# The Causal Impact of the Electoral System on Corruption[*]

Abel François[†], Nicolas Lagios[‡], and Pierre-Guillaume Méon[§]

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## Abstract

We estimate the causal effect of the type of electoral system on corruption by exploiting a feature of French municipal elections: Municipalities with fewer than 1,000 inhabitants use an individual majority system, while those above this threshold use a proportional closed-list system. Crossing the threshold therefore implies two opposite changes: reduced individual accountability, which may increase corruption, and stronger collective control, which may reduce it. Using a regression discontinuity design with both survey and actual corruption data, we find that the individual accountability effect dominates, as exceeding the threshold leads to higher levels of both perceived and actual corruption.

**Keywords:** Corruption, Electoral Systems, Majoritarian Representation, Proportional Representation, Accountability, Local Government.
**JEL Codes:** D72, D73.

# 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 politicians (Ferejohn, 1986), they remain an imperfect device: Some officials still find misconduct attractive. However, while perfect monitoring is 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 plurality-majority systems with proportional representation systems. From a theoretical perspective, how the two systems compare in terms of corruption has been examined through various channels, all of which yield conflicting predictions.

A first channel highlights the role of accountability. On the one hand, majoritarian representation emphasizes the individual accountability of officials, which should result in more disciplined officials and lead to less corruption. Under majoritarian representation, voters vote for individual candidates, which creates a direct link between voters and candidates and incentivizes the latter to behave honestly (Persson and Tabellini, 2002, chap. 9; Persson et al., 2003). This contrasts with proportional representation, which forces voters to vote for a predefined list of candidates, resulting in looser control by voters, higher monitoring costs, and weaker incentives for politicians on a given list to behave honestly. On the other hand, proportional representation should reduce corruption relative to majoritarian representation by emphasizing collective control, whether through inter-party monitoring (Lijphart, 2012) or intra-party monitoring (Kunicova & Rose-Ackerman, 2005). Both types of monitoring should discourage corruption: the former through mutual oversight and power-sharing among coalition partners, and the latter by incentivizing candidates to behave honestly in order to maintain their position within the party and protect its public image.

A second channel linking electoral systems to corruption is political fragmentation. According to Duverger's law, majoritarian systems tend to produce two-party competition, whereas proportional representation encourages multiparty competition. When

more parties can compete – as under proportional representation – voters are more likely to have honest alternatives to vote for, such as anti-corruption parties or candidates similar to incumbents but who are perceived as less corrupt (Stephenson, 2015), which allows voters to oust dishonest politicians and thus results in lower levels of corruption. In addition, under proportional representation, voters can support honest candidates who align with their preferred policies without fear of wasting their vote (Myerson, 1993). At the same time, however, the incentives to monitor and expose corruption committed by politicians on other lists may be weaker with multiple parties because the disclosed information is a public good that could benefit several contenders. The incentive for candidates to behave honestly can, therefore, be lower under proportional representation (Stephenson, 2015).

The effects of accountability and fragmentation can be amplified or attenuated by district magnitude and by whether lists are open or closed (Carey & Shugart, 1995; Chang & Golden, 2007). Accordingly, theoretical predictions are even further blurred, and isolating the effect of each channel becomes more difficult.

As the theoretical literature is inconclusive, the question ultimately becomes an empirical one. Yet, empirical evidence is also mixed. Some studies support the view that proportional representation is associated with higher levels of corruption (Kunicova & Rose-Ackerman, 2005; Persson & Tabellini, 2002; Persson et al., 2003; Schleiter & Voznaya, 2014; Testa, 2010), while others find no (Adserà et al., 2003; Serra, 2006) or even a negative association (Verardi, 2004).

However, these findings overwhelmingly rest on the comparison of countries, be it in cross-sectional or panel settings or via simple correlations. The reported correlations between electoral systems and corruption therefore lack a causal interpretation, which may explain the contradictory findings in the literature. As Eggers (2015) points out, countries that have adopted different electoral systems may also differ in a number of characteristics that affect both the choice of an electoral system and the level of corruption, such as the nature of social cleavages, the type of party system, or the prevalence of norms of inclusion, resulting in an omitted variable bias. Moreover, standard estimations

may be subject to reverse causality, if corrupt decision-makers can, for instance, choose the electoral system that minimizes their likelihood of being sanctioned.

In this paper, we establish causality thanks to a discontinuity in the French electoral system for the election of the municipal council. Specifically, we exploit the fact that the law conditions the electoral system on the population size of a municipality, with a threshold at 1,000 inhabitants. Below this threshold, the system is a majority system with two rounds; above it, the system is a standard closed-list proportional representation (CLPR) system with two rounds. This discontinuity therefore induces two opposite changes: reduced individual accountability, which may increase corruption, and stronger collective control, which may reduce corruption.

Our empirical setup offers two key advantages. First, it allows us to implement a regression discontinuity design to obtain unbiased causal estimates of the effect of switching from a majoritarian to a proportional system on the level of corruption among municipal officials. Second, because district magnitude, ideological positioning, and political competition remain largely unchanged around the threshold, we can isolate the effect of the first channel – electoral accountability – and provide unambiguous evidence of its role in shaping the relationship between the electoral system and corruption.

Exploiting a large-scale national survey ($N > 10,000$), in which we asked respondents to assess the corruption level of their municipal government, we show that the change in the voting system at the threshold increases perceived corruption by 10.7%, on average. 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 governments of municipalities located just above the threshold are 0.4 percentage points more likely to be involved in a corruption case than those of municipalities just below the threshold.

