seat at the province level. Thus, I would face a lack of observations to apply my RDD. Second, as my RDD on the margin of victory of mayors in upper elections aims at controlling for the experience and abilities of politicians, I need to use an *individual* margin of victory. However, the province ballot is a list system (see Subsection 2.2). Thus, it is really challenging to define such a margin for mayors who ran in province elections. Because the ballot for district elections is a first-past-the-post vote, there is not such an issue for estimating a multiple offices effect "with districts".

The impact of holding multiple offices may be different for mayors who are district councillors and aligned (i.e. in the district council's majority) than for mayors who are district councillors but non-aligned. Thus, I apply my empirical strategy to three different samples : the whole sample, aligned mayors and non-aligned mayors.

Figure 1 describes the timing between municipal elections and district elections. In this figure, the continuous line represents the sample period and the dashed line represents the period out of my analysis but during which there were elections in which some incumbents of my sample were elected. Years in bold and brackets are those I take for my estimations. As explained in Section 3, I drop from my sample years of elections.

I define holding multiple offices regardless of the timing between municipal and district elections. District elections in which the mayor was elected can be before last municipal elections, after, or at the same time. As explained in Subsection 2.2, only half of the seats are renewed in each district

[28] As explained in Subsection 2.2, each district election consists in renewing district councillors in only half of the *cantons*.

election. Thus, for a given year, multiple office-holders can be from two different district elections[29].

As explained in Lee & Lemieux (2010), there are different ways to estimate a treatment effect using a RDD. I use two of them. The first is running a Local Linear Regression. It consists in estimating on a restricted interval of the assignment variable two linear specifications in this assignment variable: one for treated municipalities and one for non-treated ones (the treatment being multiple office-holding). These two linear specifications are estimated in the same equation. If I denote MV_{it}^d the margin of victory of the mayor of municipality i in last district elections during the year t, the estimation is run for observations such that $MV_{it}^d \in [-h, h]$, where h is an optimal bandwidth. I take the optimal bandwidth defined by Imbens & Kalyanaraman (2012). The equation is the following:

$$G_{it}^d = \rho_0 + \rho_1 MV_{it}^d + \pi_0 MO_{it}^d + \pi_1 MO_{it}^d.MV_{it}^d + \mu_{dc} + \delta_t + \beta X_{ic_{md}-1} + \epsilon_{it} \quad (1)$$

G_{it}^d is the amount of discretionary investment grants per capita received by the municipality i from its district during the year t. MO_{it}^d is the dummy equal to one if the mayor i has concurrently an office in the district council during the year t. MV_{it}^d is the margin of victory of the mayor of municipality i in last district elections during the year t. My coefficient of interest is π_0. δ_t is a year fixed effect. μ_{dc} is a fixed effect at the level of the district and the political cycle in terms of district elections. A political cycle in terms of district elections is a period between two district elections. In other words, this is a "district council fixed effect" (by district council, I mean the territory of the council *and* the political composition of this council). Finally, $X_{ic_{md}-1}$ are covariates described in Section 3. The index $c_{md} - 1$ means that covariates are lagged by one political cycle, a cycle being a period between two elections (municipal or district elections). More precisely, I take for a given year the value covariates take during the year before last elections (municipal or district elections)[30]. I take these lagged terms in order not to have covariates affected by the treatment (here holding multiple offices). I do not include municipal fixed effects, because the multiple offices status is constant over time for the main part of municipalities[31]. Standard errors are clustered at the municipal level.

The second estimation I make is a polynomial specification. It consists in running a P^{th}-order polynomial function in the assignment variable (instead of a linear one) on both sides of the cut-off (the cut-off being at $MV_{it}^d = 0$) using the whole sample (the whole support of the margin of victory of mayors in last district elections)[32]. I run this specification for all polynomial orders between the

[29] For example, in 2005, multiple office-holders got their upper seat either in 2001 or in 2004.

[30] For example, I take for the year 2005 the value of covariates in year 2003. See Figure 1 for a picture of the timing between municipal and district elections.

[31] 91.13% of municipalities have a constant multiple offices status over my sample period (2004-2010). I compute these shares by taking into account only municipalities I have in my two political cycles (2005-2007 and 2009-2010). Given sample restrictions I make to estimate the multiple offices effect, some municipalities are in my sample for only one cycle. 38.08% of municipalities are in this case.

[32] I use the whole support of the margin of victory, except extreme values for which the dispersion in terms of grants is very high and which may influence substantially the shape of my estimated function. I drop observations for which the absolute value of the margin of victory is higher than 40 percentage points.

first and the fourth, and I choose a best polynomial order according to a goodness-of-fit test (see Section 5). The equation is the following:

$$G_{it}^{d} = \sum_{k=0}^{P} \left(\rho_k (MV_{it}^{d})^k \right) + \sum_{k=0}^{P} MO_{it}^{d} \left(\pi_k (MV_{it}^{d})^k \right) + \mu_{dc} + \delta_t + \beta X_{ic_{md}-1} + \epsilon_{it} \quad (2)$$

4.2 The alignment effect

I estimate the effect of alignment with the district *and* the effect of alignment with the province. My dependent variable is respectively the amount of grants from districts and the amount of grants from provinces. Estimating the effect of alignment with the district allows me to see whether the effect of alignment in this context of multiple office-holding is similar to what the previous literature has found. Then, looking at the effect of alignment with the province allows me to know how alignment matters in a context in which holding multiple offices is less frequent (only 7% of mayors of my sample have a seat at the province level, while 25% of them are district councillors).

Estimating an alignment effect raises a problem of endogeneity as well. Being aligned or not can be correlated with other characteristics. For example, in left-wing districts, having an aligned mayor would be correlated with common characteristics among left-wing municipalities. To correct for this, I use again a Regression Discontinuity Design. It consists in comparing municipalities in which the first aligned candidate barely won in last municipal elections to those in which he barely lost.

I need an *assignment variable*, which measures the margin to which a municipality is aligned or not. As it is made in Brollo & Nannicini (2012) and Bracco et al. (2014), I define the *alignment margin* as the difference between the share of votes obtained by the first aligned candidate in the last round of last municipal elections and the share of votes of the first non-aligned candidate. By definition, a positive (respectively negative) alignment margin means that the municipality is aligned (respectively non-aligned). A low and positive (respectively negative) value of this margin means that the first aligned candidate barely won (respectively barely lost) in last municipal elections.

I have to make some sample restrictions which are specific to the estimation of the alignment effect. As explained in Section 3, I kept in my sample only left-wing and right-wing municipalities. In addition to this, I have to keep only municipalities in which the second candidate in last municipal elections was right-wing if the winner is left-wing, and left-wing if the winner is right-wing. In other words, I have to keep municipality whose alignment status would have changed if the second candidate had won[33].

Figure 1 describes the timing between municipal elections and district elections (see Subsec-

[33] An alternative would be to take municipalities whose second candidate had a different political affiliation than the winner. This would imply to have politicians of the five categories of political affiliation among second candidates (see Subsection 2.4 for a definition of these affiliations). As explained in Section 3, this alternative would induce a political heterogeneity in non-aligned second candidates among aligned municipalities.

tion 4.1). Figure 2 provides the same information for the timing between municipal elections and province elections. As I made for the definition of holding multiple offices, I define the alignment status regardless of the timing between municipal and upper elections (upper elections can be before municipal elections, after, or at the same time). A municipality is defined as aligned in year t if the political affiliation of the municipality after last municipal elections is the same as the political affiliation of the upper council after last upper elections. The alignment margin of a municipality in a given year is computed with results of the last municipal elections. The fact that only half of the seats are renewed in each district elections[34] may not be an issue, since the political affiliation of the district can change after each district election.

Similarly to the estimation of the multiple offices effect, I estimate first a Local Linear Regression. This estimation is made on a restricted interval of the alignment margin around the cut-off. For $u = d, p$ (d for districts and p for provinces), the equation is the following:

$$G_{it}^{u} = \rho_0 + \rho_1 MA_{it}^{u} + \pi_0 AL_{it}^{u} + \pi_1 AL_{it}^{u}.MA_{it}^{u} + \mu_{uc} + \delta_t + \beta X_{ic_{mu}-1} + \epsilon_{it} \tag{3}$$

AL_{it}^{d} (respectively AL_{it}^{p}) is a dummy equal to one if the municipality i has the same political affiliation as its district (respectively its province) during the year t. MA_{it}^{d} (respectively MA_{it}^{p}) is the alignment margin of the municipality i during the year t regarding the alignment with the district (respectively the province). All other notations are the same as previously (see Subsection 4.1)[35]. As for the estimation of the multiple offices effect, I do not include municipal fixed effects, because the alignment status is constant over time for the main part of municipalities[36].

