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What Motivates French Pork: Political Career Concerns or Private Connections?

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Abstract

This paper uses the detailed curricula of French ministers and the detailed accounts of French municipalities to identify governmental investment grants targeted to specific jurisdictions. We distinguish between municipalities in which a politician held office before being appointed as a government's member and those in which current ministers lived during their childhood. We provide evidence that municipalities in which a minister held office during her career experience a 45% increase in the amount of discretionary investment subsidies they receive during the time the politician they are linked to serves as minister. In contrast, we do not find any evidence that subsidies flow to municipalities from which ministers originate. Additional evidence advocate in favour of a key role of network and knowledge accumulated through connections, illustrated by a persistence of the impact of intergovernmental ties.

KEYWORDS: Pork-barrel economics, distributive politics, political connections, private connections.
JEL CLASSIFICATION: D72, D73, H50, H77.

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1 Introduction

Pork barrel politics, i.e., the propensity of politicians to unduly direct public spending toward specific places, has been widely documented. Recent contributions have raised the importance of connections in this phenomenon and have provided empirical evidence that regions of birth of politicians are favoured in terms of economic development or public funds. For example, Hodler and Raschky (2014) show that birth regions of weakly institutional countries' leaders become significantly richer once the latter reach power. Similarly, Carozzi and Repetto (2016) report large inflows of transfers toward birth cities of Italian members of Parliament. These behaviors could go along with different candidates, and plausibly non-mutually exclusive, motivations such as politicians' career concerns and kinship considerations.

This paper investigates in a single framework the impact of different kinds of connections plausibly related to different sets of motivations. To this end, we use an original data set that contains the detailed curricula of all French ministers that held office between 2000 and 2013. Together with ministers' terms and municipalities detailed accounts, these data help us to identify governmental subsidies targeted to specific municipalities and to distinguish between different motivations by ministers. We achieve this by constructing two types of links through which a municipality might be connected to a minister. Namely, we distinguish between municipalities in which a politician held office before being appointed as a government's member and those in which current ministers lived during their childhood (proxied by the birth town and the municipality in which the minister attended high school).

Municipality fixed effects regressions allow us to provide evidence that municipalities in which a minister held office during her career experience a 45% increase in the amount of discretionary investment subsidies they receive from the central state by the time the politician they are linked to serves as a minister. In contrast, we do not find any evidence that subsidies flow to municipalities from which ministers originate. These findings are robust to a variety of tests such as a placebo test using formula-based municipalities' transfers or explicitly taking into account the potential inertia of investment grants.

The main source of variation of our identification strategy is the time a politician is appointed as minister. Fixed effects regressions enable us to compare how subsidies that flow to municipalities evolve once the politician they are connected to is appointed as a minister. This difference-in-differences setting requires a careful definition of the control group as the probability for a municipality to be linked to a future minister is arguably not randomly distributed over the population of cities. Connected municipalities do differ from non-connected ones in some dimensions such as size and political orientation for example. We thus use three different control groups. The first one is made of all French municipalities. The second is constituted by municipalities with more than $10,000$ inhabitants as size is an important determinant of the probability to be connected to a minister at some point in time. We finally construct a third control group by using a propensity score matching approach to ensure that observable characteristics balance between treated and control municipalities. All empirical results hold when using the three control groups.

To the best of our knowledge, this paper is the first to use a single framework that enables to distinguish the different motivations that drive pork barrel economics. Empirical evidence we present support the view that politicians' career concerns are the main driver of subsidies' targeting. While this finding might be specific to the context investigated in this paper, it contrasts with findings by Carozzi and Repetto (2016) who uncover personal motives as the main divers of funds allocation by Italian parliament's members.

The detailed accounts of French municipalities and the original data we assembled also allow us to further investigate the mechanisms that underlie the impact of ties between ministers and municipalities. First, we find that the targeting in favor of municipalities in which a minister held office during her career persists once the politician terminates her term in the government. This contrasts with Hodler and Raschky (2014), who do not find such a persistence of the effect toward birth places of political leaders. Despite the limited time span for which French municipalities' detailed accounts are available, this finding suggests that what matters is not precisely the official position held by a politician, but the knowledge and/or the network she acquired thanks to this national experience, or the ability of municipalities to use knowledge and network they accumulated

through their connection once the minister left the national government. Two additional evidence highlight the determinant role of network and experience. First, we provide evidence that ministers who are supposed to control smaller budgets perform as well as others in directing subsidies toward their preferred places. This advocates in favor of ministers using their relations within the government or the administration rather than the budget they directly control to favor specific municipalities. Second, French ministers do not seem to influence the allocation of subsidies controlled by intermediate tiers of government. This latter finding suggests that our baseline effect is not driven by a broad political influence a minister may have on the whole political system because of her national-level position. We finally provide evidence that right- and left-wing ministers behave similarly as the effect of political connections and its persistence hold for ministers of both political orientations. Interestingly, we find that a politically connected municipality with a former minister receives more grants even when the government is of different political orientation than the one in which this former minister served. This again suggests that most of the influence current and former ministers have on subsidies transits through informal links or accumulated knowledge of the administration.

Our finding that connections between ministers and municipalities based on local terms matter, while those based on ministers' private life do not, suggests political motivations drive pork-barrel politics. This echoes evidence on the importance of career concerns provided by Castells and Solé-Ollé (2005), Aidt and Shvets (2012), and Albouy (2013) among others. Political motivations underlying our findings can be of different natures. First, a minister may have reelection concerns at the municipal level. In line with this interpretation, we find that the targeting toward politically connected municipalities is precise, as there is no evidence that direct neighbors of connected municipalities also receive larger grants. Second, a minister may tunnel subsidies toward places as differed payment of past political support. Another potential explanation originates from the asymmetric information problem a grantor has to face in the allocation of intergovernmental transfers. Given the potential high collective cost of this asymmetry (Besfamille 2004), government members may target jurisdictions for which they have better knowledge, and which they can better monitor. This interpretation would be consistent with our findings as politicians are likely to hold more information about

places in which they hold a term relatively to places in which they only lived when they were young.

Another feature of this paper is that it contributes to the literature on the impact of political links on intergovernmental grants. This strand of research has focused on political ties related to political affiliation. All papers in this literature find that local jurisdictions politically aligned with an upper tier of government receive on average more funds from this layer.[1] By showing that show that the whole history of politicians' career matters in the allocation of subsidies, we offer new insights in this research area.

By investigating the impact of different kinds of connection on intergovernmental transfers, we also contribute to the large literature on the impact of political connections on economic activity. Fisman (2001), Faccio (2006), Goldman et al. (2009), Cingano and Pinotti (2013), Coulomb and Sangnier (2014), and Do et al. (2016) among others show that firms connected to elected incumbents gain in value. Bertrand et al. (2007) complement this finding, by providing evidence of political connections' costs for connected firms. Cingano and Pinotti (2013) further show that these costs are compensated by higher sales to the public sector. David et al. (2012) is an exception in this literature, as they find no impact of connections between politics and firms. Our paper brings new insight in this literature, as we highlight that, in addition to play a role on firms' activity, political connections seem to matter as well on the geographical allocation of funds devoted to the provision of public goods.

This paper also contributes to the study of distributive politics in developed countries. These countries are studied in only 37% of the 158 articles listed in the recent literature review by Golden and Min (2013). France appears to be particularly under-studied as Cadot et al. (2006) is the only paper inventoried by Golden and Min (2013) that explicitly focuses on this country by providing evidence that French infrastructure investments were primary driven by political concerns at the turn of the nineties. More recently, contributions by Bertrand et al. (2007) and Coulomb and Sangnier (2014) also contributed to fill this gap by

[1] See Solé-Ollé and Sorribas-Navarro (2008) and Curto-Grau et al. (2014) for Spain, Arulampalam et al. (2009) for India, Brollo and Nannicini (2012) for Brazil, Migueis (2013) for Portugal, and Bracco et al. (2015) for Italy.

showing how much linked French industry and politics are.

The remainder of the paper is organized as follows. The institutional context, the data, and the estimation strategy are presented in Section 2. Empirical results are presented and discussed in Section 3. Section 4 concludes.

2 Data and estimation strategy

This section presents the institutional context, the data we use, and the empirical strategy we adopt.

2.1 Institutional context and data

French parliamentary and presidential elections are synchronized since 2002. Shaded areas of Figure 1 map the different heads of state and government from 2000 to 2013, together with their respective political orientation. Over this time period, the French government was made of 36 ministers on average. However, its composition regularly changed. Either following parliamentary elections or because of political choices made by the head of the political majority. This gives raise to frequent changes in the identity of ministers as illustrated by instantaneous entries and exits in and from the government represented by spikes of Figure 1.

All in all, exactly 200 distinct individuals served as ministers in the French government between 2000 to 2013. The original data set used in this paper contains the detailed curricula of all these politicians. Information have been collected and cross-checked from manual search on various online resources: the French parliament and government's websites, politicians' official websites, Wikipedia, and other occasional resources such as information websites. These resources allowed us to gather detailed information about French ministers' past political career and private life. From the later information, we use birth cities and places where individuals attended high-school to identify municipalities that will at some point benefit from a *private connection* to a minister.[2] Similarly, we define a municipal-

[2] All birth places of the 200 politicians who have held office in the French government between 2000 and 2013 were identified: 181 in France and 19 abroad. 152 ministers attended high-school in a French municipality and 4 in a foreign cities. This information remains unknown for 44 individuals. All in all, only 7 out of the 200 politicians have no known private connection to

ity as benefiting from a *political career connection* if a member of the government once served as municipal councilor or mayor of that municipality.[3] For the definition of both kinds of connection, a politician is considered as being a Member of Government during a given year if she holds this function during at least one day during that year.

