Pay for politicians and political investment: Evidence from the French municipal elections

Nicolas Gavoille[*]

Abstract

This paper studies the relationship between politicians' wage and the value of a political office. I construct for this purpose a dataset containing the campaign account of all the candidates running in municipalities of more than 9,000 inhabitants at the 2008 and 2014 municipal elections in France, for a total of more than 8,000 observations. Candidates' campaign expenditure are almost exclusively composed of their own contribution, which constitutes a real political investment. I use a regression discontinuity design, exploiting a population threshold in the pay of the mayor. The results show that around the 20,000 inhabitant threshold, the wage *negatively* impacts the candidates' political investment. This puzzling result is not only statistically significant, but also economically sizeable: taking into account all the candidates, candidates running in municipalities right above the threshold spend about 2,300 euros less in their campaign than candidates running just below the threshold.

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[*]Stockholm School of Economics in Riga, Strelnieku iela 4a, Riga LV-1010 - Latvia and Condorcet Center for Political Economy, Université de Rennes 1, Faculté de Sciences Economiques, 7 place Hoche, 35000 Rennes - France. E-mail : nicolas.gavoille@sseriga.edu.

1 Introduction

In labor economics, firms face both adverse selection and moral hazard issues when contracting with employees. In light of the efficiency wage theory, increasing wages can help to mitigate these issues, leading to higher workers' productivity. A higher wage attracts applicants of better quality (Shapiro and Stiglitz, 1984), and increases the willingness to obtain (and keep) the job (Becker and Stigler, 1974; Weiss, 1980). The question is whether these mechanisms also apply to the political labor market, where voters - the principals - have to select agents - politicians - to run political offices. Singapore adopted in 1994 a salary scheme proposing a very important remuneration for its elected officials and civil servants, with the explicit aim to attract the most competent candidates[1]. The Singaporean Prime Minister tops the list of the highest-paid politicians in the world. At the opposite, the remuneration of New Hampshire legislators is kept to 100$ a year, based on the idea that wage should not be a motivation so that only 'public spirited' politicians run for election.

These competing rationales find an echo in the theoretical literature on the impact of wage on the behaviour and selection of politicians. Caselli and Morelli (2004) show that an increase of wage leads to an increase of politicians' quality, as it attracts candidates with a higher opportunity cost[2], and Besley (2004) shows that it would induce politicians to take care about voters' preferences and reduce shirking. On the other hand, Messner and Polborn (2004), Poutvaara and Takalo (2007) and Mattozzi and Merlo (2008) provide models in which increasing the pay of politicians may decrease their average quality. Gagliarducci et al. (2010) show that there might be a trade off between the quality of politicians and their level of effort. Besley (2005) suggests that the effect of an increase in pay depends on the relative strength of extractable rents and public service motivation of politicians.

Whether and how the pay of politicians affects their behaviour and willingness to run for office ultimately remains an empirical question. The evidence that remuneration affects the behaviour of politicians or who chooses to run for office is however mixed and rather scarce. Ferraz and Finan (2009), Gagliarducci and Nan-

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[1]The motivations are developed in the *Competitive Salaries for Competent and Honest Government*, 1994.

[2]The underpinning assumption is that competence on the (private) labor market and political skills are correlated.

nicini (2013), respectively in the case of the Brazilian local legislators and the Italian mayors, find that higher wages attract more educated and wealthy candidates, whereas Pique (2017), studying Peruvian mayors, shows that wage has a negative impact on mayoral selection and municipal performance, but no effect on the pool of candidates. Exploiting a base pay harmonization for the members of the European Parliament, Fisman et al. (2015) find a negative impact of pay on elected politicians' quality (measured by college quality) and no impact on effort, whereas Braendle (2015) do not find any evidence of a change in the MEPs' characteristics. Kotakorpi and Poutvaara (2011) find that the increase of Finish MPs' salaries increased the average education of female candidates only.

This paper adopts an alternative, complementary approach to study whether wage affects politicians' willingness to run for office. I examine the relationship between the pay for politicians and the *personal* financial investment of the candidates at the French municipal elections into their own campaign. Contrary to many countries, donations by companies is strictly prohibited, and about 80% of candidates' campaign budget is composed of their personal contribution. If political remuneration plays a role in the attractiveness of political office, the willingness to invest personal financial resources in the campaign should vary accordingly. I use for this purpose a dataset providing information about all the candidates running for French municipal elections in 2008 and 2014 in municipalities of more than 9,000 inhabitants, providing a total of 8,129 individual candidates[3].

