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The Causal Impact of the Electoral System on Corruption

Abstract

We estimate the causal effect of the electoral system on corruption by leveraging a specificity of the French electoral law where the electoral system for municipal councils depends on municipal population. Specifically, municipalities with fewer than 1,000 inhabitants use an individual majority system, while those above this threshold use a proportional list system. Exploiting that discontinuity in a regression discontinuity design and using survey and actual corruption data, we find that the proportional list system results in higher levels of perceived and actual corruption than the individual majority system.

JEL-Codes: D720, D730.

Keywords: corruption, electoral systems, local government.

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1 Introduction

Whereas honest and corrupt elected officials likely differ in many respects, they have all been elected, and some of them even re-elected. This implies that although elections are supposed to be a way to monitor and discipline officials (Ferejohn, 1986), they remain an imperfect device: Voters cannot perfectly monitor and discipline officials, some of whom may thus find misconduct attractive. However, while perfect monitoring is likely an unrealistic goal, there are many ways in which electoral systems can affect the propensity of officials to behave more or less honestly.

The literature has contrasted majoritarian individual representation with party-list proportional representation, be it on closed or open lists. From a theoretical point of view, how the two systems rank in terms of corruption is ambiguous. On the one hand, majoritarian representation emphasizes individual responsibility because voters vote for individual candidates; this incentivizes candidates not only to campaign more actively but also to behave honestly (Persson and Tabellini (2002), chap. 9). By contrast, with a proportional list system, voters can only vote for a pre-defined set of candidates, which results in looser monitoring and weaker incentives for list members.

On the other hand, political parties better control candidates in proportional list systems than in individual majority systems because the political party controls the composition of lists, which reduces corruption opportunities for individual elected officials (Kunicova and Rose-Ackerman, 2005). Moreover, Myerson (1993) recalls that voters sometimes have to choose between a corrupt candidate with a platform that they like and an honest candidate with a platform that they dislike. In such a situation, proportional representation always gives voters an incentive to vote for honest candidates who support their favorite policies because, by doing so, they can increase the share of honest elected officials without reducing the share of officials who support their favorite policies. On the contrary, a majority system can present pivotal voters with a drastic trade-off. Imagine for instance that voters are evenly split across two candidates who are both corrupt but support opposite policies and that each corrupt candidate has an honest challenger supporting the same policy. Given the tie between the two corrupt candidates, if each individual voter decides to vote for an honest candidate, the corrupt candidate — who supports the policy that the

voter dislikes — would be elected. This is the worst outcome for the voter. Accordingly, there may be configurations under the majority rule where voting for corrupt candidates is each voter's dominant strategy. Myerson (1993) moreover points out that such a configuration is particularly likely when corrupt candidates are established candidates, while honest candidates are newcomers, making the status quo a focal point. By avoiding those coordination problems, proportional representation may thus impose more discipline on candidates than the majority rule.

As the theoretical literature is inconclusive, the question becomes empirical. Previous empirical studies broadly support the view that proportional list systems result in more corruption (Kunicova and Rose-Ackerman, 2005, Persson and Tabellini, 2002, Persson et al., 2003), although the effect may be conditioned by other features of the political system, such as the district magnitude (Chang and Golden, 2007) or the number of political parties (Charron, 2011). However, those findings overwhelmingly rest on the comparison of countries, be it in cross-section or panel settings, and on simple correlations. The reported correlations between electoral systems and corruption therefore lack causal interpretation, as they are subject to endogeneity issues, such as omitted variable bias and reverse causality.

In this paper, we address causality thanks to a discontinuity in the French electoral system for the election of municipal councils. Specifically, we exploit the fact that the electoral law conditions the electoral system on the population size of a municipality, with a threshold at 1,000 inhabitants: Municipalities with fewer than 1,000 inhabitants use a two-round individual majority system, while those above the threshold use a two-round proportional list system. This means that below the threshold, voters choose their municipal representatives individually, while above the threshold, they must vote for a list of candidates.

We leverage that discontinuity in a regression discontinuity design to measure the causal impact of switching from one electoral system to another on the level of corruption of municipal representatives. We exploit a recent large-scale national survey ($N > 10,000$), in which we asked respondents to assess the corruption level of their municipal government. We show that around the threshold, the move from an individual majority system to a proportional list system leads to an increase in perceived corruption ranging from 6.6% to

8.6%. Using the same empirical strategy, we complement this analysis of perception with an analysis of actual corruption, as measured by hand-collected newspaper reports of corruption cases involving the municipal government. We find that the municipal government of municipalities located just above the cutoff – and thus elected under a proportional list system – is 0.4 percentage points more likely to be involved in a corruption case than the municipal government of municipalities just below the cutoff – where the system is majoritarian.

Overall, those results show that collective representation, as measured by voters voting for a list of candidates rather than for an individual candidate, entails higher levels of corruption. Our findings align with the arguments of Persson and Tabellini (2002), who assert that majoritarian representation enhances accountability by emphasizing individual responsibility, therefore curbing the propensity of elected officials to indulge in corrupt or dishonest practices. In contrast, we find no empirical support for the predictions of Kunicova and Rose-Ackerman (2005) and Myerson (1993) that proportional list systems should lead to less corruption.

The main contribution of the paper is straightforward. It provides the first unambiguous evidence of a causal effect of electoral rules on corruption. In doing so, it confirms previous non-causal evidence of an association between proportional representation and higher corruption (Chang and Golden, 2007, Kunicova and Rose-Ackerman, 2005, Persson and Tabellini, 2002, Persson et al., 2003). An innovation is that we provide that evidence using within-country cross-municipality data, as opposed to cross-country (Chang and Golden, 2007, Kunicova and Rose-Ackerman, 2005, Persson and Tabellini, 2002, Persson et al., 2003) or cross-district data (Chang and Golden, 2007). This allows us to contribute to the literature on the effect of electoral systems on municipal outcomes (Chin, 2023, Eggers, 2015, Sieg and Yoon, 2022) by reporting evidence of an additional local outcome that responds to voting rules, specifically the corruption of local representative. Finally, whereas the existing literature on the relationship between electoral systems and corruption focuses on subjective corruption indexes, we complement the results pertaining to perceptions with results on actual corruption cases.

2 The French Municipal Electoral System

2.1 How Municipal Elections Work

Municipalities are the smallest administrative division in France. Each one is run by a municipal council (*conseil municipal*), which appoints the executive branch consisting of the mayor (*maire*) and the specialized deputies (*adjoints au maire*). Because the French political system is highly centralized, the municipal council is in charge of very local public policies, which are the same irrespective of the size of the municipality. In a nutshell, the municipal council mainly manages urban public transport and urban, land, and real estate policies.

In 2020 – the year of the latest municipal election – there were 34,868 municipalities in mainland France. Of these, 24,989 (71%) had fewer than 1,000 inhabitants. This makes it apparent that there are a lot of small municipalities in France (see Table B.1 in Appendix B for the detailed distribution). In particular, 19% of the municipalities stand between 500 and 1,000 inhabitants and 22% between 1,000 and 5,000 inhabitants, meaning that we have enough observations and variance in population size around the 1,000-inhabitant threshold to leverage in our empirical approach.