As our results indicate that both perceived and actual corruption increase at the threshold, we can infer that the transition from individual accountability to collective control leads to more corruption. This implies not only that the accountability effect is at work, but also that it dominates the collective control effect, if the latter exists at

all. These findings are consistent with the correlations reported by Persson and Tabellini (2002), Persson et al. (2003), and Kunicova and Rose-Ackerman (2005). More broadly, our results stand in contrast to the predictions of Myerson (1993) and Lijphart (2012), who argue that proportional representation should result in less corruption.

The main contribution of the paper is straightforward: It provides the first unambiguous evidence of a causal effect of the electoral system on corruption, specifically that proportional representation leads to higher levels of corruption among elected officials. In doing so, it complements previous non-causal and mixed evidence (Adserà et al., 2003; Chang & Golden, 2007; Kunicova & Rose-Ackerman, 2005; Persson & Tabellini, 2002; Persson et al., 2003; Serra, 2006; Verardi, 2004). In this respect, a key contribution is that we provide clear evidence that this relationship is primarily driven by a decrease in the personal accountability of officials.

Another innovation is that we provide that evidence using within-country cross-municipality data, as opposed to cross-country (Chang & Golden, 2007; Kunicova & Rose-Ackerman, 2005; Persson & Tabellini, 2002; Persson et al., 2003) or cross-district data (Chang & Golden, 2007). This allows us to contribute to the literature on the effect of electoral systems on municipal outcomes (Chin, 2023; Eggers, 2015; Sieg & Yoon, 2022) by reporting evidence of an additional local outcome that responds to voting rules, specifically the corruption of local officials.

Finally, we contribute to the literature by complementing the existing findings on perception with evidence from actual corruption cases. Current literature on the relationship between electoral systems and corruption predominantly relies on subjective corruption indices.

# 2 The French Municipal Electoral System

## 2.1 French Municipalities

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*). 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 most recent municipal election year – there were 34,868 municipalities in mainland France. Of these, 24,989 (71%) had fewer than 1,000 inhabitants, 19% had between 500 and 1,000 inhabitants, and 22% between 1,000 and 5,000 inhabitants. This means that we have enough observations and variance in population size around the 1,000-inhabitant threshold (see Appendix B).

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 generally do 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: most municipalities just above the cutoff have only one or, at most, two competing lists (Appendix Table B.3).

These two features are important because they allow us to rule out the possibility that the effect of the threshold on perceived corruption is driven by the ideological positioning of the municipal government or by the intensity of political competition.

Finally, a key characteristic of French municipalities is that their population is determined every year by the French National Institute of Statistics. The legal population is an official statement over which local politicians have no influence. Therefore, although local policies may indirectly affect population size, direct manipulation is unlikely, and local politicians have, at best, only imprecise control over it. This lends credibility to our RD strategy, as only a precise control of the running variable invalidates the RD design (Lee & Lemieux, 2010). In Section 5.4, we provide further evidence of the absence of sorting in population numbers around the 1,000-inhabitant threshold.

## 2.2 The Change in the Electoral System at 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 (Code électoral, Articles L252 to L255 and L260 to L262, 2013). Below the population threshold, the voting system is a majoritarian plurinominal open-list system; above, it becomes a standard closed-list proportional representation (CLPR) system with a majority bonus.

Specifically, below the threshold, the electoral system follows a first-past-the-post, two-round format, designed to elect the municipal council in a single constituency that corresponds to the entire municipality. Any resident of the municipality can run for a municipal councilor seat, and voters vote for individual candidates. The candidates receiving an absolute majority of votes in the first round (and a number of votes greater than or equal to a quarter of registered voters) or the most votes in the second round are elected to the municipal council. If several candidates obtain the same number of votes, the oldest is elected. Candidates may also submit grouped candidacies. However, even in this case, voters have the option to cross out certain names or add others, a practice referred to as *panachage.* The number of votes is moreover calculated individually for each candidate. Despite the presence of groups, the system therefore emphasizes individual candidates, with those receiving the most votes being ultimately elected to the municipal council.

Above the threshold, the electoral system is a standard CLPR system with a majority bonus. 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. *Panachage* is not allowed. In the first round, if a list obtains an absolute majority of votes, it obtains at least 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 obtains an absolute majority of votes, a second round is organized. In this round, only the lists that have obtained at least 10% of the votes in the first round are allowed to run. The lists that received at least 5% of the votes in the first round may merge with a list having obtained 10% of the votes. Eventually, the procedure for allocating seats is similar to that of the first round.

## 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 documented in Table B.4. We describe them below and show that they do not confound our local-to-threshold estimates of the effect of the electoral system 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 at 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, which allows us to rule out the effect of district magnitude.

Second, 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 constrained 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.

Third, the compensation of councilors varies according to population thresholds, but it does not do so 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 and 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. In Section 5.1, we address the concern that the change

in mayoral compensation at the 1,000-inhabitant threshold may confound the effect of the electoral system shift 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, above the threshold, each electoral list must include an equal number of men and women, with alternating representation mandatory. No such gender requirement exists below the threshold. In Section 5.1, we provide evidence that this change in the gender parity rule at the threshold does not explain our results.

## 2.4   Summary of Changes at the Threshold and Their Expected Effect on Corruption

As discussed above, Section 5.1 shows that the changes in mayoral compensation and in the gender parity rule at the 1,000-inhabitant threshold are unlikely to drive corruption. Moreover, district magnitude, ideological positioning, and political competition remain largely constant. The key differences in the type of electoral system around the threshold can therefore be summarized as follows. Below 1,000 inhabitants, the system is majoritarian, and voters vote for individual candidates. Above, the system is proportional, and voters vote for a list of candidates. Crossing the threshold thus implies two opposite changes: reduced individual accountability, which may increase corruption, and stronger collective control, which may reduce it. In other words, our design enables us to isolate the effect of the voting system.