Variations in ministers' past history and in the composition of the French government allow us to assess at each point in time whether or not a municipality benefits from a political or a private connection to a current member of the government. Figure 2 plots the yearly number of French municipalities that benefit from such connections. Over the 2000–2013 period, the average yearly number of connected municipalities is 65, with peaks close to 100 in 2002 and 2012 when the political majority changed side.[4] On a average year, 35 municipalities are politically connected to a minister while 38 benefit from a private connection and 9 benefit from both.[5]

We map information about municipalities that benefit from connections to current government's members into official detailed accounts of French municipalities provided by the French *Direction Générale des Finances Publiques*. These data are available over the 2002–2011 period for all municipalities. They allow us to observe the precise yearly amount of discretionary investment grants allocated to each municipality by the central state. Relying on discretionary grants is key, as such transfers can be easily manipulated and are thus highly relevant to study pork-barrel politics. Municipalities receive on average 54 euros per head of discretionary investment grants each year, all grantors included. This represents 11% of municipal investment revenues on average. This illustrates the important incidence this grants' allocation may have on the geographical allocation of local

some French municipality.

[3]Only 16 out of the 200 politicians have never been elected. These are mostly individuals who were appointed as ministries following a career in the private sector (known as "*issus de la société civile*" in French). 155 served at least once as municipal councilor or mayor (the mayor is elected by and among municipal councilors). The remaining 29 ministers did hold electoral mandates, but not at the municipal level.

[4]These peaks are a consequence of our choice to consider a politician as being a Member of Government during a given year if she holds such a position at least during one day during the year. Then, by construction, the number of Members of Government is higher during years of transition. We check in Subsection 3.2 that our results are not driven by this choice.

[5]These average figures only fall to 33, 36, and 8, respectively, when excluding 2002 and 2012.

infrastructures. Discretionary investment grants allocated by the central state, which is our dependent variable of interest, represent on average 10 euros per head per municipality each year, which accounts on average for 2% of municipal investment resources. These amounts related to discretionary investment grants have to be considered as lower bounds, since some formula-based investment grants include funds for which eligibility depends on a formula, but the allocation between eligible jurisdictions is subject to discretion.[6]

We also use information on political and socio-economic characteristics of municipalities from various official sources. We use local results of municipal and national ballots from the French Home Office. We also rely on information on local population, its age structure and its characteristics regarding employment from the French national census provided by the French National Institute of Statistics and Economic Studies (INSEE). Our final sample of made of the $2,489$ municipalities of more than $3,500$ inhabitants.[7]

2.2 Estimation strategy

Given within variations in both kinds of connection illustrated by Figures 1 and 2, we can uncover whether municipalities experience any increase in the amount of subsidies they received once a politician they are connected to is appointed as a government's member. The panel structure further allows to investigate whether this increase persists once the politician to which the municipality is connected terminates her term in the government. We achieve these objectives by estimating

[6]For instance, the *Dotation Globale d'Équipement* (DGE) is an investment grant whose eligibility depends on total municipal population and municipal tax bases. Then, the allocation between eligible municipalities is decided by the central state, after consultation of a committee composed by local elected incumbents. Therefore, the power on this grant allocation is implicitly shared between different actors. This is why we prefer not to consider these grants and to focus on funds whose allocation is decided by one well-identified organisation, without ambiguity.

[7]Municipalities of more than $3,500$ inhabitants represent 68% of the total population of metropolitan France. We also exclude the three largest cities—Paris, Lyon, and Marseille—from the sample as they depart from other French municipalities in many dimensions such as administrative status, size, etc.

the following fixed effects equation:

$$\begin{aligned} y_{it} &= \beta_1 \text{Political career connection}_{it} + \beta_1' \text{Terminated political career connection}_{it} \\ &+ \beta_2 \text{Private connection}_{it} + \beta_2' \text{Terminated private connection}_{it} \\ &+ \boldsymbol{I}_i + \boldsymbol{I}_t + \alpha + \varepsilon_{it}, \end{aligned} \tag{1}$$

where y_{it} denotes the log of per capita amount of discretionary investment grants received by municipality i on year t from the central government, Political career connection$_{it}$ and Private connection$_{it}$ are dummy variables equal to 1 if municipality i is politically or privately connected to a current government's member on year t, Terminated political career connection$_{it}$ and Terminated private connection$_{it}$ are dummy variables equal to 1 if municipality i is connected to a former government's member, $\boldsymbol{I}_i$ and $\boldsymbol{I}_t$ are sets of municipality and year fixed effects, respectively, α is a constant term, and ε_{it} is the error term. The expression also includes interaction terms between connection variables. We estimate equation (1) using ordinary least squares and cluster standard errors at the municipality level.

This difference-in-differences setting will allow us to uncover the causal effect of a municipality benefiting from a connection to a minister only if the treatment is as close as possible from random. The treatment—being connected to a current member of the government—can be divided in two steps. First, a municipality must be candidate to the treatment. In other words, it must be linked to a politician that might at some point become a minister. Second, the precise timing of ministers' appointments must not depend on the local situation. This second statement is backed by the mere observation of changes in the government's composition that are mainly due to elections or within-party political debates or disputes. In contrast, the first step of the treatment is more challenging as politicians that will at some point become ministers are likely to hold particular social origins and to have spent their childhood in specific cities. Similarly, early political career experience of top-level politicians are not likely to be random: they often depend on political parties' decisions.[8]

The strategy we use to alleviate this selection issue is to define alternative con-

[8]For example, high-potential politicians are frequently designated as candidates to gain or defend a particular city. Others are also designated as candidates in easy-to-in places as a reward. See Dolez and Hastings (2003) among others.

trol groups. As a first candidate counterfactual group, we agnostically select all the 2,320 municipalities that did not benefit from any connection (private of political) to a current government's member between 2002 and 2011. These municipalities however differ strongly from connected municipalities as illustrated by descriptive statistics presented in the left part of Table 1 and by the discrepancy between the dashed and the solid size distributions of Figure 3. This latter observation leads us to create a second estimation sample from all municipalities with more than 10,000 inhabitants. This condition ensures that compared municipalities will be of comparable size and also improves on comparability across other dimensions as shown by the middle part of Table 1. Finally, we construct a third sample thanks to a matching model where the treatment is being privately or politically connected, and that we estimate using observable characteristics measured in 2001. This matching procedure, whose outcome is tabulated in the right part of Table 1, allows us to ensure that connected and non-connected municipalities share similar observable characteristics as illustrated for example by the comparison between the doted and the solid size distributions of Figure 3. The detailed description of this matching procedure is provided in the Appendix.

3 Results

In this section, we present evidence that subsidies accrue disproportionally to municipalities that benefit from a connection to a current government's member. We show that this only applies to municipalities that are politically connected to a minister and that private connections do not to bring extra revenues. We then show that these findings are robust to various robustness checks. We also explore the different channels though which ministers may tunnel subsidies and provide additional results that help us to further interpret the main findings.

3.1 Main results

Columns 1–3 of Table 2 present the estimated coefficient of Equation (1) when treating identically both types of connections, i.e. without making a distinction between political career connections and private ones. Estimates turn out to be

positive whatever the sample used. Their magnitude however decreases as the counterfactual group becomes better defined. The matched sample even provide us with estimates that are not statistically significant at conventional levels.

Columns 4–6 of Table 2 decompose the previous estimates depending on the type of connection. Connections associated to the political career of a current minister appear to have a large and positive effect on investment subsidies' flows. Interestingly, this effect seems to persist even once the minister the municipality is connected to has left office at national government. In contrast, we do not find evidence that private connections to current government's members allow municipalities to benefit from larger discretionary investment grants.

All in all, estimates presented in Table 2 suggest that the amount of discretionary investment grants increase by about 50% by the time one of a municipality's former or current incumbent becomes a government's member. This effect persists and even seems to become larger once the politician has left office in national government. This latter finding is consistent with (i) some decisions needing time to be taken and/or having lasting consequences, (ii) municipalities being able to continue using accumulated knowledge of the administration even once their direct connections to the government are terminated, and (iii) former ministers being able to continue to lobby in favor of specific municipalities even once they have left office. This persistence results however need to be taken with caution as one of the main limit of this paper lies in the short time period under scrutiny.[9]

There is however still sufficient variation in the data to further investigate the dynamics of the effect we are interested in. We achieve this by estimating a modified version of Equation (1) in which we decompose each of the two sets of dummy variables into finer time periods relative to the appointment as minister of the politician a municipality is connected to. More precisely, we replace Political career connection$_{it}$ and Terminated political career connection$_{it}$ in Equation (1) by ten dummies. Two dummies for the two years before a municipality gets politically connected, two dummies for the two first years of political connection, one dummy for all subsequent years of this treatment, four dummies for the four first years of

[9]In particular, while information we use on current connections are exhaustive, we do not observe an unknown number of terminated connections as information on ministers' curricula only covers individuals who were member of the government between 2000 and 2013.

terminated political career connection, and one dummy for all subsequent years of this post-treatment. We include ten other similar dummies for private connections. Figure 4 plots the associated series of estimates that we obtain using the full sample.[10] This graphical representation allows us to clearly see that (i) connected municipalities do not receive more grants than non-connected ones until the start of the connected minister's term, (ii) for political career connections, the effect persists for a while once the term is terminated, and (iii) private connections definitely do not trigger any dynamics in the evolution of received grants. This dynamic representation further enables us to state that the above discussed finding about persistence cannot only be due to decisions needing time to be implemented as visual investigation makes clear that subsidies immediately increase once the politician to which a municipality is connected to starts her term.

All in all, the most conservative estimate of Table 2 suggests that municipalities that benefit from political career connections to a current member of government experience a 45% increase in the amount of investment subsidies they receive. A back-of-the-envelope calculation suggests that this targeting by politicians represents a total amount of 30 million euros per year. This corresponds to 7.8% of the total budget allocated by the central government to discretionary investment grants transferred to municipalities.[11]

3.2 Robustness checks

This sub-section presents a series of tests that demonstrate the robustness of our main findings.

We first start by a placebo test. We estimate again Equation (1), but swapping

[10] See Figures A1 and A2 in Appendix for mirroring estimates obtained using the sample restricted to municipalities of more than $10,000$ and the matched sample, respectively.

