Pay for politicians and campaign spending: Evidence from the French municipal elections

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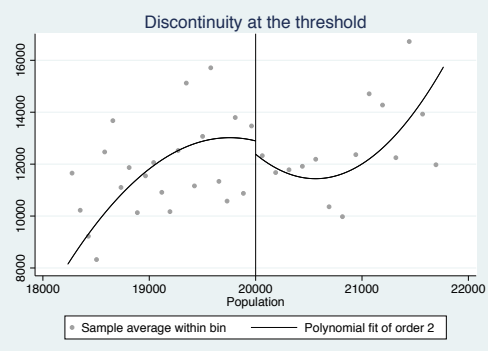
1 Regression discontinuity robustness checks

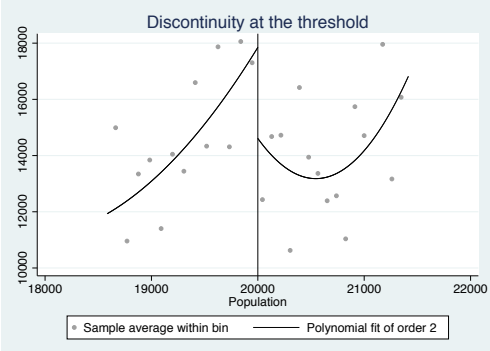
This section provides several additional robustness checks for the main results, i.e., that the pay level negatively impacts candidates' spending. For all these tests, the dependent variable is the amount of personal contribution (in levels). In a first stage, Figure 1 displays the results of a regression discontinuity design with quadratic fit. The pattern is similar to the one obtained with linear fit.

In the first panel of Table 1, I restrict the sample of top candidates not on a contribution basis, but on the basis of electoral ranking (i.e., the subsample 'top 1' is restricted to lists that received the largest vote shares in the first round). The results are very close to those obtained in the main specification, and also indicate that the effect becomes larger when we restrict the sample to the most important contestants.

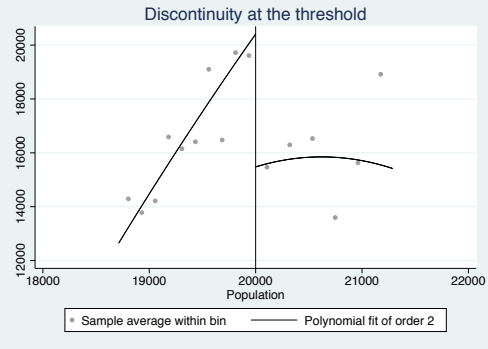
In the second and third panels, I display the results for 2008 and 2014 separately. As the two censuses determining the legal population are quite distant from one another in time, 34 different municipalities passed the 20,000 inhabitant threshold in the meanwhile. I obtain a negative effect by treating each year separately, of a magnitude comparable to what is obtained from the full sample. This indicates that the negative effect of pay is not related to a specific electoral campaign, as the sign is negative for each year and each subsample.



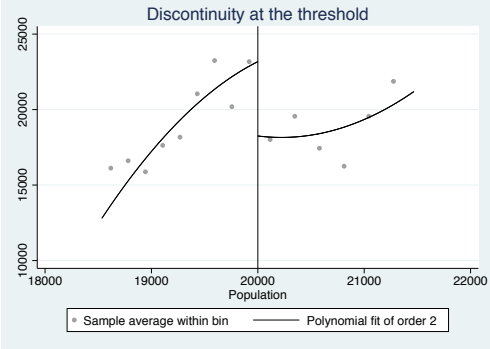
(a) All candidates



(b) Top 3



(c) Top 2



(d) Top 1

Figure 1: Personal contribution around the threshold (quadratic fit)