# 3   Empirical Framework

## 3.1   The Survey

The representative survey we leverage in our analyses was carried out in 2021 and featured 10,105 respondents living in 4,980 of the 34,868 municipalities that existed at the time.[1] Those municipalities are located in each of France's 12 metropolitan regions,

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

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, with the most represented municipality having 413 respondents and the least represented only one.

In addition to the usual sociodemographic 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).[2]

Figure C.1 in Appendix C.2 gives a first look at the relationship between the electoral system 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 with ratings 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, answers are more evenly distributed, 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 also shows the distribution of respondents according to the population threshold. 15% of respondents live in a municipality below the 1,000-inhabitant threshold,

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[2]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. We therefore exclude respondents from these three municipalities from our baseline estimates. We show in Appendix Table D.2 that their inclusion does, however, not alter our results.

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 inhabitants, 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 at the 1,000-inhabitant threshold. 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. Specifically, we perform a regression discontinuity design (RDD) analysis where the running variable is the municipality's population size and the treatment consists of switching from a majoritarian plurinominal open-list system to a CLPR system. This boils down to estimating the following regression:

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

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 variable equal to one if municipality $m$ uses a standard CLPR electoral system and zero if it uses a majoritarian plurinominal open-list system;

- $\widetilde{Population}_m = (Population_m - 1000)$ 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, type of employment, and political self-positioning;

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

The parameter of interest is $\tau$. Under the assumption that the expected potential outcomes are continuous in the running variable at the cutoff, $\tau$ is equal to the local-to-

Figure 1: Discontinuity Effect of the Type of Electoral System on Perceived Corruption
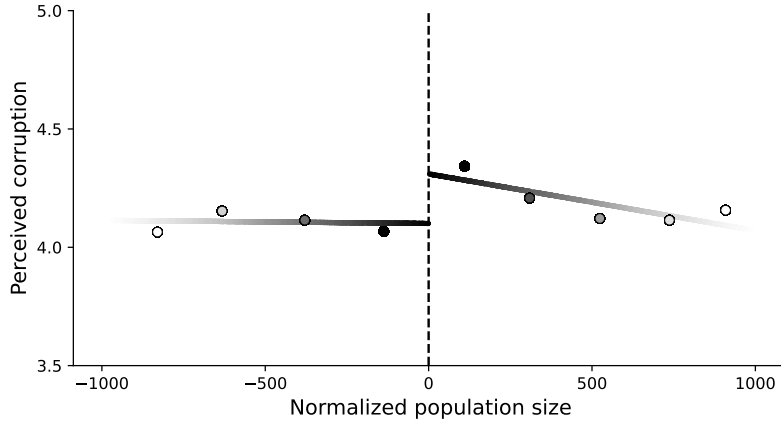
cutoff average treatment effect and reflects the causal effect of the electoral system change at the threshold on perceived corruption (Lee & Lemieux, 2010). Finally, to account for the nested structure of our data and allow for arbitrary dependence across respondents living in the same municipality, we cluster standard errors at the level of municipalities.

# 4   The Impact of the Electoral System on Perceived Corruption

To provide an initial sense of the effect of the electoral system on perceived corruption, we plot the relationship between population size and perceived corruption on either side of the cutoff. The results, depicted in Figure 1, show a clear jump around the cutoff. This indicates that perceived corruption is higher in municipalities that use the CLPR system to elect their municipal government (above the cutoff) than it is in municipalities relying on a majoritarian plurinominal open-list system (below the cutoff). This offers the first set of evidence that officials elected through a list tend to be perceived as more corrupt than officials elected individually.

The RD estimates are reported in Table 1. In Panel A, we follow the standard

approach in the literature (Gelman & Imbens, 2019) and fit a series of non-parametric regressions based on different optimal data-driven bandwidth selectors. Regardless of the bandwidth, the estimated discontinuity is positive and significant at conventional levels, and the magnitude of the estimated effect changes little. This shows that our findings are robust to the choice of the bandwidth. As the average perceived corruption in a municipality below the cutoff is equal to 4.7 and the estimated discontinuities range from 0.317 to 0.403, the treatment effect ranges from 6.7% to 8.6%. Accordingly, the change in electoral rules at the threshold increases the perception of corruption among local officials.

However, a potential concern with our non-parametric approach is that the data-driven bandwidth selectors may choose a bandwidth that is too large, which may bias the RD estimates. To address this issue, we complement our baseline estimates with the RD local randomization approach introduced in Cattaneo et al. (2015) and Cattaneo et al. (2017). This method shifts from estimating the RD treatment effect at the cutoff to estimating it within a very narrow bandwidth around the cutoff, where the treatment is assumed to be as good as random. The key advantage of this framework is that it allows us to estimate the RD treatment effect within a tight window, even with a limited number of mass points, thereby mitigating concerns about overly wide bandwidths in our non-parametric approach.

When implementing the local randomization approach, we follow the data-driven procedure developed by Cattaneo et al. (2015) and Cattaneo et al. (2017), which leverages the information provided by predetermined covariates to select the bandwidth in which the local randomization assumption is the most plausible. These results are reported in Panel B of Table 1. Column (1) presents results for the optimal bandwidth, while the other columns show results for variations: double, half, and a quarter of the optimal bandwidth. The estimated discontinuities are somewhat larger but remain qualitatively similar to before. In all cases, even when using a bandwidth as small as 51 or 26, the estimates are in line with the non-parametric approach, which bolsters our confidence in the robustness of our findings. Specifically, the average estimated effect is 13.7%.