[11] The detailed calculation is as follows. The most conservative estimate of Table 2 is 0.45. It is obtained when using the matched sample. Politically connected municipalities receive on average 14.54 euro per capita as discretionary investment grants during years that immediately precede the beginning of the relevant politician's term as minister. They thus experience a $0.45 \times 14.54 = 6.54$ euros per capita increase in subsidies. The population of municipalities that benefited at least once from a political connection between 2002 and 2011 sums to 4.68 million inhabitants. This implies that they receive together on average $4.68 \times 6.54 = 30.6$ million euros per year because of their connections. This represents 7.8% of the yearly average total budget allocated to discretionary investment grants (394 million euros).

the dependent variable for the per capita *dotation globale de fonctionnement*, a formula-based item of municipalities' detailed accounts that corresponds to funds allocated to municipalities for their general functioning expenditure.[12] As shown by estimates presented in columns 1–3 of Table 3, political and private connections do not have any robust impact on municipalities' formula-based revenues.

Second, we test whether estimates depend on our methodological choice of arbitrarily considering that a municipality is treated a given year as soon as the politician it is connected to served as minister for at least one day during that year. We thus remove each connected municipality's first and last years in treatment from the sample. Estimates tabulated in columns 4–6 of Table 3 show that these restrictions hardly affect findings.

As a third robustness check, we introduce the lagged dependent variable as supplementary explanatory variable to explicitly account for the potential time structure of investment grants allocated to municipalities. While this variable is indeed positively and significantly correlated to the dependent one, its introduction in Equation (1) leaves estimates of interest qualitatively unchanged as shown by columns 7–9 of Table 3.

Moreover, we show in columns 10–12 of Table 3 that estimates we obtain on the matched sample are not particularly sensitive to the approach used to construct this particular sample. Namely, we construct two distinct matched samples by separately considering political career connections and private connections. This allow us to estimate the effect of each type of connection on a distinct sample whose composition is not affected by the alternative type of connection. We obtain estimates that are consistent with those of the main specification. This also holds true when using the union of both preceding matched samples. Summary statistics related to these alternative matched samples are provided in the Appendix.

One issue with our measure of political connections is that it might capture private links as well. It is indeed likely that politicians once served as municipal counselors in locations they privately know best. In order to check whether our

[12]The total *dotation globale de fonctionnement* received by a municipality is derived from a formula that takes into account the number of inhabitants, the age structure of the population, the area, local tax bases, average income of residents, the share of inhabitants who rely on social benefits, and occasional factors such as the fact that part of a municipality's area overlaps with a national park.

baseline political connection effect is driven by private links, we investigate the heterogeneity of this effect according to the potential private content of political connections. We achieve this thanks to the fact that the central administration of political parties frequently designate candidates to run for local elections in places from which they do not originate. This practice, called "political parachuting" (*parachutage politique*) is common in France, as highlighted by Dolez and Hastings (2003). We use two alternative ways to identify parachuted politicians. First, a member of government is considered as having been parachuted in a municipality in which she held office if that municipality is located in a different *département* than the one in which she were born or went to high school.[13] Second, we use an analogous measure, using the *régions* instead of the *départements*.[14] For each of these two measures, we interact our dummies of connection with a dummy equal to one in case of parachuting. Columns 13–18 of Table 3 show that baseline effects of political career connections are not driven by unparachuted politicians, suggesting that they are not the result of private links that would be embedded into political ones.

3.3 Mechanisms

In this sub-section, we provide additional empirical evidence that help us to have a finer look at mechanisms at play. In what follows, we only focus on political career connections as the above results demonstrated that municipalities do not benefit from private connections to ministers. We therefore replace the original matched sample by a matched sample that is specific to political connections and remove from estimations all terms that relate to private connections (see Subsection A.1 in Appendix for a description of this sample).

An interpretation of the persistence of the political connection effect highlighted in Table 2 is that what matters is not a current office in government a politician connected to a municipality holds, but knowledge and/or network accumulated by the member of government or the municipality due to this connection.

[13]The *département* is the second tier of the French decentralization architecture (starting from the lower layer, which is the municipality). Metropolitan France has 96 *départements*.

[14]The *régions* constitute the tier of government between the *départements* and the central state. Metropolitan France had 22 *régions* until 2016.

Two additional findings support this interpretation. First, we isolate high rank ministers from others.[15] High rank ministers are politicians who are in charge of larger departments and/or supervise lower ranked ministers who served in their department. Ministers' ranks are thus correlated with differences in decision-making power. However, such differences do not seem to make any difference on investment grants received by politically connected municipalities as shown by columns 1–3 of Table 4. This result suggests that ministers manage to tunnel subsidies to municipalities they are politically connected to through their network in government and/or in the central administration, rather than through budgets they directly control. Second, we investigate whether subsidies allocated to municipalities by intermediate tiers of government (the *départements* and the *régions*) also depend on political career connections. Both of these tiers also allocate investment subsidies whose amounts are available from municipalities' detailed accounts. As shown in columns 4–9 of Table 4, municipalities that are connected to a current government's member do not receive higher funding from intermediate administrative tiers. This suggests (i) that ministers do not use their hierarchical position to influence decisions taken by *départements* and *régions*, or (ii) that ministers are not able to exert any pressure on these actors.[16]

We next identify neighboring municipalities of connected ones to check whether subsidies are precisely targeted or only directed toward geographic areas that are of some interest for a minister. We define neighboring municipalities as any municipality that share an administrative border with a municipality that is politically connected to a current minister. 346 municipalities of the full sample fall into this category. This number amounts 174 once the sample is restricted to municipalities of more than $10,000$ inhabitants. As for the matched sample, we run a new matching procedure to select municipalities that have observable characteristics that are as close as possible to those of actual neighboring municipalities (see Subsection A.1 in Appendix for a description of this sample). We then re-estimate a modified version of expression (1) in which we add a dummy variable equal to

[15]There are four distinct levels in the protocol of the French government: *secrétaire d'état*, *ministre délégué*, *ministre*, and *ministre d'état*. The head of the government is called *premier ministre*. We classify as high rank ministers all *ministres* and *ministres d'état*, as well as heads of government.

[16]While both interpretations might be correct, we are not able to discard one or the other.

1 for municipalities that share a border with a politically connected municipality. As shown by estimates presented in columns 10–12 of Table 4, neighboring municipalities do not benefit from being close to a politically connected municipality. This suggests that subsidies targeting by ministers is accurate and does not consist in favoring an approximate area. This finding is consistent with local reelection concerns. It also deals with an issue of simultaneity underlying our baseline specification. If a region is seen as strategic at the national level, the President and the Prime Minister could decide simultaneously to give more funds to municipalities of this region and to appoint as a member of government a politician who comes from this area. In this case, our estimates would not give a causal effect of being connected to a minister. Under the assumption that such strategic regions are broader than a municipality, and that connected municipalities are not systematically the main jurisdictions which concentrate all infrastructures in their area, this evidence of a precise targeting which do not benefit to neighbors of connected municipalities suggests that the impact attributed to political career connections is not the result of such a simultaneity issue. Finally, this finding of no impact on neighbors contrasts with Hodler and Raschky (2014), who find that additional economic development observed in birth regions of political leaders holds in broader areas. This difference in results illustrates the fact that we are identifying a precise channel through which pork-barrel politics can happen, while variables related to economic development may be more subject to spatial autocorrelation.

We then have a closer look at the past political career of ministers and distinguish between those who are still member of the municipality's council and those who terminated their term. This distinction could go along with some differences in the intensity of a politician's feeling toward municipalities and/or denote different local reelection concerns. We empirically investigate this potential heterogeneity in political career connections by constructing a supplementary dummy variable that acts as an interaction term and is equal to 1 if the current minister is not anymore a member of the municipality's council. Estimates coefficients presented in columns 13–15 of Table 4 reveal negative but non-statistically significant interaction terms, except for the sample of municipalities over 10,000 inhabitants. This unrobust evidence suggests that ministers do not behave differently towards municipalities depending on whether or not they still hold a seat at the municipal

council. This finding suggests that reelection concerns underlying the impact of political career connections may be not related to municipal reelection, but to other kinds of ballot (e.g. legislative elections) for which the politician connected to the municipality needs local support. It is also possible that members of government target municipalities in which they have/had political responsibilities through an informal contract with current municipal incumbents (e.g. a politician willing to reach national positions may require a local support in return of some help in case of success).

Last but not least, we investigate whether returns from connections to ministers are different depending on the minister's political orientation. We achieve this objective by isolating members of left-wing governments from members of right-wing ones. As illustrated in Figure 1, 2002 is the only year of the period covered by data on subsidies where the central government was left-wing. Thus, we do not have pre-treatment periods for municipalities connected to a left-wing member of government. Therefore, we remove municipality fixed effects from Equation (1) for these estimations, but we include as control variables a set of covariates related to political and socio-economic characteristics of municipalities.[17] Estimated coefficients of interest are presented in columns 16–18 of Table 4.[18] As shown by the interaction term, the political orientation of ministers does not appear to make any difference. In contrast with previous columns of the table, we show point estimates related to terminated political career connections, as they highlight an interesting feature. They provide evidence that municipalities politically connected to a former member of a left-wing government still benefit on average from additive amounts of grants when the current government is right-wing. Despite the caution we have to take regarding the omission of municipal fixed effects, this result suggests that political career connections play on grants allocation through network and knowledge related to the central administration, and not to connections with current members of government.

[17]Included covariates are the same than those used for the implementation of the propensity score matching. See Subsection A.1 in Appendix for more details.

[18]The omission of municipality fixed effects obviously lead to an overestimation of the main effects when using the un-matched samples. This issue however seems to vanish when using the matched sample.

3.4 Discussion

Results presented in this paper provide evidence that connections between members of government and municipalities play a role through political motives. Our results suggest that additive grants targeted to connected municipalities are got through network and/or knowledge related to the central administration. However, political motives underlying our findings can be of different kinds. First, a current or former member of government may have reelection concerns at the municipal level. Although the precise targeting toward connected municipalities, without any effect on their neighbors, plays in favor of this explanation, the fact that our baseline estimate is not statistically different when members of government left their municipal office challenges this explanation. Alternatively, top politicians may favor municipalities in which they have a political experience because they need a local support for other kinds of elections, as legislative ones. This would be consistent with a need of local support for these elections, or with the fact that politicians may build a reputation through their political action toward municipalities in which they held office. Our results can also be driven by an informal contract between the current or former member of government and their municipality. A politician who targets a top position at the national level may have got some support from her colleagues at the local level, by committing to give back this help in case she reaches her goal.