The French municipal elections can be characterized by two features. First, partisan stakes are low, especially in small municipalities. More specifically, candidates in small municipalities do generally not emphasize their party affiliation, if they have any at all. As depicted in Appendix Table B.2, in municipalities with 1,000 to 2,000 inhabitants, 81% of the competing lists in the 2020 election had no partisan denomination. Second, the number of competing lists is also limited. It is highest in large municipalities and decreases rapidly in smaller ones. For instance, as shown in Table B.3, in 2020, a unique list ran in 45% of the municipalities with a population between 1,000 and 2,000 inhabitants, and the same proportion of municipalities experienced an election with two competing lists.[1]

These two features of the French municipal election allow us to rule out the possibility that the effect of the threshold on perceived corruption of the municipal government in

[1] Admittedly, partisan politics and electoral competition may play a larger role in larger municipalities. For instance, the proportion of non-partisan lists amounted to 38% in municipalities with more than 5000 inhabitants (see Table B.2) and two-thirds of those municipalities experienced an election with three or more competing lists. However, those municipalities are too far from the threshold to affect our estimates.

our sample is driven by the ideological positioning of the municipal government or by the intensity of political competition.

2.2 The 1,000-Inhabitant Threshold

The municipal electoral system has changed little since the 1884 act on municipal organization. The municipal council is elected every six years in a two-round election by the municipality's registered voters. Since 1946, the electoral system is determined by the size of the municipality's population. Currently, a unique threshold is set at 1,000 inhabitants.

Specifically, in municipalities below the threshold, the system, known as '*panachage*', is an individual majority two-round election that allows for split votes. Candidates may run on their own or together with a group of candidates on a list. If a list is set, the ballot paper features the names of several candidates that voters may cross out. Votes are counted on an individual basis. In the first round, candidates obtaining an absolute majority of the votes, and a number of votes greater or equal to a quarter of registered voters are elected to the municipal council. A second round is then organized to allocate the remaining seats, and the required majority of votes becomes relative, meaning that the candidates with the most votes are elected. If several candidates obtain the same number of votes, the oldest is elected.

In municipalities above the 1,000-inhabitant threshold, the system is a two-round proportional list system. A candidate may not compete on more than one list. Each list must contain a number of candidates at least equivalent to the number of seats to be allocated, plus one or two candidates at the list's discretion. In addition, each list must be made up of an equal number of men and women, with alternating representation mandatory.[2] In the first round, if a list obtains an absolute majority of votes, it obtains half the seats. The remaining seats are distributed between the lists that have reached 5% of the votes according to a proportional rule based on the highest average. If no list secures 50% of the votes in the first round, a second round is organized, in which only the lists that have obtained at least 10% of the votes in the first round are allowed to run. In the second

[2]We show in Section 5 that the change in the gender parity rule at the threshold does not drive our results.

round, the lists that have obtained at least 5% of the votes in the first round may merge with a list having obtained 10% of the votes, and the procedure for allocating seats is similar to that of the first round.

The key differences in the type of electoral system around the 1,000-inhabitant threshold are summarized in Table B.4 in Appendix B. Under the threshold, voters vote for individuals, the system is majoritarian, and there is no gender parity rule. Above the threshold, voters vote for lists, the electoral system is proportional representation, and a gender parity rule is applied. Crossing the threshold therefore means that voters vote for a list of candidates rather than an individual candidate.

An important feature of the threshold is that the population of each municipality is defined every year by the French National Institute of Statistics. The legal population is an official statement over which local politicians have no influence. Although local public policies may affect population size, direct manipulation of population size around the threshold is therefore unlikely, which lends credence to our RD strategy as only a precise control of the running variable invalidates the RD design (Lee and Lemieux, 2010).

2.3 Other Institutional Rules Determined by Population Size

In addition to the electoral system, a municipality's population size also determines other institutional rules and features, as shown in Table B.4. We describe them below and show that they do not confound our local-to-threshold estimates of the change in electoral rules on corruption.

First, the size of the municipal council is determined by several population thresholds, but none of them is set at 1,000 inhabitants. The nearest thresholds are set at 500, below which the number of councilors is 11, and 1,499 inhabitants, above which the number of councilors is 19. Between those two thresholds, the number of councilors is 15. Consequently, the size of the municipal council does not change around the 1,000-inhabitant threshold and is therefore unlikely to bias our results.

Second, the compensation of councilors varies according to population thresholds, but not in a systematic way. Specifically, the council *can* vote to determine the compensation of the mayor and of the deputy mayors, but only within the limits set by the law that are based on the size of the municipality. One of the population thresholds around which the

compensation limit for mayors and deputies changes is the 1,000-inhabitant threshold, for which the maximum allowed compensation increases by 455 euros per month, as reported by Table B.4. We address the concern that the change in the compensation of mayors and deputy mayors may confound the change of the electoral system around the 1,000 threshold in Section 5 and show that this is unlikely. By contrast, rank-and-file councilors receive no compensation in municipalities with fewer than 100,000 inhabitants. They are therefore unaffected by the 1,000-inhabitant threshold.

Finally, the range of public policies a municipality can implement is the same, regardless of its population size. The difference lies in the design of the budget, which is admittedly less constraining for smaller municipalities. However, there is no discontinuity in the budget process at the 1,000-inhabitant threshold, meaning that the municipality's budget does not drive our results.

3 Empirical Framework

3.1 The Survey

The representative survey we leverage in our analyses was carried out in 2021 and featured 10,005 respondents living in 4,980 of the 34,868 municipalities that existed at the time.[3] Those municipalities are located in each of the 12 metropolitan regions, excluding Corsica, and in 94 out of the 94 metropolitan departments, again excluding Corsica. On average, a municipality included in the survey features 2.02 respondents. The most represented municipality has 413 respondents and the least represented only one.

In addition to the usual socio-demographic and political information, the survey specifically deals with corruption. In particular, respondents were asked to evaluate the degree of corruption they perceive of their municipal government. They could reply on a 10-point scale, from "no corruption at all" (0) to "a lot of corruption" (10).[4]

Figure C.1 in Appendix C.2 gives a first look at the relation between the electoral system

[3]For a precise description of the survey, see Appendix C.1.

[4]As the municipalities of Paris, Marseille, and Lyon are also divided in sub-municipal governments (*arrondissements* or *secteurs*) with their own mayors, it is not clear whether respondents were thinking about their sub-mayor or their mayor when evaluating corruption. In view of this uncertainty, we have excluded respondents from these three municipalities from our baseline estimates. We however show in Appendix Table D.2 that their inclusion do not alter our results.

and perceived corruption by plotting the distribution of answers separately for respondents living in municipalities below and above the 1,000-inhabitant threshold. While the two distributions are similar, with a mode on the fifth point of the scale, they nevertheless show significant differences. Specifically, there are more answers below 5 from people living in a municipality below the threshold than from those above it. More precisely, 53% of the residents living in municipalities of fewer than 1,000 inhabitants gave an answer below 5, while 28% gave an answer above 5. For residents of municipalities of more than 1,000 inhabitants, the distribution of answers is more even, as 40% of them chose an answer under 5 and 37% above 5.

The descriptive statistics presented in Appendix Table C.1 confirm this difference in the distribution of responses on both sides of the threshold. Specifically, in municipalities below the threshold, the average response is 4.1, while in those above it is 4.8. As the difference between the two means is statistically significant, this provides preliminary evidence that the party-list system increases the level of corruption that people perceive in their municipal government.