To identify the effect of wage on political investment, I exploit the sharp population thresholds determining the wage of the elected mayor. In a first step, I apply a RD design at the 20,000 threshold to control for unobservable municipal characteristics and the unobserved returns to office and test whether the wage of politicians affects their political investment. There exist seven population threshold, but I focus on the threshold at 20,000 inhabitants for four reasons. First, the mayor of a municipality of 19 999 inhabitants receives a wage of 2,470 euros per month, whereas the mayor of a municipality of 20,000 receives a wage of 3,421 euros. This is a significant

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[3]Candidates running for a municipal office in a municipality of more than 9,000 inhabitants must provide an electoral campaign return to the *Commission Nationale des Comptes de Campagnes et des Financements Politiques* (CNCCFP, National Committee for Campaign Return and Political Financing), an official committee controlling for the respect of the electoral rules. Data does not exist for smaller municipalities.

increase, equivalent to a pay raise of 38%[4]. Second, for any population thresholds the pay of the mayor comes with other policy changes. For instance, at the 1000 threshold, the electoral system switches from a majoritarian to a proportional system[5]. At the 20,000 threshold, the only potentially interfering institutional change is the increase of the city council size. This change is however rather limited, as the council increases from 29 to 33 councillors. Third, campaign data exists only for candidates running in municipalities of more than 9,000 inhabitants, which precludes the use of threshold in smaller jurisdictions. And fourth, despite the 36,658 *communes*, too few are located around the 50,000 and the 100,000 inhabitants threshold, where there is the largest pay raise. At the 20,000 threshold, candidates running for municipal elections face a spending cap depending *linearly* on the municipal population. Because this cap is quite loose (on average, candidates' total budget amount to 40% of this cap), a discontinuity in the personal contributions in the campaign would suggest that remuneration does affect politicians' willingness to hold office.

The results show that around the 20,000 threshold, the wage *negatively* impacts the candidates' political investment. This puzzling result is not only statistically significant, but also economically sizeable: taking into account all the candidates, candidates running in municipalities right above the threshold spend about 2,300 euros less in their campaign than candidates running just below the threshold, knowing that the average personal contribution in the sample is about 15,600 euros. The effect becomes larger when I sequentially exclude candidates investing the less in each municipality. If we focus only on the candidates investing the most in each municipality, the effect reaches 6,300 euros. Even though candidates, depending on their spending and their electoral results, can receive a reimbursement of a part of their personal contribution, it is an important and risky investment. I nevertheless check whether this result holds when the *net* contribution is used as an endogenous variable. The magnitude of the effect is indeed lower, but is still negative and significant.

To further check the robustness of this results, I exploit in a second step the fact that the municipal population taken into account to determine mayors' wage is

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[4]This is in the same range as in previous papers. As a comparison, Gagliarducci and Nannicini (2013) study a 33% pay raise and Kotakorpi and Poutvaara (2011) a 35% increase.

[5]This switch is set at the 1,000 threshold since the 2014 elections. It was previously set at 3,500.

based on national census that are rather spaced in time[6]. It implies that a significant number of municipalities have changed of strata between the 2008 and 2014 elections. It is thus possible to identify three categories of municipalities. The first is a control group, which is composed of municipalities that did not change of stratum (the wage of the mayor remains the same over the two mandates). The second group encompasses municipalities that reached a higher stratum (i.e., the wage of the mayor increased) and finally the third group includes municipalities that downshifted to a lower stratum. This allows me to implement a difference-in-differences approach to investigate the effect of the pay of politicians on their personal contribution, by comparing the change in the average investment of candidates across the three groups between the two elections. As the number of observations in the two treatment groups is quite small[7], this exercise should be seen as a robustness check. The results are consistent with the previous results: the average candidates' contribution decreased *more* in municipalities that increased in stratum compared those that did not change. This strengthen the evidence that the pay of politicians matters for the willingness to hold a political office.

The rest of the paper is organized as follows. The Section 2 presents a description of the institutional context and the data. Section 4 provides the empirical analysis. Section 5 concludes.

2 Institutional background and data

2.1 The French municipal context

Municipalities form the lowest tier of the subnational government structure, below the *Département* (100 units) and the *Région* (13 units). The main specificity of the French municipalities is their very large number, which amounts to 36,658 communes with a median population of 410 inhabitants. All municipalities have a strictly equal statute and benefit from the same prerogatives (Paris, Lyon and Marseilles being the

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[6]The population considered for the 2008 elections is based on the 1999 census, while the 2011 census is used for the 2014 elections. The salary of the mayor is fixed over a mandate.

[7]Between 2008 and 2014, 26 municipalities reached the 20,000 inhabitants threshold for a total of 101 candidates, and only 9 municipalities moved in the opposite direction, for a total of only 24 candidates.

only exception).