Secondly, I estimate P^{th}-order polynomial specification, using the whole support of the assignment variable (here the alignment margin)[37]. As for the estimation of the multiple offices effect, I run this specification for all polynomial orders between the first and the fourth, and I choose a best polynomial order according to a goodness-of-fit test (see Section 5). The estimated equation is (for $u = d, p$):

$$G_{it}^{u} = \sum_{k=0}^{P} \left(\rho_k (MA_{it}^{u})^k\right) + \sum_{k=0}^{P} AL_{it}^{u} \left(\pi_k (MA_{it}^{u})^k\right) + \mu_{uc} + \delta_t + \beta X_{ic_{mu}-1} + \epsilon_{it} \tag{4}$$

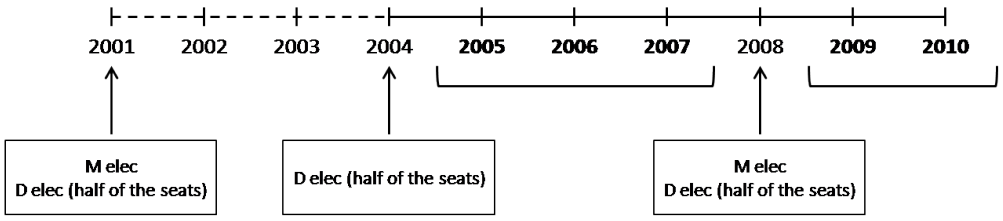
[34] See Subsection 2.2 for more details.

[35] For alignment with the province, these notations are similar to those used for alignment with the district: G_{it}^{p} is the amount of discretionary investment grants per capita received by the municipality i from its province during the year t, μ_{pc} is a province council fixed effect and $X_{ic_{mp}-1}$ are covariates lagged by one political cycle, a cycle being a period between two elections (municipal or province elections).

[36] 72.71% (respectively 89.12%) of municipalities have a constant alignment status with their district (respectively with their province) over the sample period (2004-2010). I compute these shares by taking into account only municipalities I have in my two political cycles (2005-2007 and 2009-2010 for alignment with the district, 2005-2007 and 2009 for alignment with the province). Given sample restrictions I make to estimate the alignment effect, some municipalities are in my sample for only one cycle. 28.72% (respectively 15.87%) of municipalities are in this case for alignment with districts (respectively with provinces).

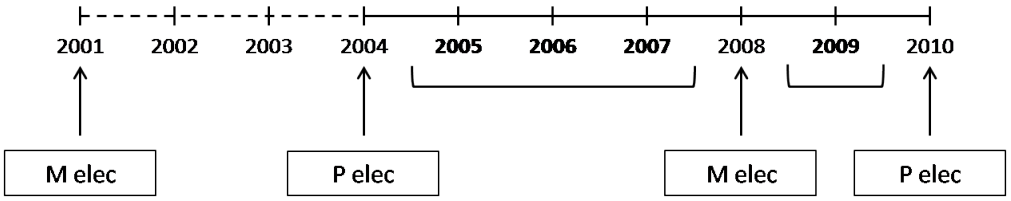
[37] I use the whole support of the alignment margin, except extreme values for which the dispersion in terms of grants is very high and which may influence substantially the shape of my estimated polynomial function. For the alignment with the district (respectively the province), I drop observations for which the absolute value of the alignment margin is strictly higher than 40 percentage points (respectively 50 percentage points).

Figure 1: The timing between municipal elections and district elections



This figure shows the timing of municipal elections (denoted "M elec") and district elections (denoted "D elec"). As explained in Section 2, each district election consists in renewing only half of the seats. The dashed line represents years which are out of my sample period but during which there were elections in which some incumbents of my sample were elected. Years in bold and brackets are those included in my estimations. As explained in this Section 3, I exclude years of elections from my sample.

Figure 2: The timing between municipal elections and province elections



This figure shows the timing of municipal elections (denoted "M elec") and province elections (denoted "P elec"). The dashed line represents years which are out of my sample period but during which there were elections in which some incumbents of my sample were elected. Years in bold and brackets are those included in my estimations. As explained in Section 3, I exclude years of elections from my sample.

5 Results

5.1 The multiple offices effect

Table 5 presents point estimates for the multiple offices effect "with districts". The two first columns show results of local linear regressions (which correspond to equation (1)), with the optimal bandwidth defined by Imbens & Kalyanaraman (2012). The two last columns show results of polynomial estimations (which correspond to equation (2)), taking the "best polynomial order" between the 1^{st} and the 4^{th}. Following Lee & Lemieux (2010), I choose this best order by applying the goodness-of-fit test. This test consists in adding in the polynomial specification dummies for each bin in the assignment variable (the used bin width is 0.025). Then, I jointly test the significance of these dummies. The idea is to add a higher polynomial order until bin dummies are no longer jointly significant[38]. Table 5 shows results for three samples: the whole sample, aligned municipalities and non-aligned municipalities. Figures 3a, 3b and 3c provide a graphical illustration of results for these three samples. They show for each sample the estimated local linear functions.

According to Table 5, there is a huge multiple offices effect concentrated on aligned municipalities. The coefficient on holding multiple offices estimated on the whole sample has a low significance overall. It is significant at the 10% level for the local linear regression without controls. This significance is not robust to the inclusion of controls. However, this coefficient is strongly significant when I restrict my sample to aligned municipalities, whatever the specification. The value of the

[38]See Table 6 which contains results for all polynomial orders, with the p-value of the goodness-of-fit test for each of them.

coefficient on the multiple offices dummy is high relatively to the average amount of investment grants per capita from districts. When I include all controls, aligned municipalities whose mayor is a district councillor receive from districts about 20 Euros per head more than other aligned municipalities. This amount is equal to the average amount of grants per head municipalities receive from their district (see Table 4). Thus, aligned mayors who have a seat at the district level get at least *double* the amount of funds received by other aligned mayors. Figure 3b gives a graphical illustration of this result. There is on both side of the cut-off a decreasing slope. However, regarding confidence intervals, this pattern is not significant.

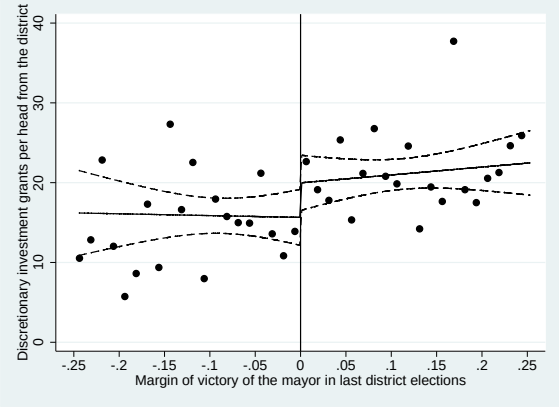
As for the subsample of non-aligned municipalities, the coefficient on the multiple offices dummy is never significant. These mayors have a seat at the district level but they are not in the district council's majority. This may be why they seem to have no power on the allocation of grants. This non-significance allows me to exclude interpretations in terms of information on grants application for the strong multiple offices effect among aligned municipalities. Mayors who have concurrently a seat at the district level may have better information on applications for grants (e.g. they know the existence of these grants, what is a good application for the district council, etc.). This could explain why they manage to get more funds. However, if the strong effect on the subsample of aligned municipalities were driven by this channel, I would get the same results for non-aligned municipalities.

Therefore, the strong multiple offices effect on the subsample of aligned municipalities suggests a key importance of connections in the allocation of intergovernmental grants. An aligned mayor who has an office at the district level knows other district councillors and is in the district council's majority. District councillors of the majority may want to favour their colleague to keep him in their network (which can be useful for them in the future). Moreover, aligned multiple office-holders may communicate more in favour of the district council's policy in their jurisdiction and make easier the carrying out of common projects between their municipality and the district. Thus, favouring these incumbents may be very profitable for district councils. Furthermore, an important issue on intergovernmental grants is that voters may attribute most of the reward from these grants to the recipient (here the mayor) and not to the grantor (here the district council). This attribution can be a cost for the district if the recipient is a political opponent (i.e. from another party). It can also have a cost even if the recipient is aligned. If an aligned mayor has no seat at the district level, voters may attribute the reward to the *individual* (the local incumbent) and not implicitly to his political party. In case of an aligned multiple office-holders, the mayor and the district councillor are *the same person* and this person is in the district council's majority. Therefore, giving grants to such politicians may offer high political returns to the district council. Finally, an aligned mayor who has a seat at the district level may use his right of vote in this upper council to favour his municipality. However, from my point of view, this explanation is not relevant because in any case, other councillors have to be convinced by the allocation of grants.