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

| | Outcome: Perceived corruption | | | |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| **Panel A. Non parametric** | | | | |
| Discontinuity estimate | 0.403*** | 0.398** | 0.330** | 0.317** |
| | ((0.155) | (0.181) | (0.158) | (0.158) |
| | {0.034} | {0.039} | {0.039} | {0.039} |
| | | | | |
| Optimal bandwidth selector | Calonico et al. (2014) | Calonico et al. (2014) | Kolesár and Rothe (2018) | Kolesár and Rothe (2018) |
| Bandwidth | [988; 79,949] | [645; 52,235] | ±41,244 | ±30,808 |
| Observations | 8,391 | 7,413 | 7,466 | 7,088 |
| **Panel B. Local randomization** | | | | |
| Discontinuity estimate | 0.588** | 0.437** | 0.869** | 0.692* |
| | (0.289) | (0.217) | (0.404) | (0.377) |
| | {0.039} | {0.039} | {0.039} | {0.044} |
| | | | | |
| Optimal bandwidth selector | Cattaneo et al. (2015) | Optimal*2 | Optimal*0.5 | Optimal*0.25 |
| Bandwidth | ±102 | ±204 | ±51 | ±26 |
| Observations | 236 | 481 | 114 | 52 |

*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 a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. Panel A fits local linear RD estimates. Columns (1) and (2) implement the mean square error optimal bandwidth selector and the coverage error probability optimal bandwidth selector, respectively, as considered in Calonico et al. (2014) and Calonico, Cattaneo, and Farrell (2019). The bandwidths in Columns (3) and (4) are based on the approach considered in Armstrong and Kolesár (2018) and Kolesár and Rothe (2018), which requires choosing a constant $K$ that bounds the second derivative of the conditional expectation function. In Column (3), 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 Column (4), we use a $K$ that is twice the lower-bound estimate. Panel B 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), (3), and (4) use double, half, and a quarter of the optimal bandwidth, respectively. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-positioning. 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, Cattaneo, Farrell, and Titiunik (2019). 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.

Finally, since we are testing multiple hypotheses, Table 1 also reports Anderson's (2008) False Discovery Rate (FDR) adjusted p-values, which account for multiple testing and therefore reduce the likelihood that our results are driven by false rejections. Our findings hold even after this p-value adjustment.

The results of Table 1 sketch a consistent picture: Since our estimates show that perceived corruption increases at the threshold, we can infer that the switch from individual accountability to collective control leads to more corruption. In other words, individual accountability incentivizes elected officials to behave more honestly. Moreover, our results imply that the effect of individual accountability outweighs that of collective control – if the latter has any effect at all. This is consistent with the correlations observed by Kunicova and Rose-Ackerman (2005), Persson and Tabellini (2002), and Persson et al. (2003). In contrast, our results do not support the predictions of Myerson (1993) and Lijphart (2012) that proportional list systems should lead to less corruption.

# 5    Validity of the RD Design

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

As explained in Section 2, in addition to a change in the electoral system, the 1,000-inhabitant threshold entails a change in mayoral compensation 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 higher levels of corruption, our RD estimates could be biased and may only partially (or not at all) reflect the change in voting system. We address these concerns in turn.

First, we show that the change in compensation at the cutoff does not drive perceived corruption. We do so by exploiting the fact that the compensation cap also changes at six other population thresholds: 500, 3,500, 10,000, 20,000, 50,000, and 100,000. This allows us to perform a series of RDDs where we use each alternative threshold as a cutoff. For all

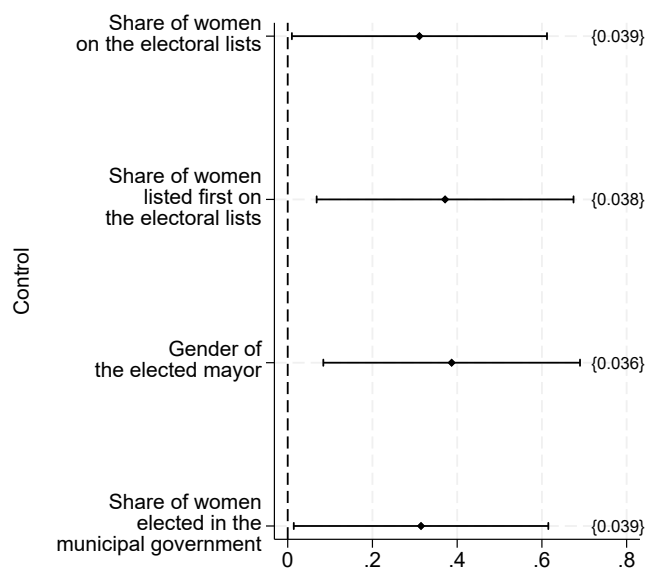Figure 2: Discontinuity Effect of Remuneration Caps on Perceived Corruption
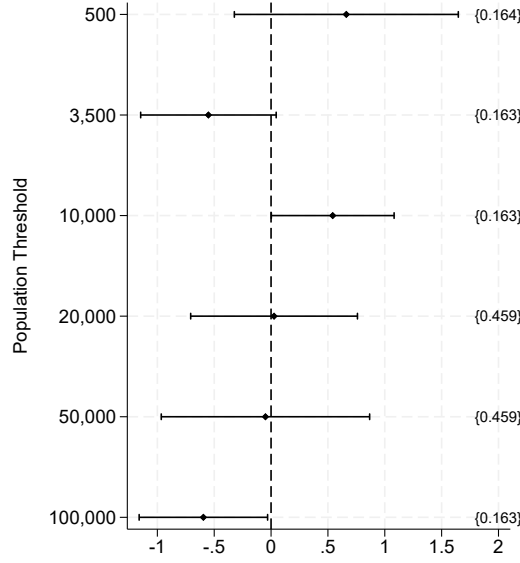


*Notes*: RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation (1). The dependent variable is respondents' perception of the corruption of their municipal government, which is measured by answers to the question: "Do you think that the municipal government 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. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-positioning. The horizontal solid lines indicate 95% confidence intervals based on standard errors clustered at the municipal level. False discovery rate (FDR) adjusted p-values are reported in curly brackets (Anderson, 2008).

thresholds, we find no evidence of discontinuity, especially after adjusting the inference for multiple hypothesis testing, as presented in Figure 2.