Municipal elections determine the composition of the municipal council, which in turns elects the mayor. Elections are held in two rounds, with a system of lists, and a clearly identified leader. The mayor enjoys an important discretion. He/she controls the agenda of the municipal council meetings while having the right to take part in the vote, and is responsible for the execution of the deliberations. The opposition is not granted any institutional role, and only a simultaneous resignation of one third of the municipal council can bring the mayor down. The mayor's mandate usually lasts six years and there is no term limit. This paper uses the two most recent elections up to day, in 2008 and 2014.

The wage of the mayor depends on the population of the municipality, as shown in table 1. This table presents the wage of the mayor in 2014. The wage structure was the same in 2008, it has been only updated to take into account inflation. The population threshold were the same. The population taken into account is the *legal* population, which is the reference population for any public policy based on population. This legal population is actually based for each election on the most recent national census. For 2008, the legal population is based on the 1999 census, while for 2008 it is based on the 2011 census. These census are organised and conducted by the *INSEE*, the French National Center for Statistics. Manipulation by local politicians is thus highly unlikely. The population during the year of election determines the wage of the mayor for the entire mandate. If a municipality changes of stratum during a mandate, the wage of the mayor remains the same.

Municipal population	Wage (in euro)
<500	646,25
500-999	1178,46
1000-3499	1634,63
3500-9999	2090,81
10000-19999	2470,95
20000-49999	3421,32
50000-99999	4181,62
>100000	5512,13

Table 1: Mayor's wage and population size

Concerning campaign budget, there are four sources of funding. First, donation by individuals. This is possible up to a limit of 4,600 euros per donator. Second, candidates representing a political party can receive a contribution from their political parties. Third, candidate can obtain benefits in kind, such as an electoral office for instance. Finally, and most importantly, candidates can provide a personal contribution to their campaign. Donation by firms or any legal entity is strictly prohibited since 1995, whatever the size of the municipality.

All the candidates running in municipalities with a legal population of more than 9,000 inhabitants have to submit their campaign return the National Committee for Campaign Return and Political Financing (CNCCFP). This committee investigates all the campaign spending receipts and the composition of the budget, and make sure that all the rules are respected. In particular, an important rule is the maximum amount of campaign spending. This cap is determined by the municipal population. For the first 15,000 inhabitants, the maximum is spending is 1,68 euros per capita. From the 15,001st inhabitant to the 30,000th, the limit is 1,52 euros per capita, from the 30,001st to the 60,000 it is 1,22 euros, and so forth. Around 20,000 inhabitants, the spending cap is thus linear. The validation of the campaign return is necessary in order to validate the results of the elections but also in order to proceed to the reimbursement of the candidates. Upon validation of the campaign return, the reimbursement of the campaign spending is conditional on the electoral performance. Candidate receiving less than 5% of the votes are not eligible for any reimburse-

ment. The amount of the reimbursement is also limited. It cannot exceed one of those three values: i) the total amount of campaign spending; ii) the amount of the personal contribution of the candidate; 3) 47.5% of the spending cap. For instance, this implies that a candidate spending the maximum legal amount and financing his/her campaign exclusively by personal contribution will receive less than half of her investment (if she receives a minimum of 5% of the votes).

First, as explained above, data simply do not exist for candidates running in municipalities with less than 9,000 inhabitants. Second, as shown in Table 1, there is a sharp increase in wage at this threshold. The remuneration switches from 2,470 to 3,421 euros monthly. This 38% increase is of similar order as in other papers studying wage increase. For instance, Gagliarducci and Nannicini (2013) study the change in wage of Italian mayors at the 5,000 inhabitants threshold level. Kotakorpi and Poutvaara (2011) study a 35% increase in the wage of Finish MPs. Third, for any population thresholds the pay of the mayor comes with other policy changes. For instance, at the 1000 threshold, the electoral system switches from a majoritarian to a proportional system. At the 20,000 threshold, the only potentially interfering institutional change is the increase of the city council size. This change is however rather limited, as the council increases from 29 to 33 councillors.

This paper focuses on the 20,000 for four reasons. First, as shown in Table 1, there is a sharp increase in wage at this threshold. The remuneration switches from 2,470 to 3,421 euros monthly. This 38% increase is of similar order as in other papers studying wage increase. For instance, Gagliarducci and Nannicini (2013) study the change in wage of Italian mayors at the 5,000 inhabitants threshold level. Kotakorpi and Poutvaara (2011) study a 35% increase in the wage of Finish MPs. Second, for any population thresholds the pay of the mayor comes with other policy changes. For instance, at the 1000 threshold, the electoral system switches from a majoritarian to a proportional system. At the 20,000 threshold, the only potentially interfering institutional change is the increase of the city council size. This change is however rather limited, as the council increases from 29 to 33 councillors. Third, campaign data exists only for candidates running in municipalities of more than 9,000 inhabitants. This restricts the choice of thresholds to the four highest ones. And fourth, despite the 36,658 *communes*, too few are located around the 50,000 and the 100,000 inhabitants threshold, where there is the largest pay raise.