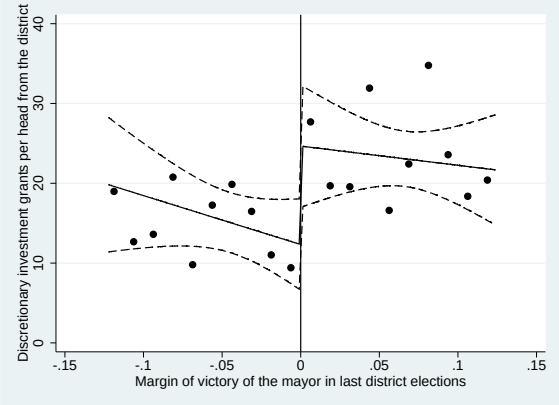
Table 6 show robustness checks. The two first columns show results of local linear regressions

with alternative bandwidths (half and double the optimal bandwidth defined by Imbens & Kalyanaraman, 2012). The four last columns present results of polynomial estimations for all orders between 1 and 4 (each column corresponds to a specific order). My results on the multiple offices effect seem robust. For the sample of aligned municipalities, the coefficient on multiple office-holding is positive and significant whatever the bandwidth for local linear regressions, or the polynomial order. As for non-aligned municipalities, multiple office-holding seems to have no effect whatever the alternative specification Table 6 presents.

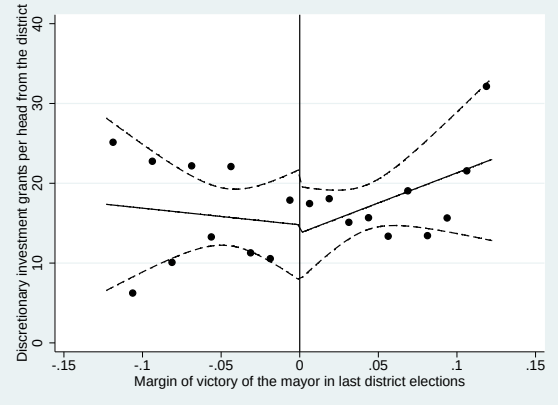
Figure 3: The multiple offices effect (with the district) - graphics from local linear regressions



(a) *Whole sample*



(b) *Aligned municipalities*



(c) *Non-aligned municipalities*

These figures show for my three samples (the whole sample, the subsample of aligned municipalities and the one of non-aligned municipalities) linear curves which come from local linear regressions (equation (1)) without controls (i.e. without covariates, years fixed effects and district councils fixed effects). The bandwidth is the optimal one defined by Imbens & Kalyanaraman (2012). Each figure contains 95% confidence intervals. Each dot represents the average of discretionary investment grants from districts in a bin in the margin of victory of mayors in district elections of width 0.0125.

Table 5: The multiple offices effect (with the district)

	Dependent variable: discretionary investment grants per head from districts			
	Local linear regression	Local linear regression	Polynomial estimation	Polynomial estimation
		Whole sample		
Multiple offices effect	4.34*	3.54	10.28*	7.98*
	(2.52)	(2.37)	(5.37)	(4.65)
Bandwidth	0.253	0.253		
Best polynomial order			4^{th}	4^{th}
Fixed effects and controls[1]	No	Yes	No	Yes
R-squared	0.01	0.23	0.38	0.53
Nb. Obs	2181	2181	2977	2977
		Aligned municipalities		
Multiple offices effect	12.33**	18.24***	16.60**	22.28***
	(4.86)	(4.35)	(7.74)	(6.03)
Bandwidth	0.125	0.125		
Best polynomial order			4^{th}	4^{th}
Fixed effects and controls[1]	No	Yes	No	Yes
R-squared	0.02	0.33	0.41	0.60
Nb. Obs	644	644	1797	1797
		Non-aligned municipalities		
Multiple offices effect	-1.03	-8.70	6.56	-2.94
	(4.63)	(5.99)	(6.51)	(6.37)
Bandwidth	0.123	0.123		
Best polynomial order			4^{th}	4^{th}
Fixed effects and controls[1]	No	Yes	No	Yes
R-squared	0.01	0.31	0.34	0.46
Nb. Obs	541	541	1180	1180

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses are clustered at the municipal level.

The two first columns show estimations of equation (1). The bandwidth is the optimal one defined by Imbens & Kalyanaraman (2012). The two last columns represent estimations of equation (2). The chosen polynomial order is the best one between 1 and 4 according to the goodness-of-fit test (see Table 6 for estimations of all orders which contains the p-value of the test for each order). This best order is the 4^{th} one in any case (for the three samples, without and with controls). The bin width used for the test is 0.025.

[1] Fixed effects and controls include lagged covariates described in Section 3, years fixed effects and district councils fixed effects (i.e. terms $X_{ic_{md-1}}$, δ_t and μ_{dc} in equations (1) and (2)).

Table 6: The multiple offices effect (with the district) - robustness checks

	Dependent variable: discretionary investment grants per head from districts					
	Local linear regressions		Polynomial specifications			
	0.5*(Opt bwth)	2*(Opt bwth)	1st order	2nd order	3rd order	4th order
			Whole sample			
Multiple offices effect	6.43*	5.53**	5.89***	5.72*	7.82*	10.28*
	(3.50)	(2.18)	(2.25)	(3.11)	(4.28)	(5.37)
Fixed effects and controls[1]	No	No	No	No	No	No
Bandwidth	0.127	0.506				
P-value goodness-of-fit test			0.001	0.000	0.000	0.000
R-squared	0.01	0.01	0.38	0.38	0.38	0.38
Nb. Obs	1199	3212	2977	2977	2977	2977
Multiple offices effect	6.51**	5.20**	5.18**	5.44*	8.36**	7.98*
	(3.21)	(2.04)	(2.09)	(2.86)	(3.83)	(4.65)
Fixed effects and controls[1]	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	0.127	0.506				
P-value goodness-of-fit test			0.056	0.023	0.015	0.003
R-squared	0.26	0.24	0.53	0.53	0.53	0.53
Nb. Obs	1199	3212	2977	2977	2977	2977
			Aligned municipalities			
Multiple offices effect	16.19**	8.58**	8.51***	10.35**	15.31**	16.60**
	(7.70)	(3.71)	(3.20)	(4.52)	(6.00)	(7.74)
Fixed effects and controls[1]	No	No	No	No	No	No
Bandwidth	0.062	0.249				
P-value goodness-of-fit test			0.000	0.000	0.000	0.000
R-squared	0.03	0.01	0.41	0.41	0.41	0.41
Nb. Obs	358	1223	1797	1797	1797	1797
Multiple offices effect	19.17***	9.62***	11.36***	13.19***	18.83***	22.28***
	(6.70)	(3.38)	(2.65)	(3.72)	(4.87)	(6.03)
Fixed effects and controls[1]	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	0.062	0.249				
P-value goodness-of-fit test			0.090	0.006	0.009	0.012
R-squared	0.40	0.30	0.60	0.60	0.60	0.60
Nb. Obs	358	1223	1797	1797	1797	1797
			Non-aligned municipalities			
Multiple offices effect	4.13	0.29	2.58	0.88	-1.94	6.56
	(5.57)	(3.11)	(3.00)	(3.70)	(5.21)	(6.51)
Fixed effects and controls[1]	No	No	No	No	No	No
Bandwidth	0.062	0.247				
P-value goodness-of-fit test			0.000	0.000	0.000	0.000
R-squared	-0.01	0.00	0.34	0.34	0.34	0.34
Nb. Obs	316	936	1180	1180	1180	1180
Multiple offices effect	-3.12	0.66	-0.13	-1.75	-3.43	-2.94
	(6.21)	(3.28)	(3.01)	(3.77)	(5.31)	(6.37)
Fixed effects and controls[1]	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	0.062	0.247				
P-value goodness-of-fit test			0.030	0.034	0.041	0.033
R-squared	0.23	0.19	0.47	0.47	0.46	0.46
Nb. Obs	316	936	1180	1180	1180	1180

* p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses are clustered at the municipal level.
The two first columns of this table show for my three samples (the whole sample, aligned municipalities and non-aligned ones) estimations of equation (1) for half and double the optimal bandwidth defined by Imbens & Kalyanaraman (2012). The four last columns show for the same samples estimations of equation (2) for all polynomial orders between one and four. They show the p-value of the goodness-of-fit test for each estimation. This is the criterion I use to choose the best polynomial order. The bin width used for the test is 0.025.
[1] Fixed effects and controls include lagged covariates described in Section 3, years fixed effects and district councils fixed effects (i.e. terms $X_{ic_{md}-1}$, δ_t and μ_{dc} in equations (1) and (2)).