Table C.1 further shows the distribution of respondents according to the population threshold. 15% of respondents live in a municipality below the 1,000-inhabitant threshold, and 85% above. The former are spread over 1,352 different municipalities, while the latter live in 3,625 municipalities. Finally, the average population size of a municipality below and above the threshold is 515 and 41,272, respectively.

3.2 Identification Strategy

To identify the causal impact of electoral rules on perceived corruption, we leverage the change in the type of electoral system that occurs in municipalities of more than 1,000 inhabitants. In doing so, we emulate the identification strategy used by Eggers (2015) to measure the effect of the electoral system on turnout in French municipalities and update it to take into account the 2013 reduction of the threshold from 3,500 to 1,000 inhabitants. Specifically, we perform a regression discontinuity design (RDD) analysis where the running variable is the population size of the municipality and the treatment consists in switching from an individual majority system to a proportional list system. This boils down to

estimating the following equation:

$$\begin{aligned} Corruption_{i,m} = \beta_0 + \tau List_m + \beta_1 \widetilde{Population}_m \\ + \beta_2 List_m \times \widetilde{Population}_m + \boldsymbol{\beta}_3' \mathbf{X}_i + \epsilon_{i,m}, \end{aligned} \tag{1}$$

where

$Corruption_{i,m}$ is the level of corruption that respondent i living in municipality m perceives in her municipality;

$List_m$ is a dummy equal to one if municipality m's electoral system is a proportional list system (as opposed to an individual majority system) and zero otherwise;

$\widetilde{Population}_m = Population_m - 1000$ is the normalized population of municipality m;

$\mathbf{X}_i$ is a vector of individual characteristics. The set of characteristics includes respondents' gender, age, living arrangement, education, income, work status, and political self-position;

$\epsilon_{i,m}$ is the error term.

The parameter of interest is τ. Under the assumption that the expected potential outcomes are continuous in the running variable at the cutoff, τ is equal to the local-to-cutoff average treatment effect and reflects the causal effect of voting for a list of candidates rather than a single candidate on perceived corruption (Lee and Lemieux, 2010). To account for the nested structure of our data and allow for arbitrary dependence across respondents living in the same municipality, we cluster standard errors at the level of municipalities.[5] Finally, since we use Equation 1 to test multiple hypotheses, we also report False Discovery Rate (FDR) adjusted p-values (Anderson, 2008).

4 The Impact of the Electoral System of Perceived Corruption

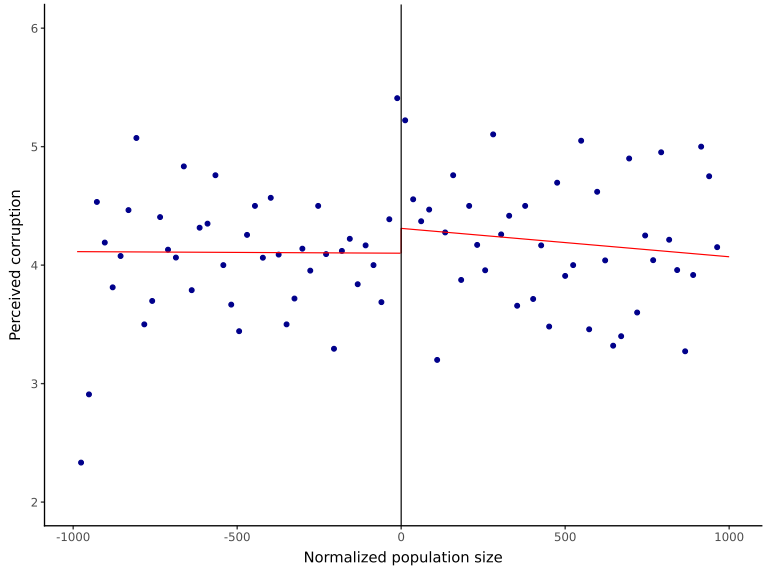
To provide a first sense of the effect of the electoral system on the corruption of elected representatives, we plot the relationship between population size and perceived corruption on either side of the cutoff. To reduce noise and make the discontinuity easier to identify, we present a smoothed plot where the running variable is divided into bins and perceived

[5]More precisely, we compute the cluster-robust variance estimator by using the covariate-adjustment approach proposed in Calonico et al. (2019b).

corruption is averaged within each bin. The bin width is determined following Calonico et al.'s (2015) data-driven procedure.

The results are depicted in Figure 1. They show a clear jump around the cutoff, which indicates that perceived corruption is higher in municipalities that use party-list proportional representation to elect their municipal government (above the cutoff) than in municipalities relying on individual majoritarian representation (below the cutoff). This provides the first set of evidence that representatives elected through a list tend to be more corrupt than representatives elected individually.

Figure 1: Discontinuity Effect of the Type of Electoral System on Perceived Corruption



Notes: RD plot of the effect of electoral system on perceived corruption. Municipalities located below the threshold use a two-round individual majority system, while those above the threshold use a two-round proportional list system. Population size is normalized by subtracting the cutoff (1,000) from each municipality's population size. Observations are averaged within bins following Calonico et al.'s (2015) data-driven procedure.

Table 1 reports the results of Equation 1. In Panel A, we draw from Gelman and Imbens (2019) and implement a local linear regression where we focus only on observations located within a small neighborhood around the cutoff. We compute the optimal bandwidth by using a series of data-driven bandwidth selectors introduced in Calonico et al. (2014) and Calonico et al. (2019a) (columns (1) to (3)). Regardless of the bandwidth choice, the estimated discontinuity is positive and significant at conventional levels, and the magnitude

of the estimated effect changes little. Accordingly, switching from a system where representatives are elected under individual majoritarian representation to a system where they are elected under a proportional list system increases the perception of their corruption. As the average perceived corruption in a municipality below the cutoff is equal to 4.7 and the estimated discontinuities range from 0.356 to 0.403, the change from a majoritarian to a proportional system increases the perception of corruption by 7.6% to 8.6%.

Our approach in Panel A implicitly assumes that the running variable – the municipality's normalized population size – is continuous. While this assumption is the standard approach in the literature and seems justified in our case by the high number of mass points the running variable exhibits, Eggers et al. (2018) still argue that population size should be treated as discrete, which calls for the use of tools adapted to a discrete setting. In RDDs, when the running variable is discrete, special attention should be devoted to the construction of the confidence intervals (CIs) as conventional data-driven bandwidth selectors may select bandwidths that are too large for the specification bias of the local linear regression estimator to be negligible, which can lead to CIs that undercover (Kolesár and Rothe, 2018, Lee and Card, 2008). We address that concern by computing "honest" CIs, as considered in Armstrong and Kolesár (2018) and Kolesár and Rothe (2018). Because they make no assumptions on the nature of the running variable and explicitly take into account the specification bias that may arise in non-continuous settings, those "honest" CIs achieve correct coverage even when the running variable is discrete. We construct them by implementing the bounded second derivative (BSD) approach which requires choosing a constant K that bounds in absolute value the second derivative of the conditional expectation function (Kolesár and Rothe, 2018).