Our conclusion of no private connection effect may be controversial at first stage. It is possible to birth towns or places where members of government attended high school is not a good proxy of these kinds of connections, which would bring insight on the way to measure these links regarding the existing literature. However, finding no impact through our measure of private connections, combined with no heterogeneity of our baseline estimates according to political parachuting comforts this conclusion of no kinship motives toward municipalities members of government originate.

Other explanations of our political career connection effect can be claimed at first glance. When allocating intergovernmental transfers, the central political power has to face a problem of asymmetric information. A grantor may have imperfect knowledge on the quality of local incumbents and mayors can benefit

from this position to exaggerate their needs and preferences in new infrastructures. Although some incentive devices can emerge from this setting, it may have an important collective costs, as some investment projects with high benefits may be rejected while some others with low benefits may be accepted (Besfamille 2004). Given this setting, it may be efficiency improving for the central state to target municipalities they directly or indirectly know the best and over which they may have higher monitoring power. However, it is likely that members of government have a good knowledge on municipal jurisdictions in which they were born or attended high school, relatively to other jurisdictions. Although this additive knowledge may be higher for municipalities in which a member of government held local office, one would expect a positive private connection effect through this channel, even if it may be lower than the political career connection effect. This is not what we observe, which raises doubts on the existence of this mechanism behind our findings.

Finally, the persistence of the political career connection effect may highlight the fact that with time, a political connection can give rise to a private one, since a politician who had responsibilities in a local jurisdiction may build private links with inhabitants of the municipality. Even if we cannot identify this story in a proper way, there may be no reason for private links built from a political connection to be stronger than links based on childhood.

4 Conclusion

To the best of our knowledge, this paper is the first to use a single framework that enables to distinguish the different motivations underlying the relationship between intergovernmental connections and pork barrel economics.

We use an original data set that contains the detailed curricula of French ministers, their terms in office, and French municipalities' detailed accounts between 2002 and 2011. These data help us to identify governmental subsidies targeted to specific municipalities and to distinguish between alternative motivations by ministers. We provide evidence that municipalities in which a minister held office during her career experience a 45% increase in the amount of discretionary investment subsidies they receive during the time the politician they are linked to

serves as minister. We find that this effect persists once the politician terminates her term, which is consistent with municipalities being able to use their knowledge of the administration they accumulated through their connection, or politicians successfully continuing to lobby once they left office. In contrast, we do not find any evidence that subsidies flow to municipalities from which ministers originate. These findings suggest that politicians follow political motivations instead of kinship considerations when allocating subsidies to municipalities they are connected to. We find that estimates of the political connection effect are not driven by members of government who may have private connections through their childhood in municipalities in which they held office, which comforts the validity of our strategy to disentangle the different motivations behind grants targeting.

We further show that French ministers only tunnel expenditure of the central State. They do not seem to influence lower tiers of government by indirectly targeting subsidies controlled by the latter. We also provide evidence that ministers who are supposed to control smaller budgets perform as well as others in directing subsidies toward their preferred places. These two findings, as well as evidence of persistence of the political career connection effect, advocate in favour of the key role of network and knowledge related to the central political power or administration, instead of the role of exploiting power given by a currently held office in government. The non-significant difference in the persistence of the political career connection effect between left-wing and right-wing members of government suggests that the knowledge of the administration or the network among the central state's civil servants, may matter independently from the affiliation of the current government.

Additional results also allow us to show that subsidies' targeting is rather precise as direct neighbors of politically connected municipalities do not benefit from any increase in the amount of grants they receive. This advocates at first glance in favour of reelection concerns at the municipal level. However, we find that the impact of political career connections is not significantly different when the member of government has still a municipal seat, relatively to the case where she does not have her local office anymore. Therefore, our results suggest that top politicians tend to favour municipalities in which they held office either through reelection concerns in other elections (for which they need local support, or a reputation

built through this municipality), or through an informal contract with current local incumbents. Still, political connections may give rise to private links with municipal inhabitants. Moreover, this targeting in favour of politically connected municipalities can be driven by efficiency motives regarding the asymmetry of information between the central State and local jurisdictions. Although we cannot properly identify this channel, the absence of evidence of a private connection effect challenges this interpretation.

The main caveat of this paper is the limited time span of the panel database we rely on. With a period of ten years, it is not possible to investigate the time length during which a persistence in the political career connection effect remains. Being able to tackle this issue would allow to give more precise insight on mechanisms driving our findings. This calls for further research on pork-barrel politics exploiting long-run information on politicians' career and private background.

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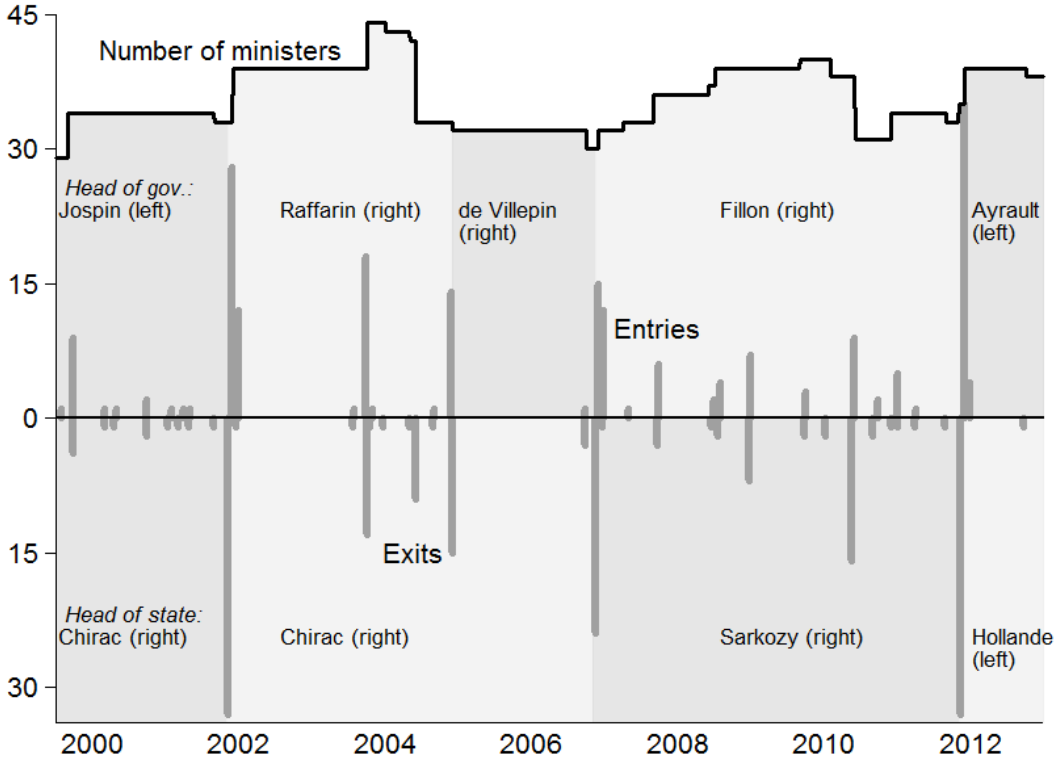
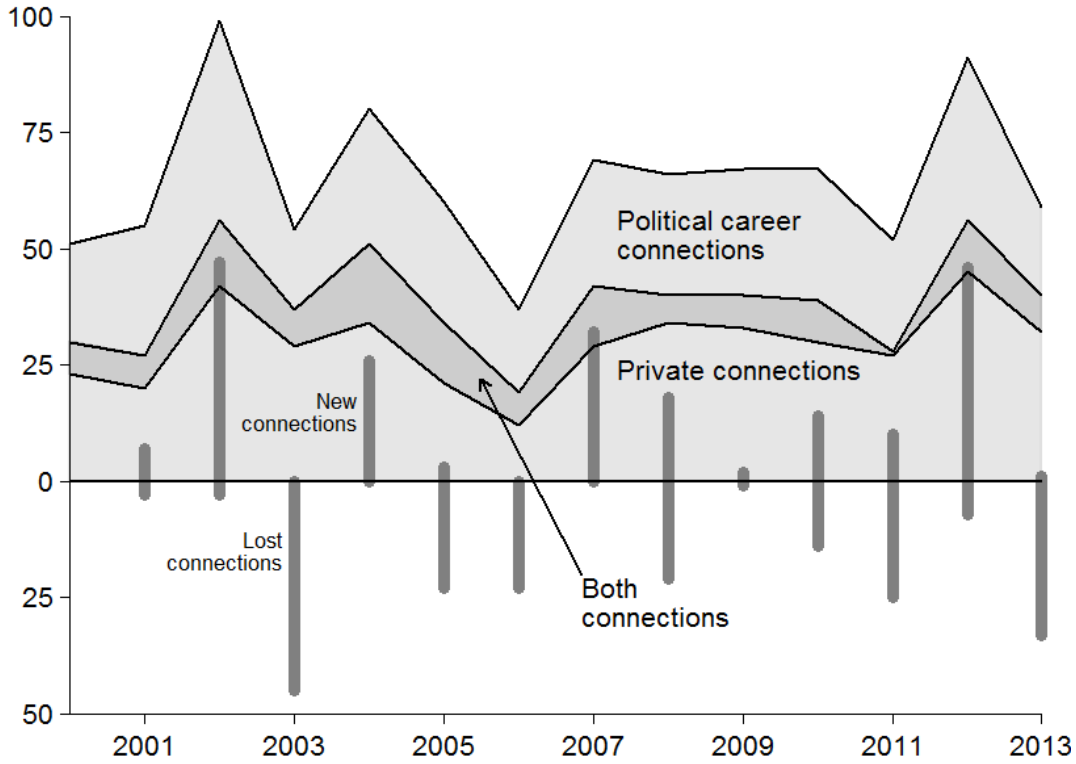
Figure 1: Political majorities and size of government between 2000 and 2013.