5.2 The alignment effect

Table 7 presents point estimates for the alignment effect with districts on grants provided by this upper tier. Its format is similar to Table 5. The two first columns show results of local linear regressions (which correspond to equation (3)), with the optimal bandwidth defined by Imbens & Kalyanaraman (2012). The two last columns show results of polynomial estimations (which correspond to equation (4)). The chosen polynomial order is the best one between 1 and 4 according to the goodness-of-fit test[39]. Figure 4 provides a graphical illustration of these results.

There is only *weak* evidence of an alignment effect on investment grants municipalities receive from their district. For local linear regressions, the coefficient on the alignment dummy is significant only at the 10% level. This is graphically represented in Figure 4. The weakness of the alignment effect with districts is better illustrated in Table 8. It shows results of local linear regressions with alternative bandwidths and polynomial estimations for all orders between 1 and 4 (its format is similar to Table 6). For local linear regressions, the significance of the alignment effect is not robust to half the optimal bandwidth (with or without controls). For polynomial regressions, the coefficient on the alignment dummy is significant only for the first-order polynomial specification after including all controls.

Whatever the level of significance of this coefficient, its value is not high relatively to the existing literature. Being aligned would allow a municipality to receive about three Euros more per head, which is 14.7% of the mean of grants per inhabitant received from districts[40]. This weak evidence of an alignment effect on intergovernmental grants contrasts with all the existing literature on this issue.

The picture is different for the alignment effect with *provinces*. Table 9 and Figure 5 present results for this effect. Their format is similar to the one of Table 7 and Figure 4 respectively. The coefficient on alignment with provinces is positive and significant at the 5% level for all specifications presented in Table 9. The value of these coefficients is high relatively to the average amount of grants per head municipalities receive from provinces (which is 8.15 euros as shown in Table 4). For alignment with provinces, I provide in Figure 6 a graphical representation of *polynomial* estimations, because it reveals an interesting pattern. This figure shows a huge decrease in grants from provinces just on the left of the cut-off. While aligned municipalities do not seem to be favoured, non-aligned municipalities in which the non-aligned candidate barely won seem to be strongly punished. In other words, province councillors seem to punish non-aligned municipalities in which the aligned party has relatively many chances to win in next municipal elections. If a non-negligible share of the reward of grants is attributed by voters to the recipient (here, the mayor), such a punishment may weaken his popularity. This finding is consistent with Brollo & Nannicini (2012).

[39] See Table 8 which contains results for all polynomial orders, with the p-value of the goodness-of-fit test for each of them.

[40] According to the existing literature, aligned municipalities get between 16% and 47% more grants than non-aligned ones. See Solé-Ollé & Sorribas-Navarro (2008), Arulampalam et al. (2009), Brollo & Nannicini (2012) and Bracco et al. (2014).

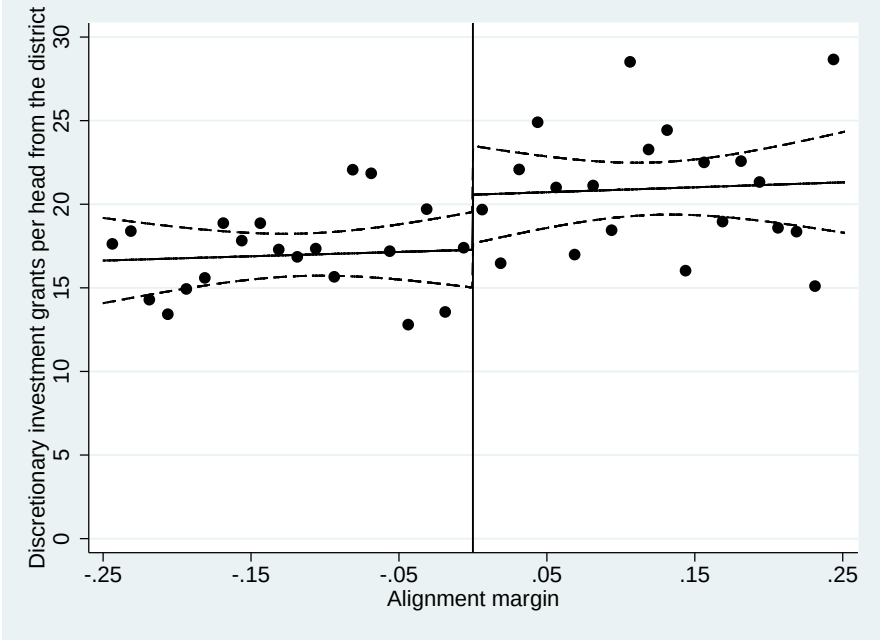
Given the shape of the curve in Figure 6, it is not surprising that local linear regressions give lower coefficients than polynomial specifications. The huge decrease on the left of the cut-off appears only for the last dot, whose bin is 0.025. This bin is lower than the optimal bandwidth (which is equal to 0.112). To give a quantification of this punishment towards "non-aligned swing municipalities", I take on the coefficient of the polynomial estimation with the inclusion of all controls. Non-aligned swing municipalities seem to receive 3.95 Euros per head less than aligned swing municipal jurisdictions. This is equivalent to a decrease of 48.5% with respect to the average amount of grants per capita received from provinces. To my knowledge, this effect is high relatively to those in the previous literature on political alignment[41].

As for robustness checks, Table 10 shows results of local linear regressions with alternative bandwidths and polynomial estimations for all orders between 1 and 4 (its format is similar to Table 6). The significance of the alignment effect with provinces is robust to the 3rd and the 4th orders after the inclusion of all controls. The non-significance for the 1st and the 2nd orders is not surprising given the shape of the curve in Figure 6. Such a shape (with a huge decrease in grants for low and negative alignment margins) is unlikely to be captured by these two polynomial orders. As for local linear regressions, since the decrease in grants on the left of the cut-off shown in Figure 6 is concentrated on the last dot before the cut-off (whose bin is equal to 0.025), the size and the significance of the alignment effect vary with the bandwidth. However, the significance is always preserved. The wider the bandwidth is, the lower the size and the significance are.

Why is evidence on alignment with districts weak whereas alignment with provinces seems to strongly matter? Maybe this is linked to the strong effects I have on holding multiple offices among aligned municipalities. As explained above, targeting aligned multiple office-holders may be very profitable for district councils (probably more profitable than targeting aligned municipalities). This may be the case for province councils as well. However, only 7% of mayors of my sample have responsibilities at the province level, whereas the similar share for district councils is 25%. Thus, districts *can* focus only on holding multiple offices, contrary to province councils. Even if the kind of discrimination I observe on alignment with the province has no financial costs (because it consists in giving less grants to a group of municipalities), it may present a risk (e.g. denunciation by discriminated mayors) district councils may not want to take because potential returns are lower than focusing on the high number of multiple office-holders.

[41] According to the existing literature, aligned municipalities get between 16% and 47% more grants than non-aligned ones. See Solé-Ollé & Sorribas-Navarro (2008), Arulampalam et al. (2009), Brollo & Nannicini (2012) and Bracco et al. (2014).

Figure 4: The effect of alignment with the district - graphic from local linear regressions



This figure shows linear curves which come from local linear regressions (equation (3)) without controls (i.e. without covariates, years fixed effects and district councils fixed effects). The bandwidth is the optimal one defined by Imbens & Kalyanaraman (2012). This figure contains as well 95% confidence intervals. Each dot represents the average of discretionary investment grants from districts in a bin in alignment margin of width 0.0125.