Panel B of Table 1 reports the RD estimates for different values of the smoothness constant K, along with the associated BSD "honest" CIs. In Column (1), we estimate a lower bound of K by following the method described in the online supplements to Armstrong and Kolesár (2018) and Kolesár and Rothe (2018). In Columns (2) and (3), we consider a K two and three times larger than the lower bound, bearing in mind that the higher the K, the more conservative the approach and hence the resulting confidence intervals. For each value of K a new optimal bandwidth is computed, which allows us to further assess the sensitivity of our results to both K and the bandwidth choice, as recommended by Kolesár

and Rothe (2018). Regardless of the smoothness constant and the resulting bandwidth, the estimates remain very similar to before: The move from an individual majority system to a proportional list system leads to an increase in perceived corruption from 6.6% to 7%.

Finally, Panel C implements the local randomization approach considered in Cattaneo et al. (2015) and Cattaneo et al. (2017). Specifically, the idea is to assume that there exists a very small bandwidth around the cutoff in which the RDD is as good as a random experiment. This boils down to assuming that, inside that bandwidth, the placement of respondents below or above the cutoff is as-if random and the potential outcomes do not depend on the running variable, except through the treatment assignment. To select a window in which the local randomization assumption is the most plausible, we follow the data-driven procedure developed in Cattaneo et al. (2015) and Cattaneo et al. (2017), which leverages the information provided by predetermined covariates.[6] Column (1) of Panel C presents the results for the optimal bandwidth, while Columns (2) and (3) focus on half and double the optimal bandwidth, respectively. The estimated discontinuities are somewhat increasing but remain qualitatively similar to before, hence showing the robustness of our main findings.

The results of Table 1 sketch a consistent picture: Collective representation, as measured by voters voting for a list of candidates rather than for an individual candidate, results in more corrupt representatives. This finding aligns with the predictions of Persson and Tabellini (2002), who argue that majoritarian representation enhances accountability by emphasizing individual responsibility. In contrast, our results do not support the contention of Kunicova and Rose-Ackerman (2005) that collective representation should lead to lower levels of corruption because it allows parties to have more power to concentrate rents and to discipline candidates. Our results also go against the predictions of Myerson (1993) that proportional list systems give voters an incentive to always vote for candidates who are both honest and support their favourite policies, which fosters accountability.

[6] See Cattaneo et al. (2023) for an intuitive description of the method.

Table 1: RD Estimates of the Impact of the Type of Electoral System on Perceived Corruption

	Outcome: Perceived corruption		
	(1)	(2)	(3)
A. Non parametric (running variable treated as continuous)			
Discontinuity estimate	0.403***	0.356*	0.398**
	(0.155)	(0.206)	(0.181)
	{0.036}	{0.052}	{0.041}
Bandwidth	[988, 79,949]	[494, 39,974]	[645, 52,235]
Observations	8391	6709	7413
B. Non parametric (running variable treated as discrete)			
Discontinuity estimate	0.330**	0.317**	0.311**
	{0.041}	{0.041}	{0.043}
BSD 95% CIs	[0.0215, 0.639]	[0.00645, 0.627]	[0.000114, 0.622]
K	3.359e-11	6.718e-11	1.008e-10
Bandwidth	±41,244	±30,808	±26,209
Observations	7466	7088	6839
C. Local randomization			
Discontinuity estimate	0.588**	0.869**	0.437**
	(0.289)	(0.404)	(0.217)
	{0.041}	{0.041}	{0.041}
Bandwidth	±102	±51	±204
Observations	236	114	481

Notes: RD estimates. The model specification follows Equation 1. The unit of analysis is a survey respondent. The dependent variable is respondents' perception of the corruption of their municipal government, which is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The treatment consists of switching from an individual majority system to a proportional list system. Panel A fits local linear RD estimates. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). Column (1) implements the mean square error optimal bandwidth selector; Column (2) uses half of the optimal bandwidth; Column (3) implements the coverage error probability optimal bandwidth selector. Panel B fits local linear RD estimates. BSD refers to the bounded second derivative approach which is used to construct "honest" confidence intervals, as considered in Armstrong and Kolesár (2018) and Kolesár and Rothe (2018). The approach requires choosing a constant K that bounds the second derivative of the conditional expectation function. In Column (1), we use the lower bound value of K that we estimate following the method described in the online supplements to Armstrong and Kolesár (2018) and Kolesár and Rothe (2018). In Columns (2) and (3), we use a K two and three times larger than the lower bound. For each K, the optimal bandwidth is computed following Kolesár and Rothe (2018) and minimizes the mean square error of the local linear estimator. Panel C fits difference-in-means estimates. The optimal bandwidth is computed following Cattaneo et al. (2015) and Cattaneo et al. (2017) and is used in Column (1); Columns (2) and (3) use half and double the optimal bandwidth, respectively. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-position. Standard errors clustered at the municipal level are reported in parentheses; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b). False discovery rate (FDR) adjusted p-values are reported in curly brackets (Anderson, 2008). ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

5 Validity of the RD Design

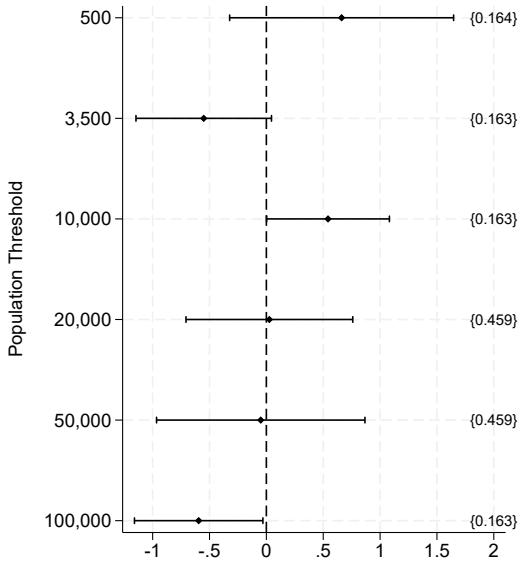
5.1 Ruling Out Other Changes Around the 1,000-inhabitant Threshold

Table B.4 documents that, in addition to a change in the electoral system, the 1,000-inhabitant threshold also entails a change in the compensation of mayors and in the gender parity rule. Specifically, municipalities above the cutoff allow for higher remuneration caps and impose a strict parity rule on candidate lists during municipal elections. This means that if higher compensation and gender parity are associated with more corruption, our RD estimates could be biased and not only reflect the change in voting system.

First, we show that the change in compensation at the cutoff does not drive perceived corruption by exploiting the fact that the compensation cap also changes at six other population thresholds than 1,000.[7] This allows us to perform a series of RDDs where we in turn use each alternative threshold as a cutoff. For all thresholds, we find no evidence of discontinuity, as presented in Figure 2.

[7]The six other population thresholds at which the compensation of mayors changes are: 500, 3500, 10,000, 20,000, 50,000, and 100,000.