	(1) All candidates	(2) Top 3	(3) Top 2	(4) Top 1
With vote ranking				
RD estimate	-2,141*	-3,565**	-4,794***	-4,337*
	(1,252)	(1,476)	(1,576)	(2,365)
Observations	2,519	1,841	1,308	659
Bandwidth	1883	1426	1455	1738
2008				
RD estimate	-1,555	-6,390**	-6,370**	-6,737
	(2,045)	(2,842)	(3,110)	(4,388)
Observations	1,177	934	669	337
Bandwidth	2054	1117	1065	1309
2014				
RD estimate	-2,004	-3,979***	-4,815***	-5,566**
	(1,425)	(1,430)	(1,580)	(2,232)
Observations	1,342	956	664	333
Bandwidth	1877	1829	1598	1581
Without special status				
RD estimate	-3,293**	-4,829***	-4,979***	-5,866**
	(1,345)	(1,468)	(1,540)	(2,302)
Observations	1,775	1,358	968	487
Bandwidth	2013	1441	1364	1562
Without FN				
RD estimate	-2,567*	-4,300***	-4,858***	-5,800**
	(1,361)	(1,351)	(1,478)	(2,470)
Observations	2,376	1,805	1,293	659
Bandwidth	1783	1439	1343	1506

NOTE: *** p<0.01, ** p<0.05, * p<0.1. Robust bias-corrected significance levels and automatic bandwidth selection are based on the RD estimator developed by Calonico et al. (2014).

Table 1: RDD ROBUSTNESS CHECKS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All		Top 3		Top 2		Top 1	
	Right	Left	Right	Left	Right	Left	Right	Left
RD estimate	-2,703	-1,775	-5,613**	-3,995**	-7,074**	-2,918	-6,231**	-2,354
	(2,106)	(1,577)	(2,585)	(1,833)	(2,797)	(2,019)	(3,108)	(2,754)
Observations	891	1,054	756	818	598	595	344	287
Bandwidth	2004	2356	1473	1619	1504	1535	1828	1663

NOTE: *** p<0.01, ** p<0.05, * p<0.1. Robust bias-corrected significance levels and automatic bandwidth selection are based on the RD estimator developed by Calonico et al. (2014).

Table 2: RDD BY IDEOLOGY

Mayors of municipalities having the status of a prefecture, sub-prefecture or tourist resort can benefit from a pay premium. Even though the probability of having such municipalities does not significantly change at the threshold (the p-values are respectively 0.382, 0.526 and 0.183), I run the main specification using personal contribution as the dependent variable but restrict the sample to 'standard' municipalities in order to remove potential noise generated by these special statuses. The results, displayed in the fifth panel of Table 1, are similar those previously obtained.

A judicial investigation is currently under way against the extreme-right party Front National and several high-ranking members of the party have been indicted for misuse of public funds and non-compliance with campaign funding rules related to both the 2012 general election and the 2014 municipal election. To make sure that the results are not driven by such a possible fraud, the last panel of Table 1 displays the results when removing extreme right candidates.

To check whether the decrease in spending at the threshold is restricted to a political wing or if it is a general phenomenon, I run two additional series of regressions separately using right-wing and left-wing candidates. The results are displayed in Table 2. The decrease in contribution is more salient for right-wing candidates than for left-wing candidates, but candidates from both wings exhibit a decrease in the amount invested.[1]

[1]The probability for the right/left to win the election does not exhibit any discontinuity at the threshold.

Y	(1) All candidates	(2) Top 3	(3) Top 2	(4) Top 1
Personal contribution	-482.7	-244.1	-816.5	-2,266
	(805.5)	(876.0)	(1,219)	(1,619)
Observations	2,614	2,219	1,642	829
Bandwidth	320.1	304.3	224.2	224.1
Contribution/cap	-0.0485	-0.0258	-0.0827	-0.228
	(0.0807)	(0.0880)	(0.123)	(0.163)
Observations	2,614	2,219	1,642	829
Bandwidth	319.7	302.8	222.3	222.1
ln(contribution)	-0.0446	0.0287	-0.0463	-0.251
	(0.106)	(0.118)	(0.176)	(0.169)
Observations	2,525	2,188	1,633	829
Bandwidth	481.4	425.5	234	207.9
Not reimbursed	-385.6	-360.0	-619.0	-534.1
	(411.3)	(440.1)	(704.5)	(1,070)
Observations	2,514	2,151	1,599	811
Bandwidth	296.1	303.9	253.3	316.7

NOTE: *** p<0.01, ** p<0.05, * p<0.1. Robust bias-corrected significance levels and automatic bandwidth selection are based on the RD estimator developed by Calonico et al. (2014).