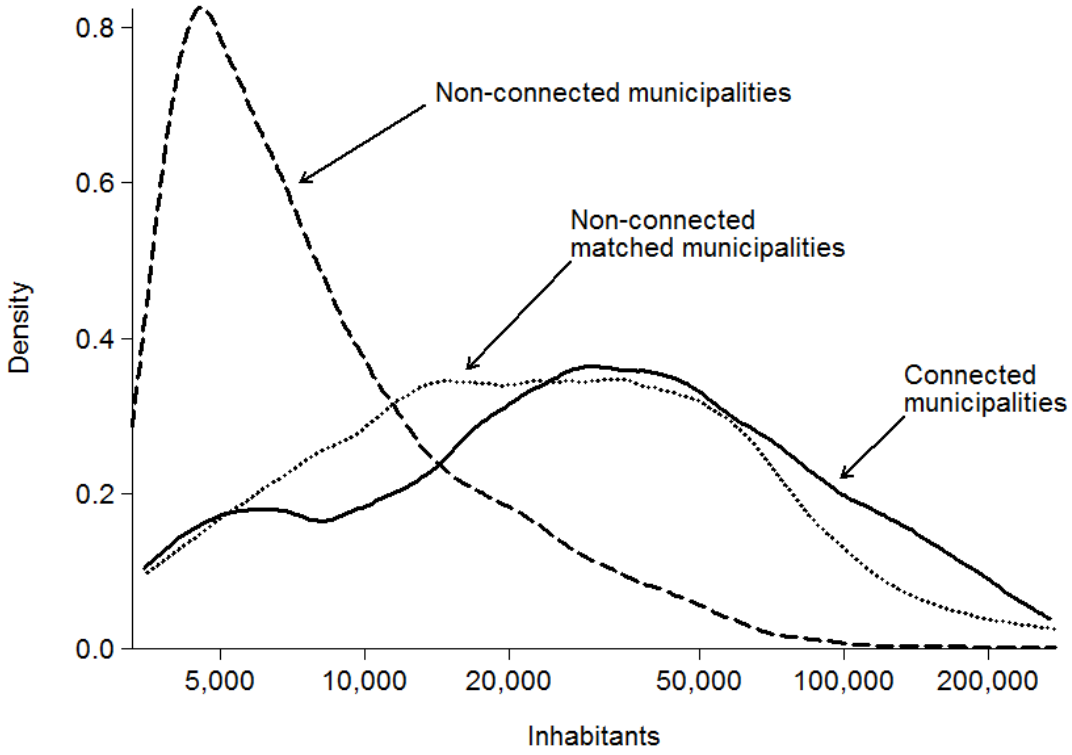
Source: Official composition and daily changes of the French government. Exits followed by re-entries in the government within less than 30 days have been ignored. Entries and exits are aggregated at the monthly level.

Figure 2: Yearly number of connected municipalities between 2000 and 2013.



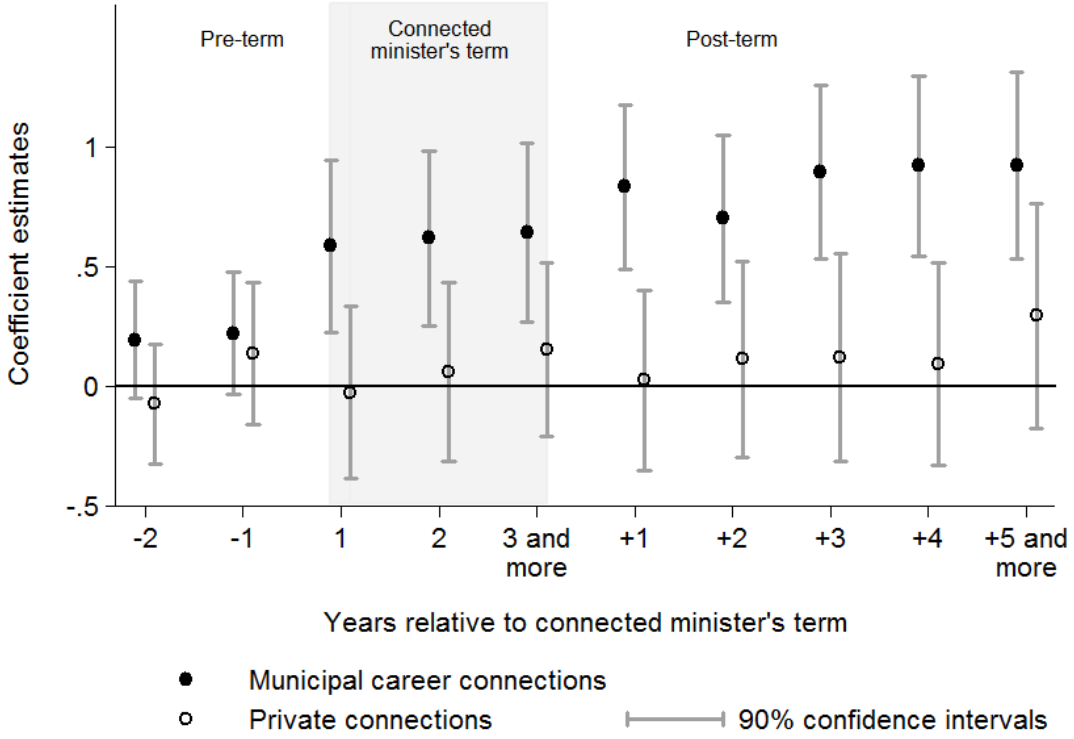
Source: Official composition and daily changes of the French government and authors' original data collection of government's member curricula. A municipality is considered as benefiting from a *political career connection* on year t if a minister who holds office during year t once served as municipal councilor or mayor of this municipality. A municipality is considered as benefiting from a *private connection* on year t if a minister who holds office during year t is born or attended high-school in this municipality. Spikes represent new and lost connections. *New connections* correspond to municipalities that where not connected to any government's member over the previous calendar year. *Lost connections* correspond to municipalities that were connected to a government's member over the previous year but not during the current year anymore.

Figure 3: Size distributions of connected and non-connected municipalities.



Source: Authors' calculation. The 169 *connected municipalities* are municipalities that benefit from at least one private or political connection to a current government's member between 2002 and 2011. The 2,320 *non-connected municipalities* are municipalities that did not benefit from any connection to a current government's member between 2002 and 2011. The 134 *non-connected matched municipalities* are a sub-group of non-connected municipalities selected following a matching procedure. See Table 1 for descriptive statistics on this matched sample, and Section A.1 in Appendix for a full description of this matching procedure.

Figure 4: The dynamics of connections (full sample).



Source: Authors' calculation. Estimates are from an OLS regression of the log of yearly per capita discretionary investment grants received by a municipality from the central government on year and municipality fixed effects, and a series of dummy variables defined relatively to the term of the minister to which the municipality is connected. For both kinds of connection (private and political), we include two dummies for the two years before treatment (-2, -1), two other ones for the two first years of treatment (1, 2), one dummy for all subsequent years of treatment (3 and more), four dummies for the four first years of post-treatment (+1, +2, +3, +4), and one last dummy for all subsequent years of post-treatment (5 and more). The regression also includes interaction terms between the two types of connection. Standard errors are clustered at the municipality level. The sample is made of all French municipalities with more than 3,500 inhabitants. Estimates have been horizontally shifted for aesthetic considerations.

Table 2: Effect of being politically or privately connected to a current government's member on discretionary investment grants received by a municipality.

Dependent variable : Per capita grants received from the central government (log of)

	(1)	(2)	(3)
Sample:	Full	$\geq 10,000$ inh.	Matched
Any connection	0.300**	0.265**	0.203
	(0.117)	(0.133)	(0.143)
Any terminated connection	0.372***	0.256*	0.103
	(0.120)	(0.143)	(0.150)
	(4)	(5)	(6)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.490***	0.521***	0.452**
	(0.164)	(0.147)	(0.211)
Terminated political career connection	0.695***	0.586***	0.434**
	(0.158)	(0.176)	(0.189)
Private connection	0.037	-0.047	-0.072
	(0.165)	(0.219)	(0.190)
Terminated private connection	0.046	-0.099	-0.171
	(0.182)	(0.231)	(0.220)

*** p<0.01, ** p<0.05, * p<0.1. White heteroskedastic standard errors clustered at the municipality level in parentheses. OLS regressions. Each column presents estimates from a separate regression. All regressions include a constant term, year and municipality fixed effects. Regressions presented in columns 4–6 also include interaction terms between the two types of connections. The dependent variable is the log of yearly per capita discretionary investment grants received by a municipality from the central government. *Political career connection* and *private connection* are dummy variables equal to 1 if the municipality is politically or privately connected to a current government's member (see the text for the definitions of connections). *Terminated political career connection* and *terminated private connection* are dummy variables equal to 1 if a municipality was, but is not anymore, connected to a government's member. *Any connection* and *any terminated connection* do not distinguish between political career and private connections. The full sample is made of all French municipalities of more than $3,500$ inhabitants. The $\geq 10,000$ inhabitants sample is made of all French municipalities of more than $10,000$ inhabitants. The matched sample has been constructed following a matching procedure on the probability for a municipality to benefit from any type of connection. See Table 1 for descriptive statistics on these three samples, and Subsection A.1 in Appendix for a description of the propensity score matching implementation.

Table 1: Differences in observable characteristics across connected and non-connected municipalities.