Figure 2: Discontinuity Effect of Remuneration Caps on Perceived Corruption

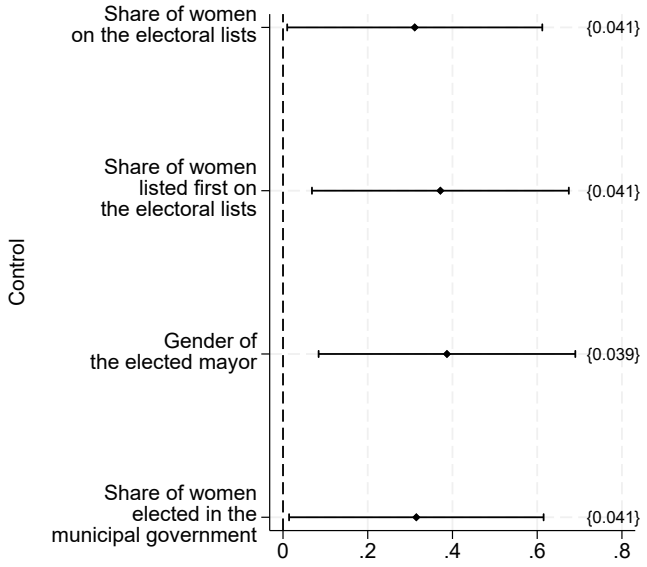


Notes: Local linear RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation 1. The dependent variable is respondents' perception of the corruption of their municipal government, which is measured by answers to the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". Each specification uses a different cutoff which corresponds to the population threshold indicated on the y-axis. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-position. The horizontal solid lines indicate 95% confidence intervals based on standard errors clustered at the municipal level; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b). False discovery rate (FDR) adjusted p-values are reported in curly brackets (Anderson, 2008).

Second, to provide evidence that the change in the gender parity rule at the cutoff does not bias our results, we show in Figure 3 that alternatively controlling for the share of women listed on the electoral lists, the share of women listed first on the electoral lists, the gender of the elected mayor, and the share of women that have been elected in the municipal council does not alter our baseline RD estimates.

Taken together, those results suggest that neither the compensation cap nor the gender parity obligation, which are linked to the 1,000-inhabitant threshold, is driving our findings.

Figure 3: RD Estimates of the Impact of the Type of Electoral System on Perceived Corruption – Controlling for Gender



Notes: Local linear RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation 1. The dependent variable is respondents' perception of the corruption of their municipal government, which is measured by answers to the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The treatment consists of switching from an individual majority system to a proportional list system. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, political self-position, and the variable indicated on the y-axis. The horizontal solid lines indicate 95% confidence intervals based on standard errors clustered at the municipal level; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b). False discovery rate (FDR) adjusted p-values are reported in curly brackets (Anderson, 2008).

5.2 A Matter of Trust Instead of Corruption?

François and Méon (2021) and François et al. (forthcoming) show that individuals' trust in their mayor correlates with how corrupt they perceive their municipal government to be. To rule out the possibility that our results capture in fact the effect of electoral rules on trust rather than on corruption, we take advantage of a question in our survey in which respondents were asked to indicate their level of trust in their mayor: "Could you tell me to what extent you trust the mayor of your municipality?" Respondents could

choose between the following options: "not at all", "a little", "some", or "totally".[8] We use this variable in two ways: first, as an outcome in our baseline specification and then, as a control. Table Table D.1 in Appendix D reports the results. We observe that trust is continuous at the 1,000-inhabitant threshold (Column [1] of Table Table D.1) and that controlling for it in our baseline regressions (Column [2] of the same table) does not impact the estimate of the discontinuity.

5.3 Placebo Tests

To further gauge the validity of our RDD setting, we conduct several placebo tests. In these tests, we investigate whether the only discontinuity we observe at the 1,000-inhabitant threshold is in the perception of the corruption of local governments.

In our first test, we run a series of RDDs where we use as dependent variable respondents' perception of corruption at other levels of government (e.g., the regional government, deputies, etc.). The idea is that if our empirical setting is valid, we should find no discontinuity as the electoral system at those other levels does not depend on the 1,000-inhabitant threshold. The outcomes of those regressions are reported in Figure D.1 of Appendix D and are in line with our expectation, as we observe no discontinuity. These findings also suggest that respondents do not conflate the various levels of government when assessing their degrees of corruption. Accordingly, they seem to correctly perceive that the electoral system of municipal elections may affect the incentives of municipal governments but not those of other governments.

In our second test, we investigate the presence of discontinuities at other unrelated cutoffs. To do so, we split our sample into two sub-samples – consisting respectively of the observations at the left and those at the right of the 1,000-inhabitant threshold – and perform an RDD in both sub-samples using the median of the running variable as cutoff.[9] The results are plotted in Figure D.2 in Appendix and show no signs of discontinuity at all.

[8] Admittedly, the trust question in the survey refers to the "mayor" while the corruption question pertains to the "municipal government". Since mayors are at the helm of municipal administrations, the difference is negligible.

[9] Using the median of the running variable as cutoff increases the RDD power to detect a discontinuity (Imbens and Lemieux, 2008).

5.4 Covariate Balance and Absence of Sorting

For our RDD estimates to capture the causal effect of the electoral system on corruption, we need to make sure that covariates are balanced at the cutoff and confirm that municipalities do not strategically manipulate their legal population figures to fall on either side of the cutoff (Eggers et al., 2018). Figure D.3 in Appendix D precisely shows that respondents' characteristics smoothly vary around the cutoff, which suggests that there is no systematic difference between treated and untreated respondents in terms of observables. In addition, Figure D.4 shows that the density of population size is smooth at the cutoff. Accordingly, there no evidence of sorting in population numbers.[10]

The results of Section 5 suggest that the jump we observe at the 1,000-inhabitant threshold is unlikely to be driven by anything other than the change in electoral system, making our results immune to Eggers et al.'s (2018) criticism of population-threshold RDDs. This bolsters our confidence regarding the causal interpretation of our findings.

6 The Impact of the Electoral System on Actual Corruption

We have so far used survey answers to measure the corruption level of municipal governments. While this approach provides a consistent measure of corruption for a vast, representative number of municipalities, it relies by definition on perception rather than on an objective assessment of corruption. In this section, we instead construct and use an objective measure of corruption. This allows us to determine whether our baseline findings can be read in terms of actual corruption, as well as to assess the relationship between actual and perceived corruption.

To construct our measure of actual corruption, we collected newspaper reports of corruption cases involving members of municipal governments that were handed down by the courts. We describe the sources of our data in Appendix E.1. We were able to identify 65 cases of corruption. Figure E.1 in Appendix E.2 shows the distribution of corruption cases around the cutoff. In Appendix E.3, we show that our measure of actual corruption posi-

[10]The test proposed by Frandsen (2017), which is similar to the traditional McCrary's (2008) test but tailored for discrete settings, further confirms the absence of manipulation of the running variable ($p = 0.815$, where the null is the absence of manipulation).

tively correlates with respondents' perception of corruption. This suggests that perceived corruption at least partly reflects actual corruption.

To explore the impact of the type of electoral system on actual corruption, we follow a strategy similar to our baseline approach dealing with perceived corruption and estimate an RDD where the dependent variable is our measure of actual corruption. That is, we estimate the following logistic regression:

$$\begin{aligned}\Pr(CorruptionCase_m = 1) = F\Big[\beta_0 + \tau List_m + \sum_{j=1}^{p} \beta_j \widetilde{Population}_m^j \\ + \sum_{j=1}^{p} \gamma_j List_m \times \widetilde{Population}_m^j + \epsilon_m\Big],\end{aligned} \tag{2}$$

where p is the degree of the polynomial up to the third order, $CorruptionCase_m$ is an indicator set to one if the municipal government of municipality m was involved in a corruption case, $List_m$ is an indicator equal to one if municipality m's electoral system is a party-list proportional system (as opposed to individual majoritarian), and $\widetilde{Population}_m$ is the normalized population size of municipality m. Given the very small number of corruption cases in our dataset, we estimate Equation 2 using the penalized maximum likelihood estimator proposed by Firth (1993). This method has been shown to provide unbiased estimates with rare event data (Leitgöb, 2013).