Table 3: RDD - 10,000 INHABITANT THRESHOLD

The main results focus on the 20,000-inhabitant threshold. To complement these findings, I also investigate the amount of contribution in municipalities at the 10,000-inhabitant threshold. At this threshold, mayoral pay increases by 18%, less than half of the percentage change at the 20,000-inhabitant threshold. The pay of deputy mayors increases by 25%. There are no first order confounders at this threshold either, and the dataset encompasses candidates running in municipalities of at least 9,000 inhabitants. Results are displayed in Table 3, using successively personal contribution in level, per capita, in logarithmic form and non-reimbursed spending. None of the estimates reaches the standard significance threshold. However, the sign is always negative in all but one specification. Another interesting observation is that the same pattern as with the 20,000-threshold case appears when the sample is progressively restricted to the top candidates, the point estimates decreasing accordingly. All in all, the results obtained using discontinuity at the 10,000-inhabitant threshold are consistent with the results displayed above.

2 Difference-in-Differences evidence

The legal population used to determine the pay for mayors and deputy-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 two categories of candidates. The first is a control group, which is composed of lists running in municipalities that did not change of stratum (the wage of the mayor remains the same over the two mandates). The second group encompasses candidates in municipalities that reached a higher stratum, so that the wage of the mayor increased. This concerns a total of 23 municipalities, with 181 candidates[2]. 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 two groups between the two elections. For this purpose, I run the following regression:

[2]As only 9 municipalities moved to a lower stratum, so I do not consider this case.

$$y_i = \alpha + \beta_1 Post_i + \beta_2 Treat_i + \beta_3 Post_i \times Treat_i + u_i, \quad (1)$$

where y_i is successively the level of personal contribution invested by candidates on list i and the contribution that is not reimbursed in the aftermaths of the election, $Post$ 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 lists running in municipalities that crossed the 20,000 inhabitants threshold 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 have remained the same. The total number of candidates in the treatment group is rather small, as displayed in Table 4, which also presents the characteristics of the two groups. It nevertheless can give some additional insights to the results obtained with RDD.

	Treatment		Control	
	2008	2014	2008	2014
Personal contribution	12446.77	10951.8	12965.08	11498.42
s.d.	8497.484	6171.258	6171.258	7378.87
Not reimbursed	2727.147	1399.31	2397.03	1343.20
s.d.	4255.437	3119.48	3747.11	3071.39
Population	19208.73	21186.96	21415.76	21476.15
s.d.	680.111	1312.316	4464.721	4520.812
N	91	90	1062	1,216

Table 4: Control and treatment groups

In addition to the baseline estimates, I also estimate equation 1 after implementing a matching procedure. More specifically, I use kernel propensity score matching in order to have control and treatment groups as close as possible, matching observations according to population size, gender, and whether the candidate is the incumbent. Table 5 presents regression results. In all models, standard errors are clustered at the municipal level. Columns 1 and 2 display the results using per-

sonal investment as the dependent variable whereas columns 3 and 4 use the net contribution. The coefficient of the interaction variable is always negative, but not significant in the baseline specification. After matching, the negative effect of wage turns significant, and the magnitude is of the same order as what was observed in the regression discontinuity design framework.

	(1)	(2)	(3)	(4)
	Personal investment		Not reimbursed	
	No Matching	Matching	No Matching	Matching
Post	-1,467***	557.1	-1,048***	-534.9***
	(273.4)	(394.5)	(113.8)	(181.6)
Treated	-518.3	120.8	618.3	729.5
	(1,013)	(1,017)	(499.1)	(502.5)
Post× Treated	-28.32	-2,052*	-794.0	-1,307**
	(1,184)	(1,218)	(535.9)	(554.5)
Observations	2,459	1,617	2,364	1,554
R-squared	0.009	0.009	0.039	0.050

NOTE: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the municipal level.

Table 5: Difference-in-differences estimates

References

Calonico, S., Cattaneo, M. D., Titiunik, R. (2014). Robust Nonparametric Confidence Intervals for Regression Discontinuity Designs. Econometrica, 82(6), 2295–2326.