Table 7: The effect of alignment with the district

	Dependent variable: discretionary investment grants per head from districts			
	Local linear regression	Local linear regression	Polynomial estimation	Polynomial estimation
Alignment effect	3.30*	2.69*	3.16**	2.64**
	(1.77)	(1.51)	(1.49)	(1.23)
Bandwidth	0.251	0.251		
Best polynomial order			1^{st}	1^{st}
Fixed effects and controls[1]	No	Yes	No	Yes
R-squared	0.01	0.24	0.36	0.51
Nb. Obs	4508	4508	6414	6414

* p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses are clustered at the municipal level.

The two first columns show estimations of equation (3). The bandwidth is the optimal one defined by Imbens & Kalyanaraman (2012). The two last columns represent estimations of equation (4). The chosen polynomial order is the best one between 1 and 4 according to the goodness-of-fit test (see Table 8 for estimations of all orders which contains the p-value of the test for each order). This best order is the 1^{st} one in any case (without and with controls). The bin width used for the test is 0.025.

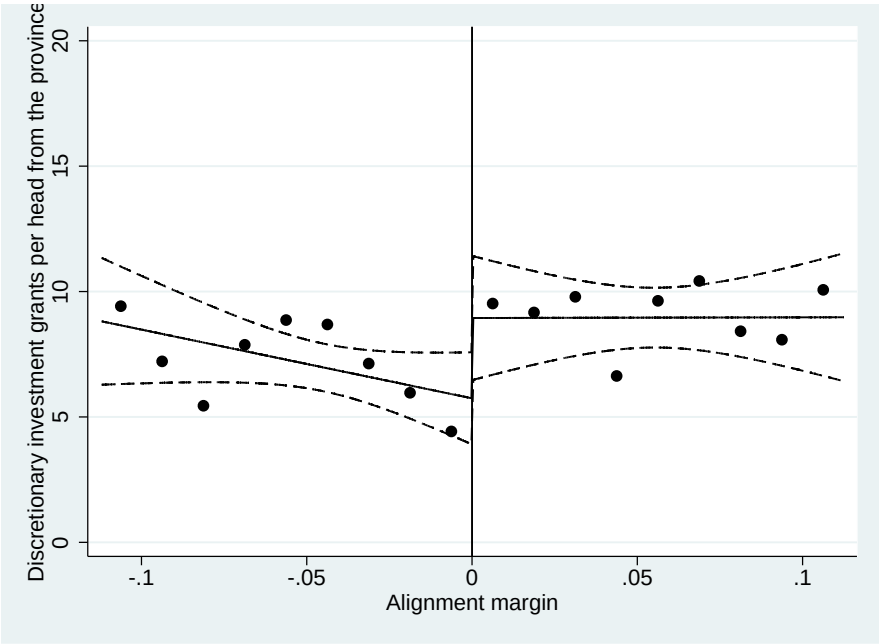
[1] Fixed effects and controls include lagged covariates described in Section 3, years fixed effects and district councils fixed effects (i.e. terms $X_{ic_{mu}-1}$, δ_t and μ_{uc} in equations (3) and (4)).

Table 8: The effect of alignment with the district - robustness checks

	Dependent variable: discretionary investment grants per head from districts					
	Local linear regressions		Polynomial specifications			
	0.5*(Opt bwth)	2*(Opt bwth)	1st order	2nd order	3rd order	4th order
Alignment effect	3.26	3.72***	3.16**	3.65*	3.89	3.79
	(2.68)	(1.40)	(1.49)	(2.13)	(3.03)	(4.04)
Fixed effects and controls[1]	No	No	No	No	No	No
Bandwidth	0.126	0.502				
P-value goodness-of-fit test			0.712	0.401	0.495	0.436
R-squared	0.01	0.01	0.36	0.36	0.36	0.36
Nb. Obs	2512	7109	6414	6414	6414	6414
Alignment effect	2.60	3.50***	2.64**	2.86	2.81	3.37
	(2.41)	(1.13)	(1.23)	(1.83)	(2.60)	(3.42)
Fixed effects and controls[1]	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	0.126	0.502				
P-value goodness-of-fit test			0.574	0.408	0.522	0.245
R-squared	0.25	0.25	0.51	0.51	0.51	0.51
Nb. Obs	2512	7109	6414	6414	6414	6414

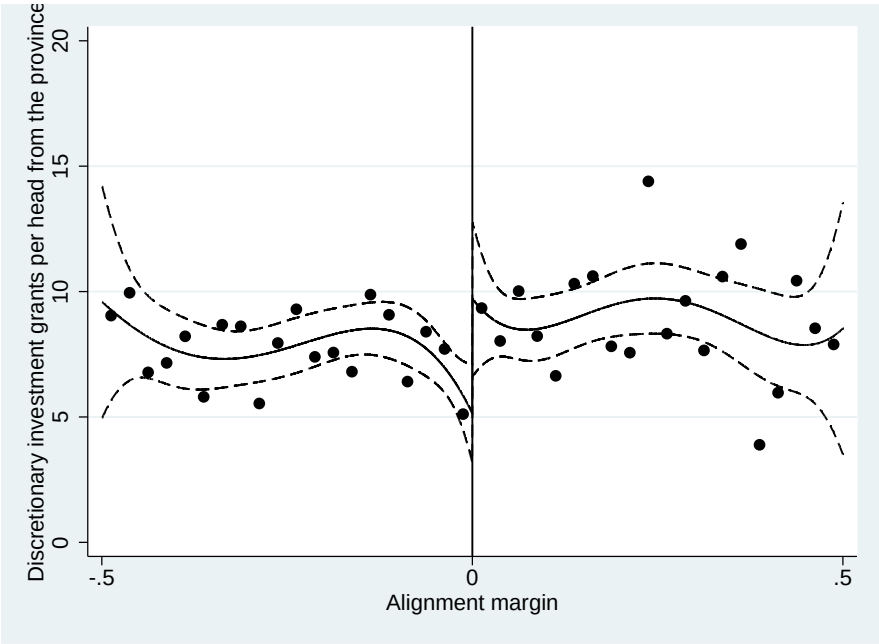
* p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses are clustered at the municipal level.
The two first columns of this table show estimations of equation (3) for half and double the optimal bandwidth defined by Imbens & Kalyanaraman (2012). The four last columns represent estimations of equation (4) for all polynomial orders between one and four. They show the p-value of the goodness-of-fit test for each estimation. This is the criterion I use to choose the best polynomial order. The bin width used for the test is 0.025.
[1] Fixed effects and controls include lagged covariates described in Section 3, years fixed effects and district councils fixed effects (i.e. terms $X_{ic_{mu}-1}$, δ_t and μ_{uc} in equation (3) and (4)).

Figure 5: The effect of alignment with the province - graphic from local linear regressions



This figure shows linear curves which come from local linear regressions (equation (3)) without controls (i.e. without covariates, years fixed effects and province councils fixed effects). The bandwidth is the optimal one defined by Imbens & Kalyanaraman (2012). This figure contains as well 95% confidence intervals. Each dot represents the average of discretionary investment grants from provinces in a bin in alignment margin of width 0.0125.

Figure 6: The effect of alignment with the province - graphic from polynomial specifications



This figure shows the polynomial curve which comes from the estimation of equation (4) without controls (i.e. without covariates, years fixed effects and province councils fixed effects). The chosen polynomial order is the best one between 1 and 4 according to the goodness-of-fit test (see Table 10 for estimations of all orders which contains the p-value of the test for each order). Here, this order is the 4^{th} one. The bin width used for the test is 0.025. This figure contains as well 95% confidence intervals. Each dot represents the average of discretionary investment grants from provinces in a bin in alignment margin of width 0.025.

Table 9: The effect of alignment with the province

	Dependent variable: discretionary investment grants per head from provinces			
	Local linear regression	Local linear regression	Polynomial estimation	Polynomial estimation
Alignment effect	3.20**	3.16**	4.58**	3.95**
	(1.57)	(1.46)	(1.86)	(1.72)
Bandwidth	0.112	0.112		
Best polynomial order			4^{th}	4^{th}
Fixed effects and controls[1]	No	Yes	No	Yes
R-squared	0.00	0.06	0.24	0.30
Nb. Obs	1874	1874	5847	5847

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses are clustered at the municipal level.

The two first columns show estimations of equation (3). The bandwidth is the optimal one defined by Imbens & Kalyanaraman (2012). The two last columns represent estimations of equation (4). The chosen polynomial order is the best one between 1 and 4 according to the goodness-of-fit test (see Table 10 for estimations of all orders which contains the p-value of the test for each order). This order is the 4^{th} one in any case (without and with controls). The bin width used for the test is 0.025.