	Full sample			$\geq 10,000$ inh.			Matched		
	Connected municipalities	Non-connected municipalities	P-val. of diff.	Connected municipalities	Non-connected municipalities	P-val. of diff.	Connected municipalities	Non-connected municipalities	P-val. of diff.
Population (log of)	10.26	8.99	0.00	10.66	9.90	0.00	9.99	10.02	0.84
Share of pop. under 14	0.18	0.19	0.00	0.18	0.20	0.00	0.18	0.18	0.81
Share of pop. over 65	0.17	0.16	0.02	0.16	0.15	0.03	0.17	0.18	0.86
Median income per UC (log of)[1]	9.75	9.77	0.20	9.76	9.76	0.84	9.74	9.72	0.35
Unemployment rate[2]	0.13	0.11	0.00	0.13	0.12	0.05	0.13	0.13	0.40
Share of self-employed workers[3]	0.06	0.06	0.00	0.05	0.06	0.04	0.06	0.06	0.96
Share of high-skilled workers[3]	0.16	0.13	0.00	0.18	0.14	0.00	0.15	0.15	0.50
Right-wing vote share at last municipal elec.	0.50	0.45	0.01	0.50	0.44	0.00	0.50	0.49	0.72
Right-wing vote share at the 2002 presidential elec.	0.38	0.35	0.00	0.37	0.34	0.00	0.38	0.37	0.52
Right-wing mayor	0.33	0.45	0.00	0.32	0.45	0.01	0.33	0.37	0.44
Mayor is member of the parliament	0.38	0.07	0.00	0.44	0.15	0.00	0.31	0.32	0.79
P.c. housing tax base (log of)	7.06	6.90	0.00	7.08	6.97	0.00	7.05	7.04	0.88
P.c. property tax base on built assets (log of)	7.06	6.82	0.00	7.07	6.93	0.00	7.04	7.02	0.75
P.c. property tax base on non-built assets (log of)	1.84	2.48	0.00	1.64	1.90	0.00	1.98	1.98	0.98
P.c. business tax base (log of)	7.37	7.03	0.00	7.42	7.22	0.00	7.32	7.35	0.73
Belongs to a *communauté de communes*[4]	0.23	0.37	0.00	0.15	0.22	0.06	0.26	0.30	0.50
Belongs to a *communauté d'agglomération*[4]	0.36	0.29	0.05	0.40	0.34	0.17	0.31	0.28	0.60
Belongs to a *communauté urbaine*[4]	0.09	0.10	0.54	0.10	0.17	0.06	0.07	0.09	0.66
Shared tax decisions[4]	0.17	0.21	0.19	0.13	0.15	0.47	0.18	0.19	0.75
# of municipalities	169	2,320		136	679		134	134	

The set of covariates presented in this table is the one used in the propensity score matching procedure. See Subsection A.1 in Appendix for a description of these variables. *P.c.* stands for "per capita". *Elec.* stands for "election". *P-val. of diff.* stands for "p-value of difference". All variables are measured in 2001, except *Right-wing vote share at the* 2002 *presidential election* which is measured in 2002, and variables on local tax bases, for which we do have information only from 2002. Then, this table comes from a sample with one observation per municipality, with no panel dimension. *Connected municipalities* are municipalities that benefit from a political career or a private connection to a government's member at least once between 2002 and 2011 (see the text for the definitions of connections). The full sample is made of all French municipalities of more than 3,500 inhabitants. The $\geq 10,000$ inhabitants sample is made of all French municipalities of more than 10,000 inhabitants. The matched sample has been constructed following a matching procedure on the probability for a municipality to benefit from any type of connection (see Subsection A.1 in Appendix for more details on this matching procedure).

[1] UC : unit of consumption. It is a measure of household size: 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 is the unemployment rate among the labour force between 25 and 54 years old.

[3] : These variables provide a decomposition of the active labour force between 25 and 54 years old in terms of socio-professional categories.

[4] : *Communauté de communes*, *communauté d'agglomération*, and *communauté urbaine* refer to status of inter-municipal cooperation. *Shared tax decisions* is a dummy relative to the fiscal sharing between municipalities and their inter-municipal community. See Subsection A.1 in Appendix for an explanation of these variables related to intermunicipal cooperation.

Table 3: Effect of being politically or privately connected to a current government's member on discretionary investment grants received by a municipality: *robustness tests*.

Dependent variable : Per capita grants received from the central government (log of), except if differently specified			
Per capita *dotation globale de fonctionnement* (log of) as dependent variable			
	(1)	(2)	(3)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	-0.013	-0.020	-0.035
	(0.036)	(0.042)	(0.042)
Private connection	-0.092**	-0.079*	-0.038
	(0.043)	(0.047)	(0.050)
Excluding transition years			
	(4)	(5)	(6)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.438***	0.425***	0.393*
	(0.162)	(0.130)	(0.225)
Private connection	0.081	-0.023	-0.036
	(0.171)	(0.208)	(0.192)
Including lagged dependent variable as explanatory variable			
	(7)	(8)	(9)
Sample:	Full	$\geq 10,000$ inh.	Matched
Lagged dependent variable	0.138***	0.193***	0.146***
	(0.009)	(0.016)	(0.027)
Political career connection	0.356***	0.252**	0.432***
	(0.121)	(0.110)	(0.163)
Private connection	-0.061	-0.118	-0.082
	(0.169)	(0.212)	(0.180)
Different matched samples			
	(10)	(11)	(12)
	Matched on	Matched on	Union of
Sample:	political connections	private connections	both samples
Political career connection	0.329**		0.350**
	(0.138)		(0.135)
Private connection		-0.018	-0.130
		(0.182)	(0.164)
Heterogeneity - parachuting according to the *département*			
	(13)	(14)	(15)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.600*	0.438	0.891**
	(0.324)	(0.305)	(0.402)
Political career connection × (Parach. in another *département*)	-0.140	0.126	-0.536
	(0.366)	(0.338)	(0.465)
Private connection	0.035	-0.048	-0.064
	(0.167)	(0.224)	(0.194)
Heterogeneity - parachuting according to the *région*			
	(16)	(17)	(18)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.475*	0.528**	0.512
	(0.269)	(0.235)	(0.396)
Political career connection × (Parach. in another *région*)	0.075	0.038	-0.093
	(0.311)	(0.286)	(0.436)
Private connection	0.031	-0.056	-0.073
	(0.165)	(0.219)	(0.194)

*** p<0.01, ** p<0.05, * p<0.1. White heteroskedastic standard errors clustered at the municipality level in parentheses. OLS regressions. Each column presents estimates from a separate regression. All regressions include a constant term, year and municipality fixed effects, as well as variables corresponding to terminated connections (see Table 2 and Equation (1)), and interaction terms between the two types of connections. The dependent variable is the log of yearly per capita discretionary investment grants received by a municipality from the central government, except in columns 1–3 where the dependent variable is the log of yearly per capita *dotation globale de fonctionnement* (a formula-based item). *Political career connection* and *private connection* are dummy variables equal to 1 if the municipality is politically or privately connected to a current government's member (see the text for the definitions of connections). In columns 4–6, observations that correspond to a connected municipality's first and last years in treatment are excluded from the sample. The full sample is made of all French municipalities of more than $3,500$ inhabitants. The $\geq 10,000$ inhabitants sample is made of all French municipalities of more than $10,000$ inhabitants. The matched sample has been constructed following a matching procedure on the probability for a municipality to benefit from any type of connection. The sample used in column 10 has been constructed following a matching procedure that considers as treated municipalities that benefit from a political career connection. The sample used in column 11 has been constructed following a matching procedure that considers as treated municipalities that benefit from a private connection. The sample used in columns 12 is the union of the two preceding ones. See Subsection A.1 in Appendix for a description of our matching procedures and for summary statistics on each matched sample. Columns 13–18 present results of regressions where we introduce heterogeneity of the political career connection effect according to political *parachuting* (denoted *Parach.* in the table). We use two proxies for political parachuting, respectively in columns 13–15 and 16–18. See the text for the definition of these two proxies.

Table 4: Effect of being politically or privately connected to a current government's member on discretionary investment grants received by a municipality: *additional evidence*.

Dependent variable : Per capita grants received from the central government (log of), except if differently specified			
	(1)	(2)	(3)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.489***	0.487***	0.392**
	(0.143)	(0.132)	(0.157)
Political career connection × High rank minister	-0.052	-0.178	-0.072
	(0.219)	(0.236)	(0.223)
Per capita grants received from the *département* (log of) as dependent variable			
	(4)	(5)	(6)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.131	0.113	0.058
	(0.129)	(0.151)	(0.143)
Per capita grants received from the *région* (log of) as dependent variable			
	(7)	(8)	(9)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.056	0.021	0.017
	(0.128)	(0.136)	(0.145)
	(10)	(11)	(12)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.432***	0.416***	0.373***
	(0.131)	(0.107)	(0.133)
Politically connected neighbor	-0.096	-0.160	-0.174**
	(0.085)	(0.134)	(0.088)
	(13)	(14)	(15)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.479***	0.530***	0.326**
	(0.149)	(0.126)	(0.159)
Political career connection × Terminated municipal term	-0.155	-0.498**	0.007
	(0.269)	(0.237)	(0.294)
No municipal fixed effects			
	(16)	(17)	(18)
Sample:	Full	$\geq 10,000$ inh.	Matched
Political career connection	0.856***	0.742***	0.465*
	(0.223)	(0.220)	(0.243)
Terminated political career connection	0.971***	0.570***	0.306**
	(0.127)	(0.140)	(0.154)
Political career connection × Right-wing minister	0.043	-0.089	-0.186
	(0.261)	(0.263)	(0.282)
Terminated political career connection × Right-wing minister	0.098	0.209	0.053
	(0.235)	(0.237)	(0.248)

*** p<0.01, ** p<0.05, * p<0.1. White heteroskedastic standard errors clustered at the municipality level in parentheses. OLS regressions. Each column presents estimates from a separate regression. Regressions presented in columns 1–15 include a constant term, year and municipality fixed effects, as well as variables corresponding to terminated political connections (see Table 2 and Equation (1)). Regressions presented in columns 16–18 omit municipality fixed effects. The dependent variable is the log of yearly per capita discretionary investment grants received by a municipality from the central government, except in columns 4–6 and 7–9 where the dependent variable is the log of yearly per capita investment grants received by a municipality from the *départements* and the *régions*, respectively. *Political career connection* is a dummy variables equal to 1 if the municipality is politically or privately connected to a current government's member (see the text for more details). *High rank minister* is a dummy variable equal to 1 if the minister to which the municipality is connected currently serves as *ministre*, *ministre d'état* or *premier ministre* rather than as *secrétaire d'état* or *ministre délégué* (see the text for details). *Politically connected neighbor* is a dummy variable equal to 1 if a municipality's direct neighbor benefits from a political connection to a current minister. *Terminated municipal term* is a dummy variable equal to 1 if the minister to which the municipality is connected has terminated her term as municipal counselor. *Right-wing minister* is a dummy variable equal to 1 if the minister to which the municipality is connected currently serves in a right-wing government. The full sample is made of all French municipalities of more than $3,500$ inhabitants. The $\geq 10,000$ inhabitants sample is made of all French municipalities of more than $10,000$ inhabitants. The matched sample has been constructed following a matching procedure on the probability for a municipality to benefit from a political connection, except in column 12 where it is made from the union of the preceding one and of a sample constructed following a matching procedure on the probability for a municipality to have a direct neighbor that benefits from a political connection. See Subsection A.1 in Appendix for a description of our matching procedures and for summary statistics on each matched sample.