2.2 Data and descriptive statistics

To conduct the analysis, I construct a dataset containing the campaign return of all the candidates running in municipalities of more than 9,000 inhabitants in 2008 and 2014. It provides in total information about 8,242 individual candidacies. After removing incomplete observations, we are left with 7725 complete cases. Also, Paris, Marseille and Lyon are excluded, as the electoral rule is different in these cities. Summary statistics are provided in table 2. All amounts are expressed in 2014 euros. The data about campaign return has been gathered on the website of the CNCCFP[8]. Data about population have been collected on the website of the INSEE[9].

Variable	Mean	Std. Dev.	Min.	Max.	N
Municipal population	37012.261	46899.241	9004	447340	7725
Total budget	21272.757	28454.638	0	458914	7725
Personal contribution	15615.694	20012.189	0	269718.906	7725
Donation	3952.567	9134.124	0	235557	7725
Party support	1149.645	6290.305	0	174337.516	7725
Other	41.989	803.395	0	64199	7725
Not reimbursed	1797.974	5588.828	0	204288	7725
Budget/cap	0.434	0.27	0	1.241	3397

Table 2: Summary statistics

Municipal population indicates the legal population used to determine the wage of the mayor. Total budget gives the average budget of the campaign. It is then interesting to decompose it: personal contribution amounts to more than one fourth of the total budget. To see the importance of this source of funding, figure 1. The importance of personal contribution increases if we restrict the sample to the two candidates with the largest budget in each municipality, and stays almost constant as the size of the municipality increases. Not reimbursed is the difference between the personal contribution and the amount reimbursed after the campaign. Finally, Budget/cap indicates the ratio of the total budget and the maximum budget allowed. This information is only available for the 2008 elections. The mean is fairly low, indicating that the cap is rather loose. The maximum for this variable is greater than one, indicating that some candidates overspent. In these cases, their candi-

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[8]www.cnccfp.fr
[9]www.insee.fr.

dacy is cancelled, whatever their electoral performance, and do not benefit of any reimbursement.
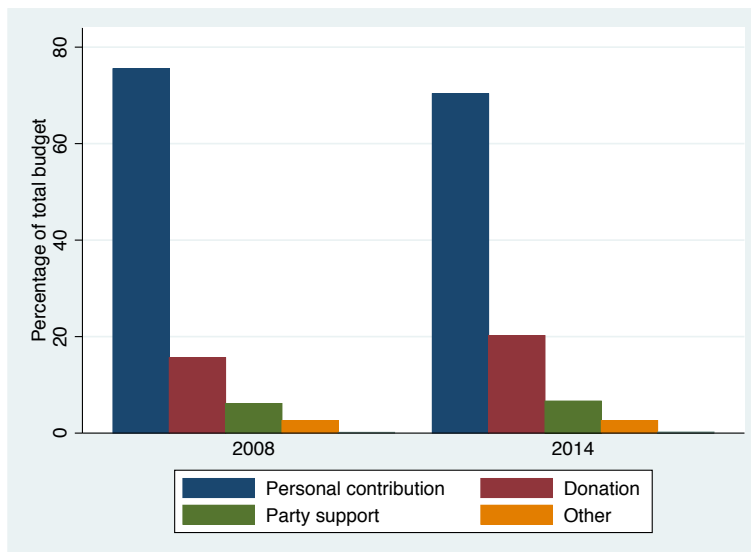

Figure 1: Budget composition

3 Empirical Analysis

3.1 Regression discontinuity design evidence

To estimate the impact of mayor's wage on political investment of the candidates, I use a regression discontinuity framework (see Imbens and Lemieux, 2008 and Lee and Lemieux, 2010 for an introduction to this method). I exploit the 20,000 population threshold at which the wage of the mayor to overcome potential problems of endogeneity: the unobserved total value of office is likely to increase with population size, and so to be correlated with wage. Let Y_i be the political investment of candidates running in municipality i, P_i the legal population and W_i the mayor's wage. As discussed above, the wage sharply increases at the threshold P_c. Candidates in municipality i are assigned to the treatment condition if $P_i \geq P_c$ or to the control group if $P_i < P_c$. This assignment, denoted W_i, is defined as $W_i = \mathbb{1}(P_i \geq P_c)$, where $\mathbb{1}(.)$ is the indicator function taking the value 1 if the inequality is satisfied. In a potential outcome framework, candidates in each municipality have two potential levels political investments, $Y_i(1)$ and $Y_i(0)$, corresponding respectively to the investment

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that would be observed with a high wage or a low wage. The observed outcome is

$$Y_i = \begin{cases} Y_i(0) & \text{if } P_i < P_c, \\ Y_i(1) & \text{if } P_i \geq P_c. \end{cases}$$