Second, we provide evidence that the change in the gender parity rule at the cutoff is unlikely to explain our results. Specifically, Figure 3 shows that controlling for (i) the share of women listed on the electoral lists, (ii) the share of women listed first on the electoral lists, (iii) the gender of the elected mayor, and (iv) the share of women who have been elected in the municipal council does not alter our baseline RD estimates.

Taken together, these results suggest that neither the compensation cap nor the gender parity rule, 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*: 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 a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, political self-positioning, 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. 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. (2025) 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 reflect the effect of the electoral system on trust rather than on corruption, we draw on a question in our survey that asked respondents 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".[3] We use this variable in two ways: first as an outcome in our baseline specification and second as a control. 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 D.1) and that controlling for it in our baseline regression (Column [2] of the same table) does not impact the estimated 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 there are discontinuities at points other than the actual cutoff.

In our first test, we run a series of RDDs where the dependent variable is 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 at the 1,000-inhabitant threshold, since the electoral system at those other levels does not depend on that 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 jump in perceived corruption. 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

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[3]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.

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 to the left and those to 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. The results are plotted in Appendix Figure D.2 and show no signs of discontinuity.

## 5.4 Covariate Smoothness and Absence of Population Sorting

In RDDs, identification requires (i) smoothly varying covariates at the cutoff and (ii) no strategic manipulation of legal population figures by municipalities to fall on either side of the cutoff (Lee & Lemieux, 2010). Figure D.3 in Appendix D shows that respondents' characteristics vary smoothly at 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, indicating that there is no sorting in population numbers.

The results of Section 5 suggest that the jump in perceived corruption we observe at the 1,000-inhabitant threshold is unlikely to be driven by anything other than the change in the electoral system. This makes our results immune to Eggers et al.'s (2018) criticism of population-threshold RDDs and 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. However, public perception may be shaped by the electoral system in ways that differ from actual corruption. For instance, majority

systems tend to limit voters' choices to parties that have converged toward the center, leaving voters whose preferences lie further from the center feeling marginalized (Lijphart, 2012). By contrast, proportional representation may allow more parties to exist, in line with Duverger's law, including parties that represent minorities and radical voters. As a result, proportional representation could lead to a more positive perception of the political process and of politicians.

In line with this contention, Banducci et al. (1999) observed a shift towards more positive attitudes toward the political system when New Zealand moved from a majority system to proportional representation. Likewise, Birch (2008) observed a positive correlation between proportional representation and perception of electoral fairness across 28 elections in various countries. Accordingly, voters who perceive the electoral system as unfair may, in turn, view elected officials as corrupt; hence, the political system may theoretically affect perceived corruption, without impacting the actual level of corruption.

In light of this limitation, we construct an objective measure of corruption in this section. 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 resulted in court rulings. We describe the sources of our data in Appendix E.1. We were able to identify 65 cases of corruption. In Appendix E.2, we present a series of summary statistics regarding these corruption cases. Specifically, Figure E.1 shows the distribution of corruption cases around the cutoff. Focusing on this narrow window around the cutoff, 0.0281% of the municipalities below the cutoff experienced a corruption case, compared to 0.166% of the municipalities above it. This provides preliminary (and very rough) evidence of the effect of the electoral system on actual corruption. Table E.1 describes the types of misconduct present in our dataset. The vast majority of corruption cases (80%) are related to unlawful taking of interest, embezzlement of public funds or property, and favoritism. Finally, in Appendix E.3, we show that our measure of actual corruption positively correlates

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

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

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

(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 a dummy equal to one if municipality $m$'s electoral system is a standard CLPR system (as opposed to majoritarian plurinominal open-list system), 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).

The results are summarized in Figure 4, which plots the probability that a municipality's government is involved in a corruption case as a function of population, separately on each side of the cutoff.[4] The graph indicates a clear jump in that probability. Accordingly, municipal governments elected under a CLPR system are more likely to be involved in corruption cases than those elected under a majoritarian plurinominal open-list system. 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 perception of corruption but also the propensity of local officials to be involved in corruption.

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[4]Table E.3 reports the average marginal effects from our Logit RD estimates.

Figure 4: Predicted Probability of a Corruption Case as a Function of the Population Size
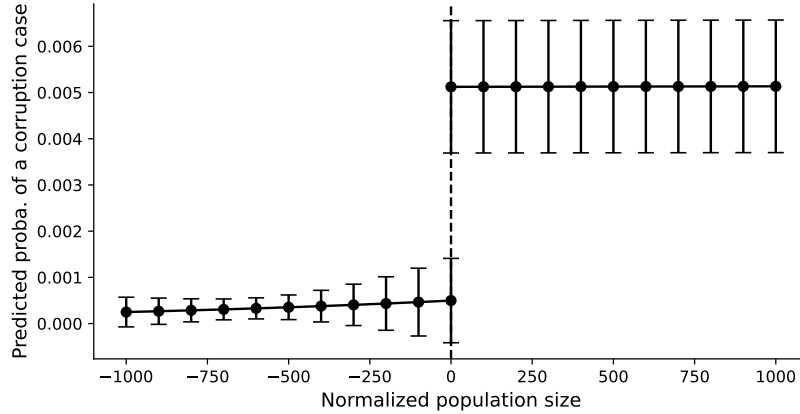


*Notes*: Figure 4 shows the predicted probability from a logit RD regression, estimated using the penalized maximum likelihood method proposed by Firth (1993) (Equation [2]). The unit of observation is a municipality. The dependent variable is an indicator equal to one if the municipal government has been involved in a corruption case. The treatment consists of switching from a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. The horizontal solid lines indicate 95% confidence intervals.