[1] Fixed effects and controls include lagged covariates described in Section 3, years fixed effects and province councils fixed effects (i.e. terms $X_{ic_{mu}-1}$, δ_t and μ_{uc} in equations (3) and (4)).

Table 10: The effect of alignment with the province - robustness checks

	Dependent variable: discretionary investment grants per head from provinces					
	Local linear regressions		Polynomial specifications			
	0.5*(Opt bwth)	2*(Opt bwth)	1st order	2nd order	3rd order	4th order
Alignment effect	5.95***	2.05*	1.65**	1.47	3.44**	4.58**
	(2.04)	(1.10)	(0.81)	(1.14)	(1.51)	(1.86)
Fixed effects and controls[1]	No	No	No	No	No	No
Bandwidth	0.056	0.224				
P-value goodness-of-fit test			0.001	0.001	0.003	0.008
R-squared	0.01	0.00	0.24	0.24	0.24	0.24
Nb. Obs	1006	3388	5847	5847	5847	5847
Alignment effect	5.67***	1.94*	1.26	1.56	3.21**	3.95**
	(1.84)	(1.04)	(0.77)	(1.07)	(1.40)	(1.72)
Fixed effects and controls[1]	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	0.056	0.224				
P-value goodness-of-fit test			0.030	0.028	0.029	0.036
R-squared	0.08	0.08	0.30	0.30	0.30	0.30
Nb. Obs	1006	3388	5847	5847	5847	5847

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses are clustered at the municipal level.
The two first columns of this table show estimations of equation (3) for half and double the optimal bandwidth defined by Imbens & Kalyanaraman (2012). The four last columns represent estimations of equation (4) for all polynomial orders between one and four. They show the p-value of the goodness-of-fit test for each estimation. This is the criterion I use to choose the best polynomial order. The bin width used for the test is 0.025.
[1] Fixed effects and controls include lagged covariates described in Section 3, years fixed effects and province councils fixed effects (i.e. terms $X_{ic_{mu}-1}$, δ_t and μ_{uc} in equation (3) and (4)).

6 Validity tests

To be valid, my regression discontinuity designs have to fill two conditions. First, the distribution of the assignment variable has to be continuous at the cut-off. A discontinuity would mean that the assignment variable can be manipulated. In such a case, being treated or not could not be considered as random. For example, a positive discontinuity at the cut-off in the distribution of the margin of victory of mayors in district elections would mean that results of these elections are rigged. To do this test, I apply the procedure presented by McCrary (2008)[42]. Figures 7a, 7b and 7c show for the three samples used for the estimation of the multiple offices effect (the whole sample, aligned municipalities and non-aligned municipalities) the estimated density of the margin of victory of mayors in district elections. Whatever the sample, I cannot reject the null hypothesis of zero discontinuity at the cut-off. The distribution of the margin of victory is not centered at zero for the sample of aligned municipalities. On average, aligned mayors are more likely to win district elections than to lose. However, this is not an issue. The only issue would be a discontinuity at the cut-off and there is no evidence of it. Figure 8a shows the test for no discontinuity of the alignment margin related to the alignment with the district. Figure 8b shows the same test for the alignment with the province. According to these two Figures, I cannot reject the null hypothesis of zero discontinuity at the cut-off for both alignment margins.

Second, I have to ensure that municipalities just below and above the cut-off are similar. One way to test for it is to check whether there is no discontinuity in some covariates at the cut-off. As suggested in Lee & Lemieux (2010), I do this test for all covariates simultaneously, estimating a Seemingly Unrelated Regression (SUR). Each equation of this regression has a different covariate on its left-hand side, and the same regressors put in my RDD on the right-hand side (either those of the polynomial estimation, or those of the local linear regression). Then, I do a Chi-Square test for no discontinuity at the cut-off in all equations. As in my estimations, covariates are lagged by one political cycle, a cycle being a period between two elections (municipal or upper elections)[43]. I take these lagged terms in order not to have covariates affected by the treatment (holding multiple offices or alignment). Thus, observations on a given municipality are the same for the different years in a political cycle. Therefore, I keep one observation per municipality per political cycle.

The set of covariates I take is the same than the set of control variables described in Section 3: the area of municipalities, the total municipal population, the share of people aged 14 and less in the municipal population, the share of people aged 65 and over, the average fiscal income of residents, the ratio between the median and the mean in terms of residents' fiscal income, per capita municipal

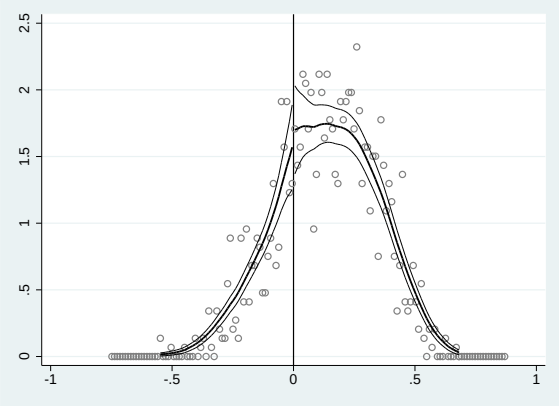
[42] All my assignment variables are constant for a given municipality between two years of elections (upper or municipal elections). See Figures 1 and 2 for a picture of years of elections. In order not to have the same observation several times, I keep one observation per municipality and per period between two years of elections. Moreover, I do not make restrictions mentioned in Section 4 on the support of assignment variables.

[43] As it is explained in Section 4, I take for a given year the value covariates take during the year before last elections (municipal or upper elections). For example, for the estimation of the multiple offices effect (with the district), I take for the year 2005 the value of covariates in year 2003. See Figure 1 for a picture of the timing between municipal and district elections.

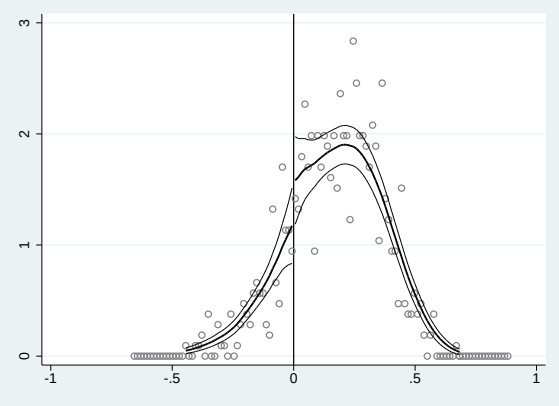
investment spending, the fiscal potential per capita and other investment resources per head.

Table 11 shows the p-value of the Chi-Square test for my different RDDs, and for the different specifications. Each line represents a different effect I estimate in Section 5. Each column represents a different specification. The two first columns represent local linear regressions with the optimal bandwidth defined by Imbens & Kalyanaraman (2012). The two last columns show the p-value of the test for polynomial specifications with the best polynomial order (according to the goodness-of-fit test). Whatever the effect and the specification, I cannot reject the null hypothesis of no discontinuity in all covariates, except for the local linear regression with all controls for the estimation of the multiple offices effect among non-aligned municipalities.

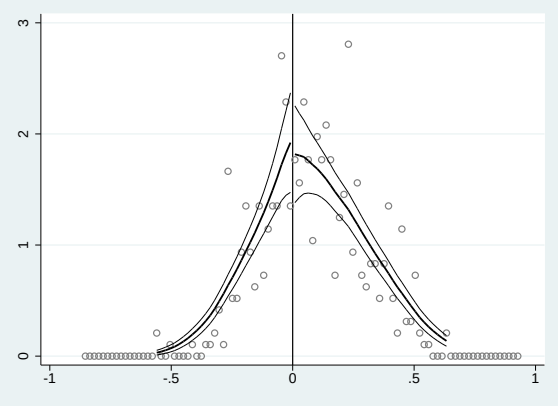
Figure 7: McCrary test for no discontinuity at the cut-off in the density of the margin of victory of mayors in district elections