Of course, for candidates running in municipalities below P_c we only observe the political investment under the control condition, and similarly, for candidates running in municipalities above P_c we only observe the political investment under the treatment condition. Simply comparing the political investment of candidates running in municipalities with $P_i \geq P_c$ to mayors running in municipalities with $P_i < P_c$ would not provide a clean estimate of the impact of wage on candidates' investment, since the wage is not the only component of the value of office changing. The true, unobservable effect of wage is $E[Y_i(1) - Y_i(0)|P_i]$. If not observable, we can however approximate it by studying the investment of candidates just above the threshold to those just below the threshold. This require to assume that both $E[Y_i(1)|P_i]$ and $E[Y_i(0)|P_i]$ are continuous at P_c (Hahn et al, 2001). The (local) average treatment effect of wage on political investment is then the jump (if any) at the cutoff. To estimate it, I use a local linear regression. As for any nonparametric method, the critical choice are the kernel function and the bandwidth. I opt for a triangle kernel function, and use the optimal data-driven bandwidth proposed by Calonico et al (2014). All the analysis is performed using the Stata package *rdrobust* (Calonico et al, 2016).

Estimating causal impacts requires that there is no perfect manipulation of the population threshold or of the municipal population (Imbens and Lemieux, 2008). For the former, this is basically impossible, since the threshold is determined at the national level and exists for decades. For the latter, it would imply that candidates can influence the data from the census. As the census serves as a basis to define the legal population, even if the incumbent mayor is candidate it seems unlikely that such a sorting might happen, especially since the censuses from 1999 use local tax files to produce annual population updates (Eggers et al, 2015). Figure 2 show the density of municipal population around the threshold, which does not visually reveal any sorting. I formally test it using a MacCrary (2008) test and fail reject the null, confirming the visual inspection (p-value: 0.789).
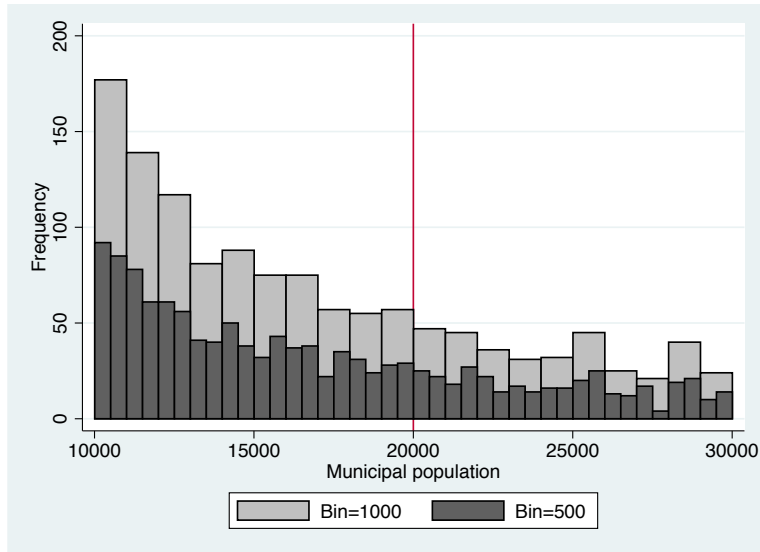
Figure 2: Population density

Table 3 shows the main estimates of the local average treatment effect, using optimal bandwidth and bias corrected p-values using the method described in Calonico et al (2014). In a first step, I use the personal contribution of the candidate as endogenous variable. In column 1, I use all the pool of candidates running in municipalities between 10,000 and 30,000 inhabitants, as there is another discontinuity at these thresholds. The result is puzzling: the treatment effect is significant at the 5% but negative: candidates just under the wage threshold invest on average 2332 euros less than their counterpart above the threshold. This result is consistent with Figure 3, where I draw scatters of the observed level of investment and polynomial fit of order 4. To see the treatment more precisely, figure 4 show the linear fit on each side of the threshold using only observations within the optimal bandwidth. The difference at the cutoff between the two lines represent the effect of switching the wage of the mayor. When I restrict the sample to the three candidates investing the most in a municipality, the magnitude of the treatment effect is even higher, and the p-value decreases, as shown in column 2. When I further restrict to the two candidates investing the most (column 3) and then to the top candidate in each municipality the magnitude keeps increases, to reach a gap of 6318 euros.