Table 2: Average Marginal Effect of the Impact of the Electoral System on the Probability that the Municipal Government is Involved in a Corruption Case

	Outcome: Probability that the municipal government is involved in a corruption case		
	(1)	(2)	(3)
Discontinuity estimate (AME)	0.00361***	0.00382***	0.00302***
	(0.000586)	(0.000620)	(0.00106)
Degree of the Polynomial	Linear	Quadratic	Cubic
Observations	34,376	34,376	34,376

Notes: Logit RD estimates using the penalized maximum likelihood estimation proposed by Firth (1993). The unit of observation is a municipality. The table reports average marginal effects. The model specification follows Equation 2. The dependent variable is an indicator equal to one if the municipal government of the municipality has been involved in a corruption case. The treatment consists of switching from an individual majority system to a proportional list system. Standard errors are reported in parentheses. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

Table 2 presents the results. We observe that members of the municipal governments of municipalities just above the 1,000-inhabitant threshold are more likely to be involved in a corruption case than members of the municipal governments of municipalities just below the threshold. Although the increase in the probability of observing a case of corruption is small, between 30% and 40% of a percentage point, it is statistically significant at the one-percent level. Consequently, the electoral system seems to affect not only perceptions of corruption but also the propensity of local officials to be involved in a corruption case.

7 Conclusion

Our findings show that voting for single individuals rather than a list of individuals may reduce the propensity of voters to consider French local elected officials corrupt or for those officials to indulge in dishonest practices. However, jumping to policy implications would likely be premature.

The focus on a single country and on a local-to-cutoff effect that allowed us to establish causality came at the cost of generalization: Before making policy declarations, one should make sure that our findings apply to other contexts and document the effect of the electoral system in other countries and at other levels of government. Also, because voting rules are many, complex, and often subtle, one should try to gather evidence of the effect of a wider range of rules. Finally, although we can claim that our findings are causal, they remain silent on the mechanisms that underpin them. In particular, we do not know how they rest on the reaction of candidates, elected officials, voters, and political parties. Determining the contribution of each of those types of agents therefore ought to be investigated.

Appendix

A Data Description

A.1 Variables Description

Table A.1: Variables Definition and Source

Variables	Definition	Source
Sex	=1 if the respondent is a woman	National survey
Age	Respondent's age in 6 categories: 18-24 years old, 25-34 years old, 35-49 years old, 50-59 years old, 60-69 years old, and 90 years old or more	National survey
Living arrangement	=1 if the respondent is married or lives with a partner	National survey
Education	Respondent's level of education in 5 categories: No degree at all, Professional, Secondary, Tertiary undergraduate, and Tertiary graduate or more	National survey
Income	Respondent's monthly income in 7 categories: less than 1250 €, [1250 – 1999] €, [2000 – 2499] €, [2500 – 3499] €, [3500 – 5999] €, 6000 €or more	National survey
Work status	Respondent's work status in 10 categories: Self-employed, Employer, Collaborator in family firm, Civil servant national bureau, Civil servant local bureau, Civil servant hospital, Employee of a public company, Employee of a private firm, Employee of a non-profit organization, and Inactive	National survey
Political self-position	Survey question: "In political matters, people talk of 'the left' and 'the right'. How would you place your views on this scale, generally speaking: 0 meaning "far left" and 10 "far right"?	National survey
Perceived corruption	Survey question: "Do you think that the municipal institution is involved in corruption?" on an 11-point scale ranging from 0 "no corruption at all" to 10 "a lot of corruption"	National survey
Actual corruption	actual measure of corruption cases by merging	See Section E.1
Municipal population	Legal definition of the 2020 municipal population	French national institute for statistical and economic studies

With the exception of actual corruption, all variables are defined at the respondent level. Actual corruption is defined at the municipality level.

B Additional Description of French Municipalities

Table B.1: Distribution of French Municipalities According to Their population

Population	N	%	Electoral system
fewer than 100 inhab.	3380	9.70	individual majority system
100 - 500 inhab.	14,986	43.00	
500 - 1,000 inhab.	6623	19.01	
1,000 - 5,000 inhab.	7719	22.15	proportional list system
5,000 - 10,000 inhab.	1154	3.31	
10,000 - 50,000 inhab.	856	2.46	
More than 50,000 inhab.	130	0.37	

Notes: The municipal population is the legal population at January 1, 2020, which is used to define the electoral system at the 2020 municipal election.

Table B.2: Distribution of Lists Running at 2020 Election According to Their Political Party Affiliation

Population	List's partisan affiliation?	
	No	Yes
1,000 - 2,000 inhab.	10,660 (81.50%)	2419 (18.50%)
2,000 - 5,000 inhab.	8783 (72.77%)	3286 (27.23%)
More than 5,000 inhab.	5347 (38.00%)	8724 (62.00%)

Table B.3: Distribution of French Municipalities According to the Number of Lists Running at the 2020 Election

Population	Number of lists		
	1	2	3 and +
1,000 - 2,000 inhab.	1841 (45.05%)	1844 (45.12)	402 (9.84%)
2,000 - 5,000 inhab.	884 (28.26%)	1523 (48.69%)	721 (23.05%)
More than 5,000 inhab.	112 (5.34%)	598 (28.49%)	1389 (66.17%)

Table B.4: Institutional Rules Determined by Municipality Population Size

Rules	The municipality stands... below the 1,000-inhab. threshold	above the 1,000-inhab. threshold
Electoral System	vote for individuals majority rule no gender parity rule	vote for a list proportional rule strict parity rule
Mayor and deputy mayor monthly compensation	max. 1622 €*	max. 2077 €*
councilor monthly compensation	No change	
Municipal council size	No change	
Public policy	No change	
Budget process	No change	

Notes: The 1,000-inhabitant threshold is the one at which the electoral system changes. *: the reported amount is a maximum cap imposed by the law, but the council can freely decide the compensation within the cap.

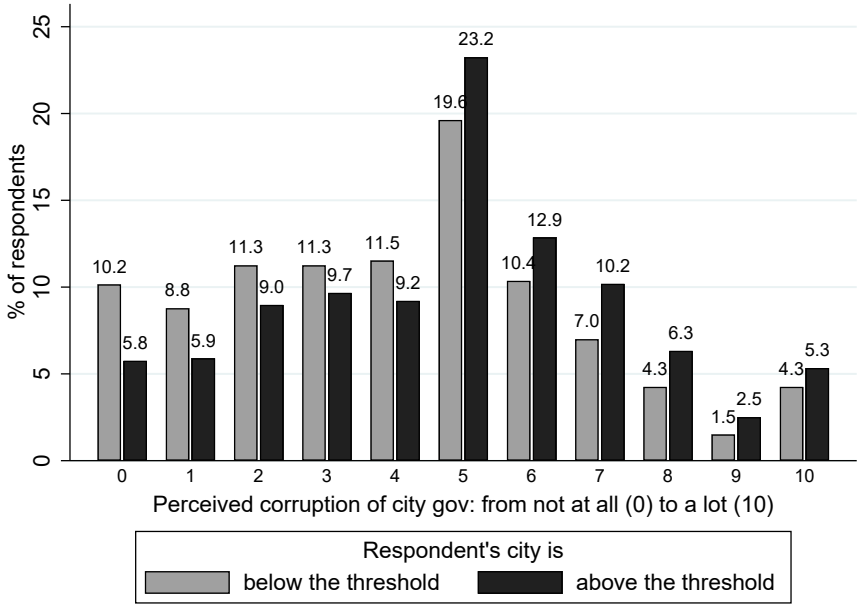
C The Survey

C.1 Survey Description

The survey was carried out online from July 7 to 11, 2021, as part of the Ipsos Access Online Panel. It consisted of a representative sample of the French population aged 18 and over registered on the electoral roll. The survey featured 10,105 respondents and was constructed using the quota sampling method applied to gender, age, profession, region, and urban area. Importantly, the municipality of each respondent can be identified, which allows us to match the respondent with information on her municipality, including population size and the type of electoral system for municipal elections.