# 7    Conclusion

Using data on French local elections and implementing a regression discontinuity design to establish causality, we show that voting for single individuals rather than a list of individuals reduces both perceived and actual corruption. This suggests that individual accountability is effective in disciplining officials and incentivizing them to behave honestly.

However, jumping to policy implications would likely be premature. Our focus on a single country and on a local-to-cutoff effect allowed us to establish causality, but it 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. Finally, because voting rules are many, complex, and often subtle, one should try to gather evidence of the effect of a wider range of rules in different contexts.

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# Online Appendix to

# "The Causal Impact of the Electoral System on Corruption"

Abel François, Nicolas Lagios, Pierre-Guillaume Méon

# A  Variables Description

Table A.1: Variable Definitiond and Sources

| 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: $< 1250$ €, $[1250 - 1999]$ €, $[2000 - 2499]$ €, $[2500 - 3499]$ €, $[3500 - 5999]$ €, $\geq 6000$ € | 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-positioning | 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 10-point scale ranging from 0 "no corruption at all" to 10 "a lot of corruption" | National survey |
| Actual corruption | Actual measure of corruption cases based on newspaper reports of corruption cases involving the municipal government | 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.

A2

# B   Additional Description of French Municipalities

At the time of the survey, there were 34,868 municipalities in France. Table B.1 shows that 24,989 of them (71%) had fewer than 1,000 inhabitants. In particular, 19% of municipalities had between 500 and 1,000 inhabitants, and 22% had between 1,000 and 5,000 inhabitants. This distribution provides enough observations and variation in population size around the 1,000-inhabitant threshold to support our empirical approach.

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

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

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

Table B.2 shows that most lists had no partisan denomination in 2020. This allows us to rule out the influence of ideological positioning.

Table B.2: Distribution of Lists in the 2020 Election According to Political Party Affiliation Status

| 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 shows that, in 2020, 45% of the municipalities with a population between 1,000 and 2,000 inhabitants had only one list, and the same proportion of municipalities held an election with two competing lists. 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 5,000 inhabitants

(see Table B.2) and two-thirds of those municipalities held an election with three or more competing lists. However, those municipalities are too far from the threshold to affect our estimates.

Table B.3: Distribution of French Municipalities According to the Number of Lists in 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<br>majority rule<br>no gender parity rule | vote for a list<br>proportional rule<br>strict parity rule |
| Mayor & deputy mayor compensation | max. 1622 €* | max. 2077 €* |
| Councilor 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 monthly maximum cap imposed by the law, but the council can freely decide the compensation within that 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 used in municipal elections.

## C.2   Descriptive Statistics

Figure C.1: Perceived Corruption of Municipal Governments
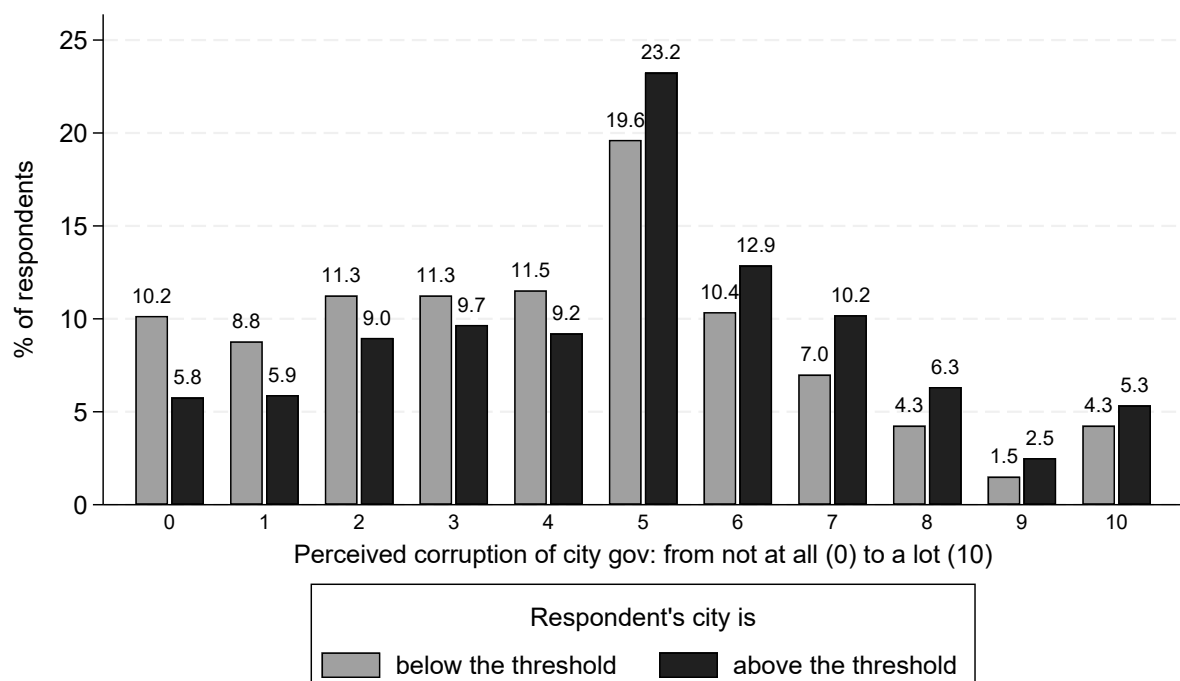