This results is hard to reconcile with the existing literature. (At least) two possibilities are however possible. First, based on the assumption that candidates of better

quality perform better on the labour market (as the model of Caselli and Morelli , 2004 for instance), hence having a larger financial capacity for their campaign, observing a decrease of the contributions when wage increases suggest a decrease of candidates' quality. In the framework of Besley (2005), this would imply that the strength of extractable rents is greater than public service motivation of candidates in the French municipal elections. This would be consistent with the results of Fisman et al. (2015), who observe a decrease in the quality of education of the members of the European Parliament when the wage increases, but also consistent with Pique (2017), who finds that the quality of Peruvian mayors decreases when the pay increases. A second possible explanation is that a higher wage attracts better candidates, who use their campaign resources more efficiently. For the same electoral return, a smaller investment is thus required. This explanation is consistent with the fact that the effect of pay at the threshold increases as the focus is put on the top candidates.
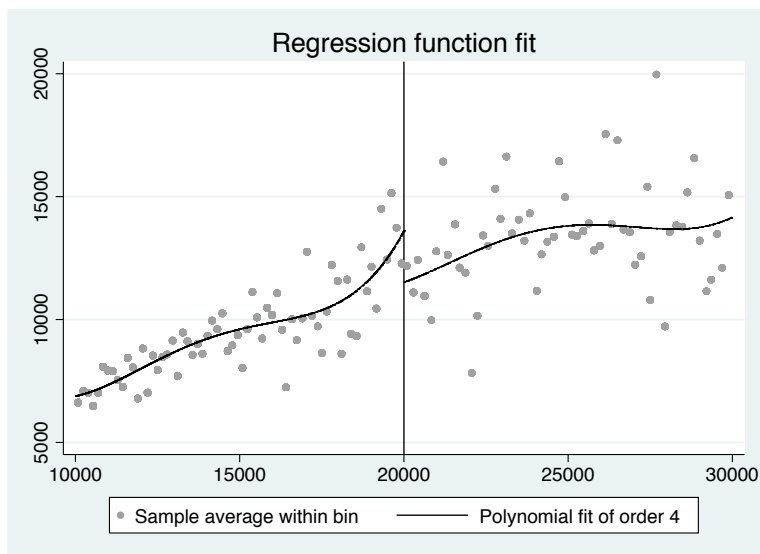

Figure 3: Political investment around the threshold- personal contribution
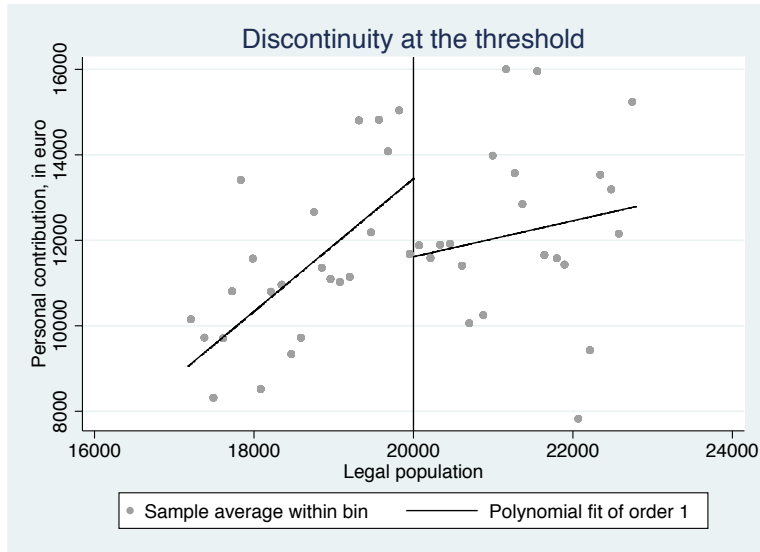
Figure 4: Political investment around the threshold - Treatment effect

3.2 Robustness checks

As explained above, personal contributions are an important and risky it investment. Nevertheless, candidates can receive a reimbursement of a part of their contribution conditionally on their electoral performance and on the fulfilment of the electoral accounting. As a first robustness check, I use as an endogenous variable the *net* candidates' investment, i.e., the difference between the personal contribution and the amount reimbursed after the campaign. The results are presented in column 5-8 of table 3. The results also indicate a negative effect of wage. The magnitude is indeed lower than for the total personal contribution, together with the significance. But for the top 2 and top 3 candidates in each municipality, the estimated effect is still sizeable, between 1,000 and 1,400 euros, considering that the total campaign budget is average about 12,000. Figure 5 shows the discontinuity for the sample containing all the candidates.

As a second robustness exercise, I use the 2008 and 2014 subsamples separately. As the two censuses determining the legal population are quite distant in space, 34 different municipalities changed of stratum in the meanwhile. Results are presented in table 4. In both subsamples, I obtain a negative effect of the treatment, of a comparable magnitude as what is obtained in the full sample.