C.2 Descriptive Statistics

Figure C.1: Perceived Corruption of Municipal Governments



Notes: Perceived corruption is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". $N = 9511$. The threshold is 1,000 inhabitants and corresponds to the change in electoral system: Municipalities located below the threshold use a two-round individual majority system, while those above the threshold use a two-round proportional list system.

Table C.1: Descriptive Statistics According to the City Threshold

	The respondent lives in a municipality...	
	below the threshold	above the threshold
Nb of respondents	1,457 (15%)	8,054 (85%)
Nb of municipalities	1352	3625
Average population size (inhab.)	515	41,272
Perception of the municipal government corruption		
Mean	4.107	4.811*
Sd	2.608	2.545

Notes: The threshold is 1,000 inhabitants and corresponds to the change in electoral system: Municipalities located below the threshold use a two-round individual majority system, while those above the threshold use a two-round proportional list system. The perception of the municipal government corruption is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". *the spread between the two means is significantly different from zero at $p = 0.0001$ (bilateral test).

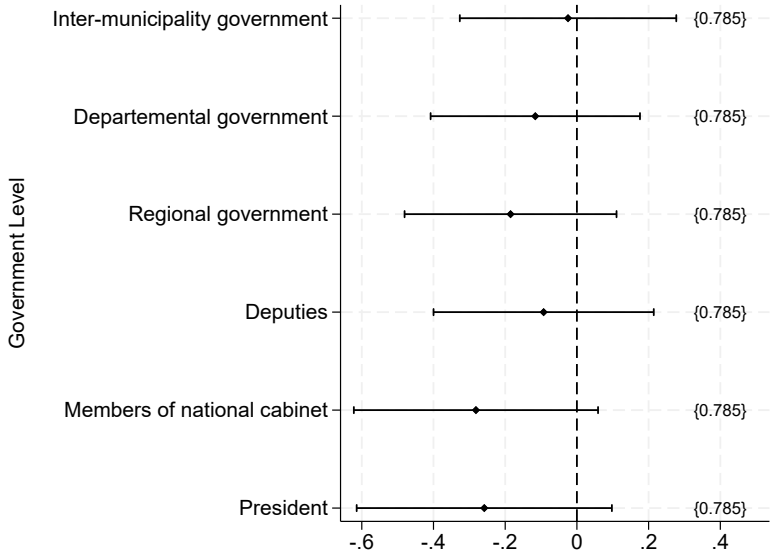
D Validity of the RD Design

Table D.1: RD Estimates – Trust in Mayor

Trust in mayor as	(1) Outcome Var.	(2) Control Var.
Discontinuity estimate	-0.0139	0.387***
	(0.0476)	(0.143)
		{0.036}
Bandwidth	[988; 85,716]	[988; 87,800]
Observations	8,432	8,449

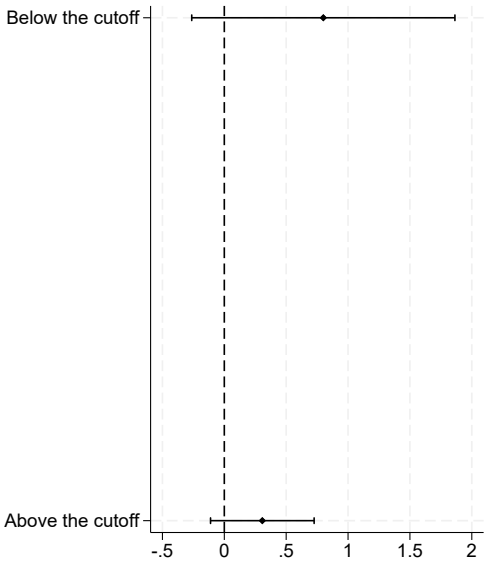
Notes: Local linear RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation 1. In Column (1), the dependent variable is respondents' trust in their mayor, which is measured through the question: "Could you tell me to what extent you trust the mayor of your municipality?" Respondents could choose between the following options: "not at all", "a little", "some", and "totally". In Column (2), the dependent variable is respondents' perception of the corruption of their municipal government, which is measured by answers to the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The treatment consists of switching from an individual majority system to a proportional list system. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-position. Column (2) further controls for respondents' trust in their mayor. Standard errors clustered at the municipal level are reported in parentheses; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b). False discovery rate (FDR) adjusted p-values are reported in curly brackets (Anderson, 2008). ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

Figure D.1: Discontinuity Effect of the 1,000-Population Threshold on Perceived Corruption at Other Levels of Government



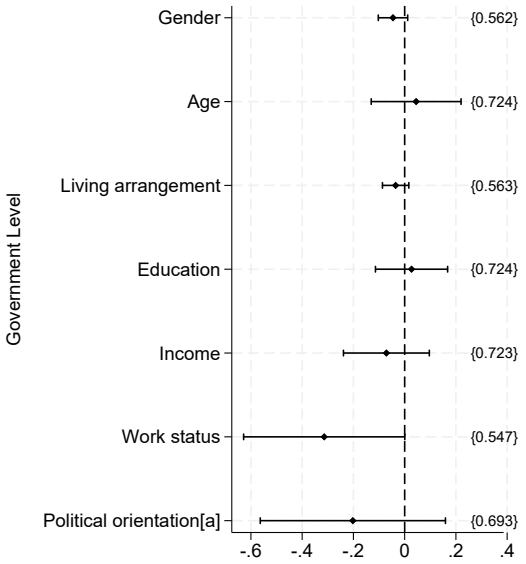
Notes: Local linear RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation 1. Each specification uses a different dependent variable which corresponds to respondents' perceived corruption for the level of government indicated on the y-axis. The treatment consists of switching from an individual majority system to a proportional list system. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-position. The horizontal solid lines indicate 95% confidence intervals based on standard errors clustered at the municipal level; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b).