*Notes*: Perceived corruption is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-point scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The threshold is 1,000 inhabitants and corresponds to the change in electoral system: Municipalities below the threshold use a two-round majoritarian plurinominal open-list system, whereas those above the threshold use a two-round closed-list proportional 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 | 1,352 | 3,625 |
| 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 below the threshold use a two-round majoritarian plurinominal open-list system, whereas those above the threshold use a two-round closed-list proportional 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)<br>Outcome Var. | (2)<br>Control Var. |
|---|---|---|
| Discontinuity estimate | -0.0139 | 0.387*** |
| | (0.0476) | (0.143) |
| | | |
| Observations | 8,432 | 8,449 |

*Notes*: 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 a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-positioning. 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. (2019). ***Significant at 1% level.

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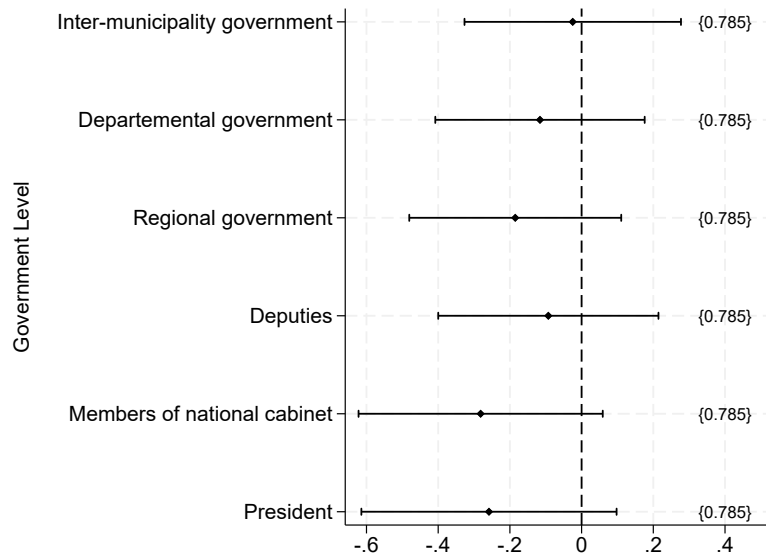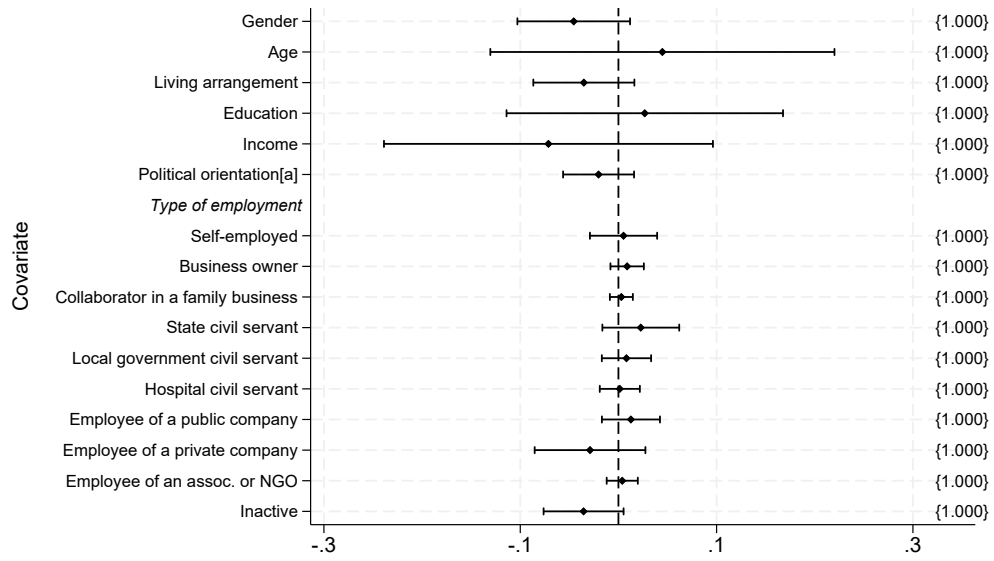


*Notes*: RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation (1). Each specification uses a different dependent variable which corresponds to respondents' perceived corruption for the level of government indicated on the y-axis. The treatment consists of switching from a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-positioning. 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. (2019). False discovery rate (FDR) adjusted p-values are reported in curly brackets (Anderson, 2008).

Figure D.2: Discontinuity Effect at Placebo Cutoffs
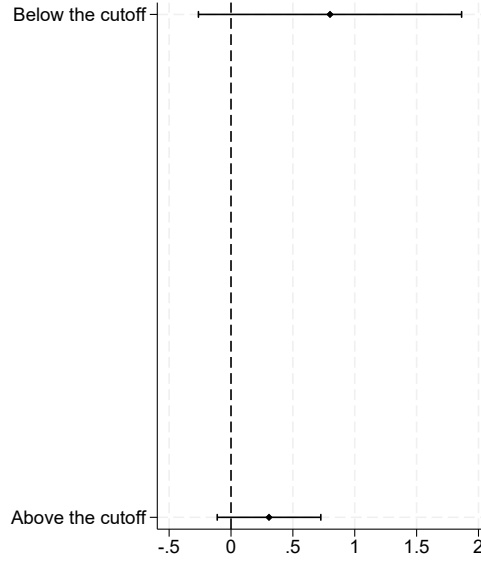


*Notes*: Local linear RD estimates. The unit of analysis is a survey respondent. The model specification follows Equation (1). The dependent variable is respondents' perception of the corruption of their municipal government, which is measured through the question: "Do you think that the municipal government 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 1,000 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. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-positioning. 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. (2019).