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endogenous:	Personal contribution				Not-reimbursed contribution			
sample	All	Top 3	Top 2	Top 1	All	Top 3	Top 2	Top 1
RD estimate	-2332.8	-3788.5	-4522.8	-6318.7	-726.35	-1020.2	-1394.9	-2157.2
	1144.3	1391.9	1591.0	2161.8	469.18	559.24	808.02	1352.4
CCT p-value	0.041	0.006	0.004	0.003	0.114	0.063	0.093	0.119
Observations	4127	3415	2455	1241	4127	3415	2455	1241

Table 3: RDD estimates - Personal contribution

endogenous:	Personal contribution				Personal contribution			
Year	2008				2014			
sample	All	Top 3	Top 2	Top 1	All	Top 3	Top 2	Top 1
RD estimate	-2007.6	-4187.5	-4871.8	-6645.3	-2241.6	-3055.4	-3432.6	-4865.2
	1845.9	2121.3	2155.1	2173.4	1196.9	1193.4	1297.0	2031.1
CCT p-value	0.277	0.048	0.024	0.046	0.061	0.010	0.008	0.017
Observations	1903	1637	1195	603	2224	1778	1260	638

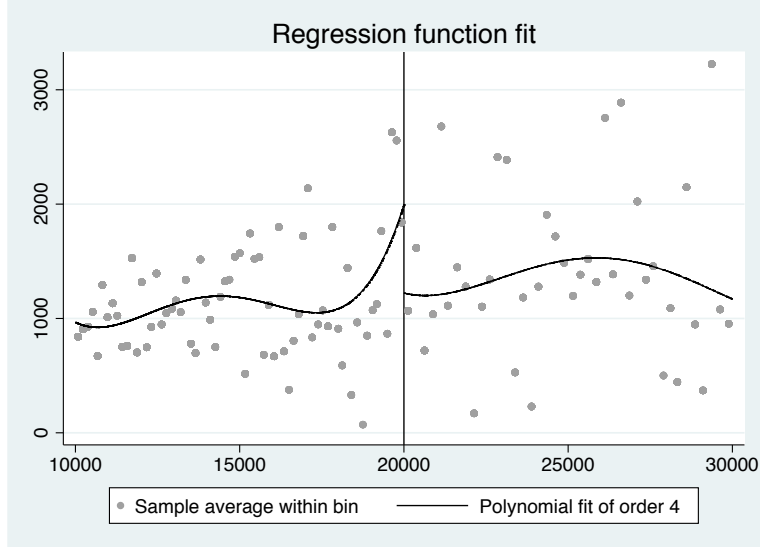**Table 4:** RDD estimates - Personal contribution

Figure 5: Political investment around the threshold - not reimbursed contribution

3.3 Difference-in-Differences evidence

The legal population used to determine the pay for mayors comes from the INSEE national census. For the 2008 elections, the reference population comes from the 1999 census, while the legal population used for the 2014 elections are based on the 2011 census. This rather large long distance in time between these two censuses implies that a certain amount of municipalities crossed the threshold in the meanwhile. In total, 35 municipalities are in this case. It is thus possible to identify three categories of municipalities. The first is a control group, which is composed of municipalities that did not change of stratum (the wage of the mayor remains the same over the two mandates). The second group encompasses municipalities that reached a higher stratum (i.e., the wage of the mayor increased) and finally the third group includes municipalities that downshifted to a lower stratum. This allows to implement a difference-in-differences approach to investigate the effect of the pay of politicians on their personal contribution, by comparing the change in the average investment of candidates across the three groups between the two elections. For this purpose, I run the following regression:

$$y_i = \alpha + \beta_1 Time_i + \beta_2 Treat_i + \beta_3 Time_i \times Treat_i + x'\delta_{it} + u_i,$$

where y_i is the level of personal contribution invested by candidate i, $Time$ is a dummy taking the value 1 for candidates running at the 2014 elections and 0 otherwise, $Treat$ is a dummy taking the value 1 for candidates running in municipalities that crossed the 20,000 inhabitants threshold, δ is a set of controls (population in the municipality where the candidate is running and a dummy indicating whether the candidate is the incumbent mayor) and u_{it} is an error term. The identification of β_3 as the effect of wage on political investment relies on the assumption that in the absence of a change of stratum, the difference in the outcome between the treatment and the control group would remain the same.

The total number of candidates is rather small, as displayed in Table 5, which also presents the characteristics of the three groups. It nevertheless can give some additional insights to the results obtained in the previous subsection. As only 24 candidates are running in municipality where the population passed under the threshold, I focus on the group of candidates in municipalities where the population reached

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| | | Population increase | | Population decrease | |
Covariates	Control	Treatment	Difference	Treatment	Difference
Population	17566.24	19212.48	1646.23***	20838.46	3587***
sd	133.043	68.257		132.294	
N	1917	101		24	
Incumbent	0.258	0.227	-0.031	0.333	0.075
sd	0.010	0.041		0.098	
N	1917	101		24	

Table 5: Covariates balance

the 20,000 inhabitants threshold. Table 6 shows the descriptive statistics for these two groups.