(a) *Whole sample*



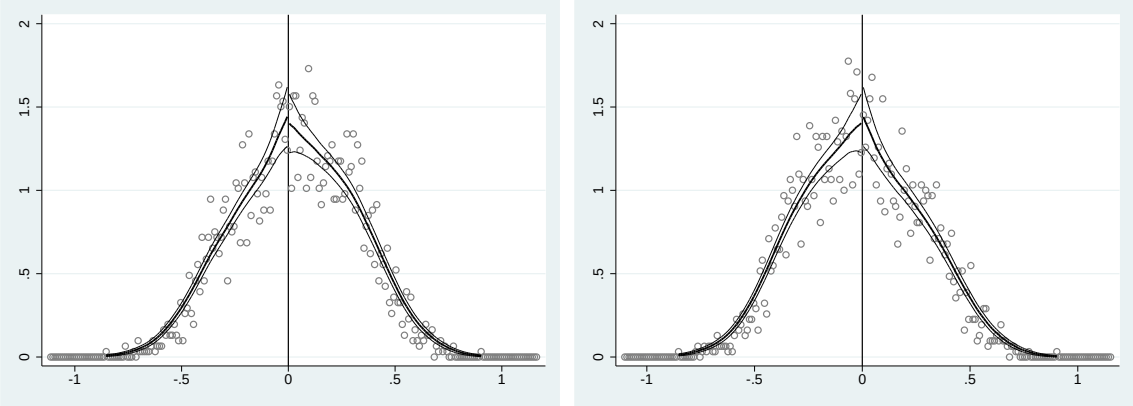
(b) *Aligned municipalities*



(c) *Non-aligned municipalities*

These three figures show for each sample (the whole sample, aligned municipalities and non-aligned ones) the estimated density of the margin of victory of mayors in district elections and the test for no discontinuity at the cut-off. They follow McCrary (2008). They contain 95% confidence intervals.

Figure 8: McCrary test for no discontinuity at the cut-off in the density of the alignment margin



(a) *Alignment with the district* (b) *Alignment with the province*

These two figures show the estimated density of my two alignment margins (alignment with the district and with the province) and the test for no discontinuity at the cut-off. They follow McCrary (2008). They contain 95% confidence intervals.

Table 11: Test for no discontinuity in covariates - P-values of the Chi-Square test performed from the SUR model

	Local linear regressions		Polynomial specifications	
	No control	*Controls*	*No control*	*Controls*
Holding multiple offices with the district				
Whole sample	0.463	0.735	0.246	0.935
Aligned municipalities	0.293	0.879	0.712	0.999
Non-aligned municipalities	0.365	0.007	0.164	0.122
Alignment with the district	0.221	0.283	0.200	0.969
Alignment with the province	0.193	0.673	0.633	0.992

For each estimation, the SUR model contains one equation per covariate. Each equation is the same as the estimated one (equation (1), (2), (3) or (4)) where I replace the explained variable (the variable on grants per head G_{it}^{u}, for $u = d, p$) by the covariate. The set of covariates I take is the same as the set of control variables described in Section 3: the area of municipalities, the total municipal population, the share of people aged 14 and less in the municipal population, the share of people aged 65 and over, the average fiscal income of residents, the ratio between the median and the mean in terms of residents' fiscal income, per capita municipal investment spending, the fiscal potential per capita and other investment resources per head.

7 Conclusion

This paper has shown new evidence on the politics of intergovernmental grants and has raised the issue of political connections in Local Public Finance. Using a new database on detailed financial accounts of French municipalities, I focus on two effects. On the one hand, I estimate a multiple offices effect on the allocation of intergovernmental grants. It consists in estimating whether a local incumbent manages to get more funds from an upper tier if he has concurrently a seat in this tier. To my knowledge, this effect has never been studied before. On the other hand, I estimate the effect of political alignment. Even if this effect has already been studied before, I estimate it in order to see whether the effect of alignment in this context of holding multiple offices is similar to what the previous literature has found. Both effects are estimated using a Regression Discontinuity Design in close electoral races. In order to identify a potential pure discrimination based on political determinants, I use as a dependent variable *discretionary* investment grants.

I estimate a multiple offices effect on discretionary investment grants French municipalities receive from their districts (*départements*). 25% of mayors of my sample have concurrently a seat at the district level. I compare mayors who barely won district elections to mayors who barely lost. I find a strong positive and significant multiple offices effect *among aligned municipalities*. Aligned mayors who have a seat at the district level get *double* the amount of grants received by other aligned municipalities. However, I find no multiple offices effect among non-aligned municipalities. A non-aligned mayor who has a seat at the district level seems not to make his municipality benefit from his position because he is not in the district council's majority. This last result allows me to exclude interpretations in terms of information on grants application for the strong multiple offices effect among aligned municipalities. Thus, this strong effect of multiple office-holding among aligned municipalities illustrates a high impact of connections between politicians.

Then, I estimate the effect of alignment with the district and alignment with the province (*région*). While 25% of mayors of my sample have a seat at the district level, only 7% of them are province councillors. Thus, estimating the effect of alignment with these two different upper tiers of government allows me to know whether alignment matters differently according to the number of multiple office-holders. I compare municipalities in which the first aligned candidate barely won in last municipal elections to those in which he barely lost. I find only *weak* and non-robust evidence of an effect of alignment with the district. This result contrasts with the whole existing literature on alignment effect. However, I find a positive and significant effect of alignment with the province which actually corresponds to a cut in grants for municipalities which are "barely non-aligned". Province councils seem to want to weaken non-aligned mayors in swing municipalities. These municipalities receive 48.5% lower grants with respect to the average amount of grants per capita received from provinces. To my knowledge, this effect is high compared to those in the previous literature on political alignment.

Why is evidence on alignment with districts weak whereas alignment with provinces seems to strongly matter? Targeting aligned multiple office-holders may be more profitable than targeting aligned municipalities. This may be the case for province councils as well. However, only 7% of

mayors of my sample have responsibilities at the province level, while 25% of them are district councillors. Thus, districts *can* focus only on holding multiple offices, contrary to province councils. Even if the kind of discrimination I observe on alignment with the province has no financial costs (because it consists in giving less grants to a group of municipalities), it may present a risk (e.g. denunciation by discriminated mayors) district councils may not want to take because potential returns are lower than focusing on the high number of multiple office-holders. While previous literature on the politics of intergovernmental grants focused on the alignment effect, this paper shows that political alignment may not be the main political criterion which drives the allocation of grants. If grantors prefer to make their targeting on other criteria than alignment, they may *not* favour aligned municipalities.

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Appendix

A Detailed electoral rules of French local ballots

This subsection presents electoral rules for the three tiers I study : the municipality, the district and the province[44].

Municipal elections take place every 6 years (with no term-limit). In my sample period, municipal incumbents come from two elections : one in 2001 and one in 2008[45]. These ballots consist in electing members of the municipal council (*conseil municipal*) and not the mayor, which is elected by the council. The voting system depends on the municipal population.

For municipalities with more than 3,500 inhabitants (2,731 municipalities over the 36,688 ones in 2010), there is a two-rounds list system. Each voter votes for a list, without changing its composition (ie. without dropping names or adding others.). If a list gets the absolute majority in the first round, it is assigned half of the seats. The remaining half is assigned in a proportional way among all lists (including the winning one). If no list obtains the absolute majority in the first round, then a second round takes place. Only lists which got at least 10% of votes cast can keep going. The list which gets the relative majority is assigned half of the seats. As for the first round, the remaining half is attributed in a proportional way among all lists (including the winning one). Therefore, there is always a list which is assigned the absolute majority of seats.

For municipalities with less than 3,500 inhabitants, there is still a list system (each candidate has to be in a list). However, each voter can choose the composition of candidates he wants. He can drop candidates from a list, and replacing them by names from other ones. Therefore, each candidate has his own share of votes. I do not include these small municipalities in my analysis for two reasons. First, data on elections in these municipalities is of low quality. Second, it is sometimes difficult to assign a political affiliation to these small jurisdictions.

In district elections, citizens vote only for members of their district council. Then, district councillors vote for the president of the council.

Each district is divided into different *cantons*. There is a first-past-the-post vote (and so, one incumbent) in each *canton*. In 2010, there were 4,038 district councillors for 100 districts (so, about 40 councillors per district on average).

There is no general inclusion rule between *cantons* and municipalities. A *canton* is either a set of municipalities, or a part of a municipality (for biggest cities)[46]. District incumbents have a 6-years

[44] See Figures 1 and 2 for a picture of the timing of these elections.

[45] The 2008 elections were 7 years after the previous ones in order not to have municipal elections during the same year as presidential and legislative elections.