Figure D.2: Discontinuity Effect at Placebo Cutoffs



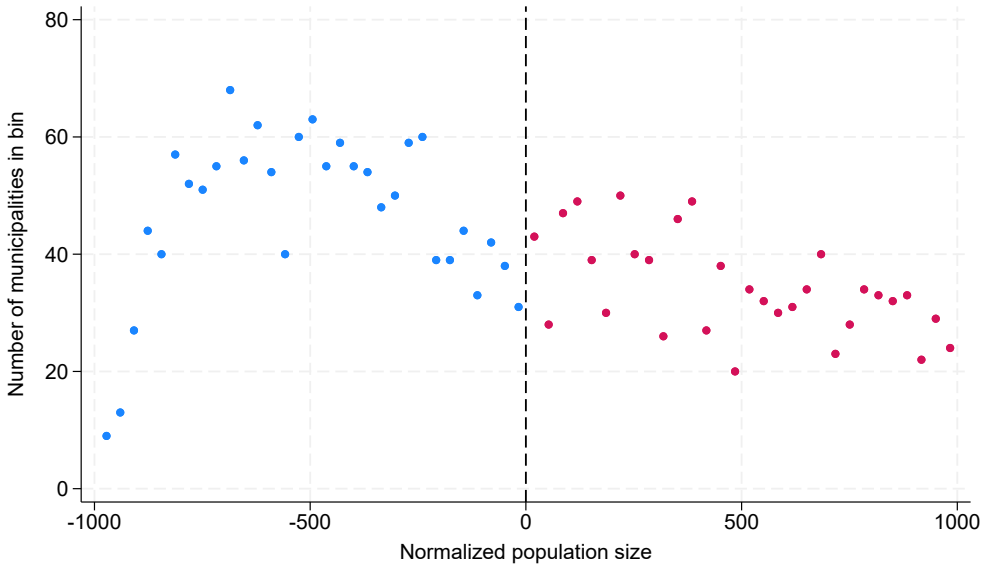
Notes: Local linear RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation 1. The dependent variable is respondents' perception of the corruption of their municipal government, which is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The *Below the cutoff* specification implements an RDD on the observations below the 1000 cutoff using as cutoff the median of the running variable. The *Above the cutoff* specification does the same but for the observations above the cutoff. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-position. The horizontal solid lines indicate 95% confidence intervals based on standard errors clustered at the municipal level; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b).

Figure D.3: Covariates Balance



Notes: Local linear RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation 1. Each specification uses a different dependent variable which corresponds to the variable indicated on the y-axis. The treatment consists of switching from an individual majority system to a proportional list system. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). [a] Political self-position is scaled by 10 (from extreme left to extreme right). The horizontal solid lines indicate 95% confidence intervals based on standard errors clustered at the municipal level; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b).

Figure D.4: Frequency of Population Size around the Cutoff



Notes: The y-axis represents the frequency and the x-axis the population size. Population size is normalized by subtracting the cutoff (1,000 inhabitants) for each municipality. Municipalities located below the cutoff use an individual majority system while municipalities above the cutoff rely on a proportional list system.

Table D.2: RD Estimates – With Paris, Lyon, and Marseille

	Outcome: Perceived corruption		
	(1)	(2)	(3)
Discontinuity estimate	0.523***	0.482**	0.530***
	(0.154)	(0.204)	(0.180)
	{0.012}	{0.041}	{0.027}
Bandwidth	[988, 1.77e+06]	[494, 95857.093]	[988, 1.77e+06]
Observations	9,296	7,941	8,435

Notes: Local linear RD estimates. The model specification follows Equation 1. The unit of analysis is a survey respondent. The dependent variable is respondents' perception of the corruption of their municipal government, which is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The treatment consists of switching from an individual majority system to a proportional list system. The optimal bandwidth is computed following Calonico et al. (2014) and Calonico et al. (2019a). Column (1) implements the mean square error optimal bandwidth selector; Column (2) uses half of the optimal bandwidth; Column (3) implements the coverage error probability optimal bandwidth selector. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-position. Standard errors clustered at the municipal level are reported in parentheses; the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019b). False discovery rate (FDR) adjusted p-values are reported in curly brackets (Anderson, 2008). ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

E Perceived vs. Actual Corruption

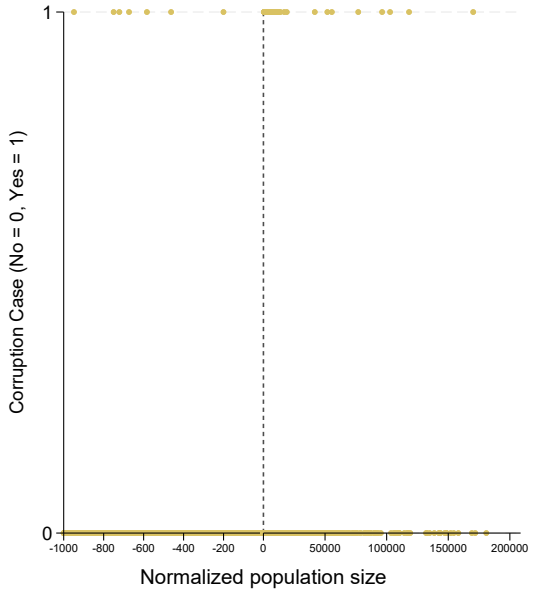
E.1 Data Source

We construct our measure of actual corruption by merging several sources. First, we use the corruption cases reported by "France Corruption", a website edited by the members of the French anti-corruption association "Anticor" that compiles news items related to corruption in France.[11] Second, we leverage the dataset created by the French section of Transparency International that lists the convictions handed down by French courts and reported in the press.[12] Third, we use the cases reported by the "Observatoire des Politiques", which is an independent website that records all the convictions and indictments of French politicians related to corruption.[13]. Finally, to complete our database with the most recent cases, we collected on Google all news articles that were published within a year and that contained the expression "maire condamné" (convicted mayor).

[11] https://francecorruption.fr/.
[12] https://transparency-france.org/.
[13] https://odp2017.wordpress.com/.

E.2 Descriptive Statistics

Figure E.1: Corruption Cases Probability as a Function of a Population Size



Notes: The y-axis represents the probability that the municipal government is involved in a corruption case; the x-axis represents the population size. Population size is normalized by subtracting the cutoff (1,000) from each municipality's population size. Municipalities located below the cutoff use an individual majority system while municipalities above the cutoff rely on a proportional list system.

E.3 The Relationship Between Actual and Perceived Corruption

To explore the relationship between actual and perceived corruption by estimating the coefficients of the following equation:

$$Corruption_{i,m} = \beta_0 + \beta_1 CorruptionCase_m + \boldsymbol{\beta}_3^{'}\mathbf{X}_i + \lambda_r + \epsilon_{i,m}, \tag{E.1}$$

where $CorruptionCase_m$ is our measure of actual corruption and is defined as an indicator equal to one if the municipal government of municipality m was involved in a corruption case. The other variables are defined as in the baseline Equation 1.

The results are depicted in Table E.1 and show that our measure of actual corruption positively correlates with respondents' perception of corruption. The coefficient is positive and statistically significant at the one-percent level. The point estimate shows that, everything else equal, respondents living in a municipality where a corruption case was made

public report a level of corruption that is half a point higher on a 10-point scale. This suggests that perceived corruption at least partly reflects actual corruption.

Table E.1: Correlation between Actual and Perceived Corruption

	Outcome: Perceived corruption	
	(1)	(2)
	Coef.	SE
Municipal government involved in a corruption case (=1 if yes)	0.826***	0.280
Observations	9,511	

Notes: The unit of analysis is a survey respondent. The model specification follows Equation E.1. The dependent variable is respondents' perception of the corruption of their municipal government, which is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The variable *Municipal government involved in a corruption case* is defined as an indicator equal to one if the municipal government has been involved in a corruption case. We control for respondents' gender, age, living arrangement, education, income, work status, and political self-position. Standard errors clustered at the municipal level are reported in parentheses. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

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