Table 7 presents the regression results. In all models, standard errors are clustered at the municipal level. Column 1 displays the results of the most simple model, without any control variable. The coefficient of the interaction variable of interest is negative, but not significant. When the covariates are included, the magnitude of this coefficient is larger but remains insignificant. In the previous subsection, with the RDD method, the magnitude and the significance of the treatment was increasing when the sample was restricted to the top candidates. Column 3 thus displays the results when the sample is restricted to the two candidates investing the most in each municipality. The magnitude increases, and is now significant at the 10% level. Finally, as shown in Table 5, the characteristics of the two groups are slightly different. To take this issue into account, I further restrict the control group to candidates running in municipalities between 15,000 and 25,000 inhabitants, in order to have a control group as close as possible to the treatment group. Column 4 provides the results using this sample. Again, despite a relatively small sample, the coefficient associated with the interaction variable is still negative and significant, comforting the results previously obtained.

Finally, for the sake of completeness, columns 5-8 of Table 7 displays the results of the same four specifications, but instead of using the candidates running in municipalities that reached the 20,000 threshold as the treatment group, I now use the (few) candidates running in municipalities where the population decreased under the 20,000 threshold. The interaction coefficient is never significant.

	Before	After	Difference
Control group	11119.4	9576.2	1543.205***
sd	166.487	134.405	211.593
N	1896	2282	
Treatment	12765.64	11187.84	1577.798
sd	861.482	675.405	1096.013
N	101	100	
Difference	-1646.234**	-1611.64**	
sd	748.170	657.428	
Total N	1997	2382	

Table 6: Personal contribution by group

4 Conclusion

The aim of this paper was to study the relationship between pay for politicians and the personal contributions of the candidates into their campaign. To investigate this relationship, I used the campaign budget of all the candidates running for the 2008 and 2014 French municipal elections. This provides information about 8,129 individual candidates. I argued that the context of the French municipal elections is ideal for investigating the relationship between politicians' wage and political investment, as all the candidates running for a municipal office in a city of more than 9,000 inhabitants must provide an electoral campaign return to an official committee controlling for the respect of the electoral rules. I gathered for all the candidates a simplified version of their campaign return for the 2008 and 2014 elections, which contains the sources of campaign financing, and in particular the amount of self-financing. Contrary to the US, about 80% the campaign resources of a candidate are provided by a personal contribution. As such, personal contribution can be seen as a political investment.

Exploiting a population threshold increasing the pay for mayors by more than 35%, I applied a regression discontinuity design. The results showed that around this threshold, the wage *negatively* impacts the candidates' political investment. This puzzling result is not only statistically significant, but also economically sizeable: taking into account all the candidates, candidates running in municipalities right above the threshold spend about 2,300 euros less in their campaign than candidates running just below the threshold. If we focus only on the candidates investing the

Model	(1) up	(2) up	(3) up	(4) up	(5) down	(6) down	(7) do wn	(8) down
After	-1543.2***	-1302.5***	-1041.2***	-801.7**	-1543.2***	-1304.7***	-1044.2***	-81 5.4**
	(182.7)	(173.8)	(203.1)	(351.4)	(182.7)	(173.8)	(203.1)	(351 .3)
Treatment	1646.2*	928.9	1939.9	1789.2	2510.6*	728.0	-499.2	-702.9
	(983.0)	(963.3)	(1219.0)	(1246.5)	(1286.8)	(1242.9)	(1031.2)	(1076 .4)
After*Treatment	-34.59	-1102.1	-2579.6*	-2848.8*	-2065.0	-1002.3	-492.4	-63 3.0
	(1092.4)	(1082.3)	(1405.2)	(1450.8)	(1414.1)	(1312.4)	(1315.9)	(1344 .4)
Population		0.422***	0.726***	0.764***		0.421***	0.724***	0.745***
		(0.0230)	(0.0282)	(0.0885)		(0.0230)	(0.0282)	(0.08 92)
Incumbent		3644.4***	1109.9***	1484.3***		3601.2***	1060.8***	138 1.7***
		(241.5)	(211.7)	(358.5)		(240.0)	(210.3)	(356 .4)
N	4379	4379	2474	976	4238	4238	2406	908
r2	0.0151	0.179	0.395	0.147	0.0138	0.183	0.401	0. 149

Standard errors in parentheses, clustered at the municipal level. All models include a constant.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Difference-in-Differences regression results

most in each municipality, the effect reaches 6,300 euros. I showed that this result is robust to various specifications. In particular, this negative effect also holds when instead of the amount of personal contribution I then focused on the amount effectively paid by the candidates, i.e., the difference between his/her personal contribution and the amount reimbursed.

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