[46] There are some exceptions to this rule. 12 *cantons* (over a total number of 4,038 *cantons*) consist of several municipalities without including the whole territory of each municipality.

term (with no term-limit). But elections are organized every 3 years. In each election, half of the *cantons* renews their representative. In each district, there are *cantons* of both series (ie. no district renews all its incumbents during one election). In my sample period, I have incumbents from three elections : 2001, 2004 and 2008[47].

The system is a first-past-the-post vote with two rounds. To be elected in the first round, a candidate must get more than 50% of votes cast and more than 25% of the number of registered voters. When there is a second round, only candidates who got a minimum number of votes can keep going (this number was 10% of the number of registered voters before 2011, and it has been 12.5% since 2011)[48]. The winner is the candidate which gets the relative majority of votes cast.

This voting system is such that all district incumbents in a given district have not the same political affiliation. That is why among district incumbents who have an office of mayor concurrently, there can be aligned incumbents and non-aligned ones. This allows me to distinguish aligned multiple office-holders and non-aligned multiple office-holders.

It is possible to have district councils without any absolute majority of a political affiliation. Therefore, I attribute to a district council the political affiliation of its President. From my point of view, this assumption may be not strong for two reasons. First, the President of the council may have an additive power on the council's policy. Second, the President is elected by councillors. Therefore, he can be considered as being representative of the majority of councillors.

Province elections are organized every 6 years (with no term-limit). In my sample period, incumbents come from two elections : 2004 and 2010. As for municipal elections, citizens vote only for members of their province council. Then, these councillors vote for the president of the council. In 2010, there were 1,880 councillors for 26 provinces (so, about 72 councillors per province on average).

There is a two-rounds list system at the province level. Each voter has to vote for a list, without changing its composition (ie. without dropping names or adding others.). If a list gets the absolute majority of cast votes in the first round, it is assigned one quarter of the seats. Remaining seats are assigned in a proportional way among all lists (including the winning one). If there is a second round, the assignment way of seats is the same, but the winning list is the one which gets the relative majority of votes. To stand in the second round, a list is required to have obtained at least 10% of cast votes[49].

For the same reasons as those explained above for district councils, I attribute to a province council the political affiliation of its President.

[47] As for the municipal ballot, this last election was in 2008 instead of 2007 in order not to have municipal elections during the same year as presidential and legislative elections.

[48] If only one or no candidate fulfills this condition, then runners in the second round are the two first candidates according to results of the first round.

[49] If only one or no candidate fulfills this condition, then runners in the second round are the two first candidates according to results of the first round. Moreover, running lists can cooperate with other lists, provided that each of these integrated lists had obtained at least 5% of votes cast in the first round.

B Construction of data on holding multiple offices

My database on elections and incumbents does not contain directly the information on multiple office-holding. To identify multiple office-holders, I do a matching between names (first names and surnames) of municipal incumbents and names of upper incumbents. To be considered as a multiple office-holder, a municipal incumbent must have the same identity as an upper one who was elected in the upper jurisdiction *in which the municipality is*. This avoids matchings of homonymes.

I have the identity of all district and province councillors. However, I have not the identity of all municipal councillors. For 2008 municipal elections, I have the identity of the head of the winning list in each municipality. The winning list is assigned the absolute majority of seats in the municipal council (see Subsection 2.2). Thus, the head of this list is generally elected mayor by the municipal council. However, I do not have this information for 2001 municipal elections. To face this problem, I use another database which contains the list of mayors of French municipalities since 2001. Using this other database is also useful to complete information on holding multiple offices after 2008 elections for the rare cases where the mayor and the head of the winning list are not the same person. To sum up, a municipality is considered to have a municipal incumbent elected in a given upper tier if the head of the winning list (for 2008 elections) or the mayor has the same first name and the same surname as one incumbent in the upper jurisdiction in which the municipality is.

As some municipalities are missing in the database on mayors, I have no information on the identity of municipal incumbents for these municipalities before 2008 elections. Thus, I drop them from my sample.

C Data from the French national census

The French national census is produced by the National Institute of Statistics and Economic Studies (INSEE). Before 1999, it consisted in an exhaustive survey on the whole population every 7, 8 or 9 years (such a survey was realized in 1968, 1975, 1982, 1990 and 1999). Since 2004, a survey is realized every year on a share of the population. Each yearly survey is such that merging five consecutive waves provides a representative sample of the French population for the median year of these five surveys. The first yearly survey was realized in 2004. Thus, the first French national census using this new methodology is the 2006 census, which uses waves from 2004 to 2008. With this new methodology, INSEE is able to provide a census for each year.

As I focus on the period 2004-2010, I have to use data from the former and the new methodology. However, this new methodology consisted also in modifying the definition of being a resident in a municipality and so, the definition of the total municipal population. To make data of different census from different methodologies comparable, INSEE provides harmonized census data, but not for all years. I have such harmonized measures for the years 1999 and 2010. I produce census data for all years assuming that values vary in a linear way between these two years. Variables I use from the census (and for which I make this assumption) are the total municipal population and the

structure of the municipal population (the share of young people and elderly people).

D The structure of French municipal revenues

In France, the budget of each municipality has to be decomposed into an operating section and an investment section. Municipalities are not allowed to have an operating section in deficit, that is why there is no debt in this section. However, debt can be used to fund municipal investments. If the operating section of a municipality is in surplus, this extra-money can be used to fund investment expenditures.

Table A1 provides a broad picture of municipal revenues for both budget sections in 2010. It shows macro data from the budget of all French municipalities. Operating resources represent 80.6% of municipal revenues. Operating spending represent 67.5% of municipal budgets. The macro surplus of the operating section (13.1% of revenues) funds municipal investments.

The main part of operating resources comes from local taxes. There are three local taxes in France. First, the housing tax (*la taxe d'habitation*) is paid by residents on the cadastral value of their accommodation, whatever their status regarding it (owner or tenant). Second, the property tax (*la taxe foncière*) is paid by owners. The tax base is still the cadastral value. Third, the local business tax (*la taxe professionnelle*[50]) is paid by companies on their real estate and their production facilities. Municipalities decide tax rates and some tax base reductions for these three taxes. The second main source of operating revenues are formula-based operating grants, which represent 21.1% of municipal revenues. Theses grants mainly come from the Central State. The operating section can also be funded by other resources (e.g. fees, sales, etc.) which represent 11.6% of municipal resources.

As for the investment section, it is funded by operating surplus, discretionary and formula-based grants, loans and "other investment resources"[51]. As shown in Table 2, discretionary investment grants (which represent my variables of interest) represent 11.7% of municipal investment spending.

[50]Since a reform in 2010, this tax is called the Contribution of Companies on Property (*la contribution foncière des entreprises*).

[51]This last category includes other diverse resources like capital property donations or transfers of capital assets due to transfers of competencies. This category also includes the Tax on Local Facilities (*Taxe Locale d'Équipement*) which is a local tax on constructions.

Table A1: Financial resources of French municipalities in 2010

Type of resource	Amounts	Share in municipal resources
Operating section		
Local taxes[1]	44.3 B €	47.9%
Formula-based operating grants	19.5 B €	21.1%
Other operating resources[2]	10.7 B €	11.6%
TOTAL operating resources (1)	74.5 B €	80.6%
Investment section		
Operating section surplus (2)	12.1 B €	13.1%
Formula-based investment grants	04.5 B €	04.9%
Loans	06.4 B €	06.9%
Discretionary investment grants	03.5 B €	03.8%
from districts	*01.3 B €*	*01.4%*
from provinces	*00.6 B €*	*00.6%*
from others[3]	*01.6 B €*	*01.8%*
Other investment resources[4]	03.5 B €	03.8%
TOTAL investment resources (3)	30.0 B €	32.5%
TOTAL municipal resources : (1)+(3)-(2)	92.4 B €	100.0%
Used for operating spending : (1)-(2)	*62.4 B €*	*67.5%*
Used for investment spending : (3)	*30.0 B €*	*32.5%*

Source: DGFiP (French Ministry of Economy and Finance).
These macro data come from financial accounts of all French municipalities.
[1] This category corresponds to the three local taxes municipalities can levy : the housing tax, the property tax and the local business tax. See the text of this Section for a definition of these taxes.
[2] "Other operating resources" mainly contain fees and sales.
[3] These are grants from inter-municipal communities, the Central State and the European Union.
[4] "Other investment resources" include diverse revenues like capital property donations or transfers of capital assets due to transfers of competencies. This category also includes the Tax on Local Facilities (*Taxe Locale d'Équipement*) which is a local tax on constructions.