Appendix

A.1 Propensity score matching

To construct the matching sample mentioned in Section 2 and described in the right part of Table 1, we first run a probit model explaining our dummy of treatment. Since we simultaneously investigate the impact of private and political career connections, the dependent variable in this probit is a dummy equal to one if the municipality has been privately or politically connected at least once over the period covered by data on subsidies (2002–2011). Therefore, we run this model on a database which contains one observation per municipality (with no panel dimension). As we have to take explanatory variables which are not impacted by our connection dummy, we consider values covariates take in 2001. Estimates from this probit model allow us to compute a predicted probability of treatment for each municipality and to match treated jurisdictions with non-treated ones on the basis of this predicted probability. We apply a one-to-one matching, without replacement, with a caliper of 0.05.

The matching procedure has to be implemented with covariates which are suspected to have an impact either on discretionary investment grants, or on the probability of treatment. First, we include the log of total municipal population. Some municipal investments may need a critical size in terms of inhabitants to be funded. In such cases, the central state may allocate more investment grants to smaller jurisdictions. At the same time, it is possible that members of government, because of their high political skills, managed to get municipal offices in bigger municipalities. Second, we include 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 facilities are intended to young people (e.g. primary schools, cultural activities) and elderly people (e.g. retirement houses), one can expect a positive relationship between these variables and needs in municipal investment. We also consider the log of median inhabitants' income per unit of consumption.[19]

[19]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.

and the municipal unemployment rate as one can expect that the central state uses discretionary grants as a tool for redistribution and help toward households out of employment.[20] We also include the log of the net value per head of each municipal tax base, as these variables are good indicators of fiscal revenues local jurisdictions can raise for their investment.[21] We also include the share of self-employed among the population in employment, as well as the share of high-skilled workers (used as a proxy of higher education). These two variables aim at capturing local preferences of voters for redistribution. They may have explanatory power on discretionary investment grants, since public investment corresponds to future in-kind redistribution.[22] Our set of covariates counts also municipal political factors. We include the share of votes got by the first right-wing candidate in 2001 municipal elections as well as the sum of shares of votes got in the municipality by all right-wing candidates in the 2002 presidential election.[23] The support for right-wing politics may capture some components of voters preferences for public investment. At the same time, since the central government is right-wing during almost all the period covered by data on subsidies (see Figure 1), these variables are likely to be correlated with the probability of being connected with a member of government. We also include a dummy equal to one if the mayor of the municipality has concurrently a seat at the National Parliament. Such a connection with the

[20] We take the median income instead of the mean, since this last indicator is by definition highly impacted by extreme values in the distribution of income.

[21] These variables could be seen as being redundant with median income. However, French local taxes are mainly based on real assets. Then, municipalities with the same median income can have different values of tax bases. There are four municipal taxes in France. The housing tax (*la taxe d'habitation*) is paid by residents on the cadastral value of their accommodation. The property tax on built estate (*la taxe foncière sur les propriétés bâties*) is paid by owners (households and firms) on the cadastral value of their real estate. The property tax on unbuilt estate is similar to the previous tax, but based on unbuilt lands. Finally, the local business tax (*la taxe professionnelle*) is paid by firms on their real estate and their production facilities. While tax bases computation is not over the control of the municipality, municipal councillors decide tax rates and some tax base reductions for these four fiscal tools. For these variables on tax bases, we take the value in 2002 instead of 2001, as we do not have any information on them for previous years.

[22] Alesina and Ferrara (2005) show that self-employed have a lower preference for redistribution, which could be explained by a lower risk-aversion or a more "individualistic behaviour" of this category of worker. Moreover, Alesina and Giuliano (2011) show that higher education has a negative impact on preferences for redistribution, which can be interpreted as the result of expectations of social mobility due to higher education.

[23] As for tax bases, we consider the year 2002 instead of 2001 for this variable.

central political power is likely to have an impact on investment grants targeted to the municipality. Moreover, a mayor holding a position in Parliament may be more likely to get an office in government than other municipal incumbents. Finally, our matching procedure includes covariates related to intermunicipal cooperation. Municipalities can decide to cooperate for the provision of public goods for which there are potential economies of scale, through the creation of an inter-municipal community (IMC). These groups of jurisdictions have to choose between different degrees of cooperation, each degree being related to a formal status of IMC. Status in place during the investigated period can be listed from the lowest to the highest degree of cooperation as follows: *communauté de communes* (CC), *communauté d'agglomération* (CA), and *communauté urbaine* (CU). We add a dummy for each of these status. Although there is mixed evidence on the impact of inter-municipal cooperation on municipal spending (Frère et al. (2014), Guengant and Leprince (2006), Leprince and Guengant (2002)), one could expect that municipalities with a high degree of cooperation will undertake less investment, as a result of a delegation to the community. In addition to chose such a status, IMCs and municipalities have to define a sharing rule of local taxation. Either the IMC has the responsibility of the local business tax while municipalities keep the competency of all other local taxes, or each tax is subject to a shared competency.[24] The first solution may be correlated with a higher willingness to redistribute resources among municipalities of the IMC, as economic activity may be more geographically concentrated than households. This factor may have an explanatory power on grants, since this degree of willingness to redistribute may be correlated with lower needs in external funding from the central state. This is why we include a dummy equal to one for municipalities in IMCs with no fiscal specialization between municipalities and their cooperation body.

In robustness checks of columns 10–12 of Table 3, we rely on matched samples related to each kind of connection. In other words, we implement the same above procedure by considering one kind of connection, instead of a dummy equal to one if the municipality is politically or privately connected. This leads to the construction of two additive matched sample: one based on political career connections, and another one based on private links. The matched sample with respect to political

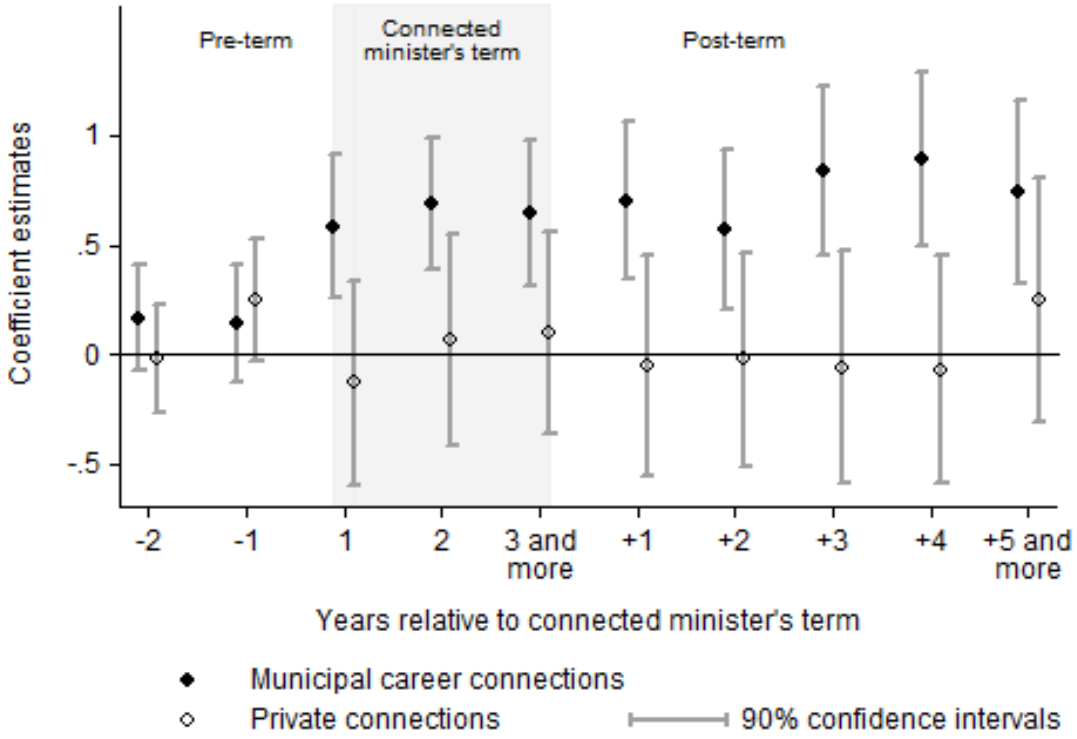
[24]See the above description of local taxes in footnote.

career connections is also used for the investigation of mechanisms presented in Subsection 3.3. To estimate the grants targeting toward neighbors of connected municipalities, we create a fourth matched sample through the same procedure, where the treatment of interest is being the neighbor of a politically connected municipality at least once over the sample period.