Figure D.3: Covariate Smoothness at the Cutoff

*Notes*: 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 a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. [a] political self-positioning is scaled by 100 (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. (2019).

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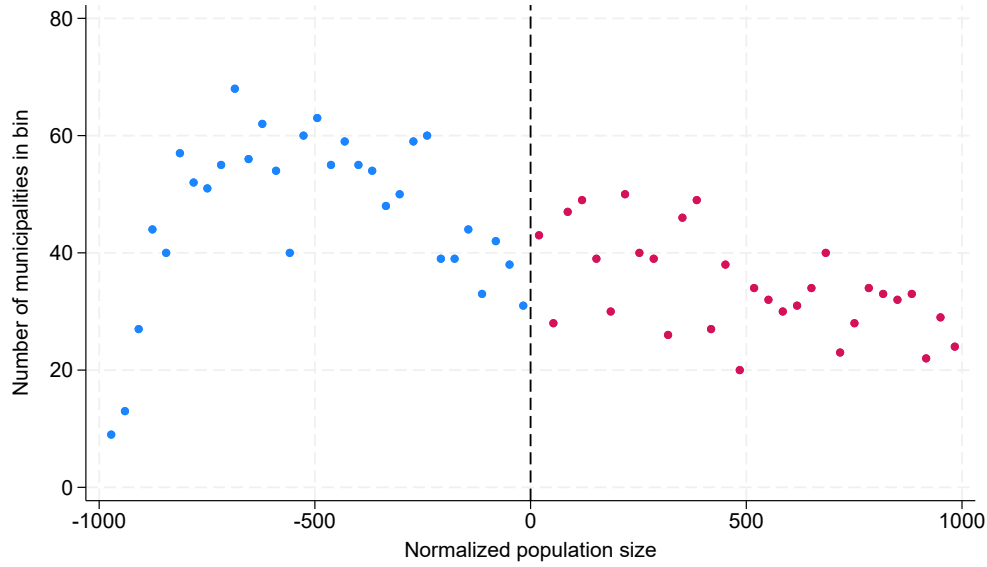


*Notes*: The y-axis represents the frequency and the x-axis the population size. Population size is normalized by subtracting the cutoff (1,000 inhabitants) for each municipality. Municipalities below the threshold use a two-round majoritarian plurinominal open-list system, whereas those above the threshold use a two-round closed-list proportional system.

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

|  | Outcome: Perceived corruption | |
| --- | --- | --- |
|  | (1) | (2) |
|  | Est. | SE |
| Discontinuity estimate | 0.523*** | 0.204 |
| Observations | 9,296 | |

*Notes*: RD estimates. The unit of analysis is a survey respondent. 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 a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. In each specification, we control for respondents' gender, age, living arrangement, education, income, work status, and political self-positioning. Standard errors clustered at the municipal level are reported in Column (2); the cluster-robust variance estimator is computed by using the covariate-adjustment approach proposed in Calonico et al. (2019). ***Significant at 1% level.

# E  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.[1] 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.[2] 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.[3] 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).
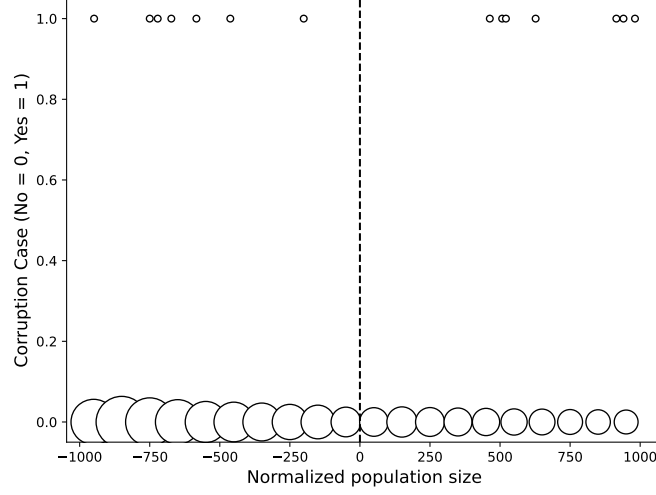
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[1]https://francecorruption.fr/.
[2]https://transparency-france.org/.
[3]https://odp2017.wordpress.com/.

## 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. The size of each bin is proportional to the number of observations within the bin. Municipalities below the threshold use a two-round majoritarian pluri-nominal open-list system, whereas those above the threshold use a two-round closed-list proportional system.

Table E.1: Categories of Corruption Cases

| Type of Misconduct | Number of Cases |
| --- | --- |
| Unlawful taking of interest | 30 |
| Embezzlement of public funds or property | 15 |
| Favoritism | 7 |
| Forgery and use of forged documents | 4 |
| Passive corruption | 1 |
| Other | 8 |

## E.3 The Relationship Between Actual and Perceived Corruption

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

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

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 Equation (1) in the main text.

The results are depicted in Table E.2 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. This suggests that perceived corruption at least partly reflects actual corruption.

Table E.2: 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-positioning. Standard errors clustered at the municipal level are reported in parentheses. ***Significant at 1% level.

## E.4 The Impact of the Electoral System on Actual Corruption

Table E.3 presents the average marginal effects from our Logit RD estimates (Equation [2] in the main text).

Table E.3: 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) | 0.00367*** | 0.00334*** | 0.00308*** |
|  | (0.000590) | (0.000559) | (0.001001) |
|  |  |  |  |
| 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 a two-round majoritarian plurinominal open-list system to a two-round closed-list proportional system. Standard errors are reported in parentheses. ***Significant at 1% level.

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