While balancing tests in terms of covariates for the matched sample based on the treatment of being subject to any kind of connection are presented in the right part of Table 1, Table A1 provides similar statistics for the three other matched samples. These tables suggest that our matchings are very efficient in removing differences in observables between the treated and the control group. Table A2 provides summary statistics on each of our four matching implementations. The p-value of joint significance of the probit model goes from almost zero to almost one when we moves from the unmatched sample to any of the four samples constructed through our propensity score matching. The pseudo-R-squared of the probit model also drops substantially for the four procedures. These statistics mean that once one moves to any of the four matched samples, there is no evidence of differences in terms of investigated covariates between treated and untreated municipalities through the same probit model used for the matching procedure. Finally, the median absolute standardized bias defined by Rosenbaum and Rubin (1985) always goes down when we move from unmatched to matched samples.[25]

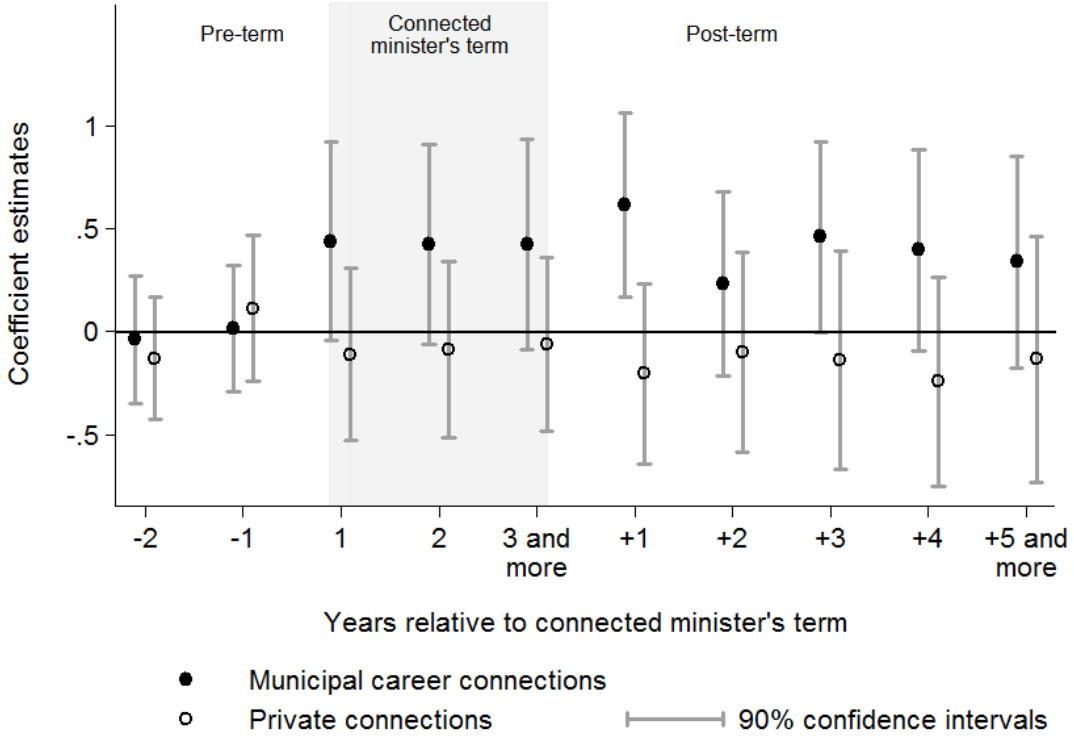
[25]The "standardized bias" between the treated and the control group for a given covariate x is defined as: $100.\frac{\overline{x_1}-\overline{x_0}}{\sqrt{\frac{1}{2}(V_1(x)+V_0(x))}}$, where $\overline{x_1}$ (respectively $\overline{x_0}$) is the mean of the covariate among treated (respectively untreated) units, while $V_1(x)$ (respectively $V_0(x)$) is the variance among treated (respectively untreated) observations. The median absolute standardized bias is the median of the absolute value of this statistics across the different covariates.

Figure A1: The dynamics of connections (municipalities over 10, 000 inhabitants).



Source: Authors' calculation. Estimates are from an OLS regression of the log of yearly per capita discretionary investment grants received by a municipality from the central government on year and municipality fixed effects, and a series of dummy variables defined relatively to the term of the minister to which the municipality is connected. For both kinds of connection (private and political), we include two dummies for the two years before treatment (-2, -1), two other ones for the two first years of treatment (1, 2), one dummy for all subsequent years of treatment (3 and more), four dummies for the four first years of post-treatment (+1, +2, +3, +4), and one last dummy for all subsequent years of post-treatment (5 and more). The regression also includes interaction terms between the two types of connection. Standard errors are clustered at the municipality level. The sample is made of municipalities with more than 10, 000 inhabitants. Estimates have been horizontally shifted for aesthetic considerations.

Figure A2: The dynamics of connections (matched sample).



Source: Authors' calculation. Estimates are from an OLS regression of the log of yearly per capita discretionary investment grants received by a municipality from the central government on year and municipality fixed effects, and a series of dummy variables defined relatively to the term of the minister to which the municipality is connected. For both kinds of connection (private and political), we include two dummies for the two years before treatment (-2, -1), two other ones for the two first years of treatment (1, 2), one dummy for all subsequent years of treatment (3 and more), four dummies for the four first years of post-treatment (+1, +2, +3, +4), and one last dummy for all subsequent years of post-treatment (5 and more). The regression also includes interaction terms between the two types of connection. Standard errors are clustered at the municipality level. The sample is made of matched municipalities according to the treatment of being privately or politically connected. See Subsection A.1 in Appendix for details on the matching procedure. Estimates have been horizontally shifted for aesthetic considerations.

Table A2: Summary of propensity score matching procedures.

	Match on any connection	Match on political connections	Match on private connections	Match on politically connected neighbors
# of matched treated obs.	134	104	77	344
# of treated obs. out of the common support	35	3	18	2
# of matched non-treated obs.	134	104	77	344
Pseudo-R^2 of the probit before matching	0.371	0.346	0.399	0.130
Pseudo-R^2 of the probit after matching	0.012	0.025	0.053	0.005
$p > \chi^2$ of the probit before matching	0.000	0.000	0.000	0.000
$p > \chi^2$ of the probit after matching	1.000	0.993	0.916	0.999
Median absolute bias before matching	32.4	30.9	35.2	35.8
Median absolute bias after matching	3.8	5.8	7.2	3.2

This table summarizes the different propensity score matching procedures used in the paper. The method used is the "nearest neighbor matching without replacement", with a caliper of 0.05. Matching procedures are based on a probit model, using all covariates listed in Tables 1 and A1 as explanatory variables. The original sample is always the full sample made of all French municipalities of more than $3,500$ inhabitants. The median bias before and after matching are median absolute standardized bias as defined by Rosenbaum and Rubin (1985). The "standardized bias" between the treated and the control group for a given covariate x is defined as: $100.\frac{\overline{x_1}-\overline{x_0}}{\sqrt{\frac{1}{2}(V_1(x)+V_0(x))}}$, where $\overline{x_1}$ (respectively $\overline{x_0}$) is the mean of the covariate among treated (respectively untreated) units, while $V_1(x)$ (respectively $V_0(x)$) is the variance among treated (respectively untreated) observations. The median absolute standardized bias is the median of the absolute value of this statistics across the different covariates.

Table A1: Differences in observable characteristics across connected and non-connected municipalities for alternative matched samples.

	Match on political connections			Matched on private connections			Match on politically connected neighbors		
	Treated municipalities	Non-treated municipalities	P-val. of diff.	Treated municipalities	Non-treated municipalities	P-val. of diff.	Treated municipalities	Non-treated municipalities	P-val. of diff.
Population (log of)	10.3	10.27	0.84	10.12	10.14	0.89	9.4	9.36	0.54
Share of pop. under 14	0.18	0.18	0.83	0.18	0.17	0.66	0.19	0.19	0.45
Share of pop. over 65	0.16	0.16	0.86	0.17	0.17	0.64	0.14	0.14	0.92
Median income per UC (log of)[1]	9.73	9.76	0.38	9.73	9.77	0.28	9.85	9.85	0.69
Unemployment rate[2]	0.13	0.12	0.24	0.13	0.12	0.44	0.1	0.1	0.94
Share of self-employed workers[3]	0.06	0.06	1	0.06	0.06	0.81	0.06	0.06	0.5
Share of high-skilled workers[3]	0.16	0.17	0.38	0.16	0.18	0.29	0.16	0.16	0.55
Right-wing vote share at last municipal election	0.5	0.5	0.84	0.52	0.48	0.09	0.45	0.44	0.64
Right-wing vote share at last presidential election	0.37	0.38	0.43	0.38	0.39	0.51	0.35	0.35	0.66
Right-wing mayor	0.34	0.37	0.66	0.27	0.31	0.6	0.47	0.48	0.76
Mayor is member of the parliament	0.44	0.49	0.49	0.34	0.27	0.38	0.13	0.13	1
Per capita housing tax base (log of)	7.07	7.07	0.93	7.01	7.02	0.79	7.07	7.07	0.95
Per capita property tax base on built assets (log of)	7.08	7.09	0.89	6.97	7	0.67	7	6.98	0.58
Per capita property tax base on non-built assets (log of)	1.83	1.79	0.62	1.86	1.82	0.7	2.14	2.14	0.98
Per capita business tax base (log of)	7.35	7.22	0.39	7.35	7.43	0.38	7.2	7.19	0.9
Belongs to a *communauté de communes*[4]	0.17	0.18	0.86	0.32	0.29	0.6	0.13	0.11	0.56
Belongs to a *communauté d'agglomération*[4]	0.37	0.32	0.47	0.35	0.34	0.87	0.39	0.42	0.44
Belongs to a *communauté urbaine*[4]	0.1	0.13	0.39	0.1	0.12	0.8	0.14	0.14	1
Shared tax decisions[4]	0.15	0.17	0.71	0.22	0.23	0.85	0.1	0.08	0.28
# of municipalities	104	104		77	77		344	344	

This table provides the same picture as the three last columns of Table 1, but for the three other matched samples we rely on in this paper. *P.c.* stands for "per capita". *Elec.* stands for "election". *P-val. of diff.* stands for "p-value of difference". All variables are measured in 2001, except *Right-wing vote share at the* 2002 *presidential election* which is measured in 2002, and variables on local tax bases, for which we do have information only from 2002. Then, this table comes from a sample with one observation per municipality, with no panel dimension. *Connected municipalities* are municipalities that benefit from a political career or a private connection to a government's member at least once between 2002 and 2011 (see the text for the definitions of connections). The full sample is made of all French municipalities of more than $3,500$ inhabitants. The $\geq 10,000$ inhabitants sample is made of all French municipalities of more than $10,000$ inhabitants. The matched sample has been constructed following a matching procedure on the probability for a municipality to benefit from any type of connection (see Subsection A.1 in Appendix for more details on this matching procedure).

[1] UC : unit of consumption. It is a measure of household size: 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 is the unemployment rate among the labour force between 25 and 54 years old.

[3] : These variables provide a decomposition of the active labour force between 25 and 54 years old in terms of socio-professional categories.

[4] : *Communauté de communes*, *communauté d'agglomération*, and *communauté urbaine* refer to status of inter-municipal cooperation. *Shared tax decisions* is a dummy relative to the fiscal sharing between municipalities and their inter-municipal community. See the text of this Appendix subsection for an explanation of these variables related to intermunicipal cooperation.