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Jurisdiction size and perceived corruption

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This paper studies the relationship between the size of a jurisdiction and how corrupt its citizens perceive officials to be. The relationship may a priori be driven by four distinct mechanisms: (i) larger communities have more officials, thereby making it more likely at least one official is corrupt; (ii) larger communities have a larger budget, thereby offering more opportunity to be corrupt; (iii) monitoring officials is costlier in larger communities; and (iv) the public is less likely to have contact with officials in larger communities, which raises citizen's suspicion. Using cross-country analysis, we first establish that corruption is perceived as larger in countries with larger populations. We then test this stylized fact using French survey data on the perception of the municipal government corruption. We again observe that perceived corruption increases with population size. This result holds through a series of robustness checks and many confounding factors. Moreover, our results hold across two distinct periods and for another administrative unit, departments. Finally, we report suggestive evidence that the stylized fact is driven by mechanisms (i) and (ii), but not by (iii) and (iv).

Keywords Perceived corruption, Jurisdiction size.

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Abstract:

This paper studies the relationship between the size of a jurisdiction and how corrupt its citizens perceive officials to be. The relationship may *a priori* be driven by four distinct mechanisms: (i) larger communities have more officials, thereby making it more likely at least one official is corrupt; (ii) larger communities have a larger budget, thereby offering more opportunity to be corrupt; (iii) monitoring officials is costlier in larger communities; and (iv) the public is less likely to have contact with officials in larger communities, which raises citizen's suspicion. Using cross-country analysis, we first establish that corruption is perceived as larger in countries with larger populations. We then test this stylized fact using French survey data on the perception of the municipal government corruption. We again observe that perceived corruption increases with population size. This result holds through a series of robustness checks and many confounding factors. Moreover, our results hold across two distinct periods and for another administrative unit, departments. Finally, we report suggestive evidence that the stylized fact is driven by mechanisms (i) and (ii), but not by (iii) and (iv).

Keywords: Perceived corruption; jurisdiction size

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1. Introduction

Every jurisdiction, be it a country, a district, or a municipality, has a designated population. Yet, population size varies widely, from a few thousands for micro-states to a billion and a half in India and China. Likewise, the populations of municipalities can vary widely even within the same country. For instance, whereas the population of New York exceeds eight million residents, Monowi, Nebraska, came to fame by reporting only one inhabitant in the 2010 US census. The diversity of jurisdiction sizes begs the question of efficiency, specifically whether larger jurisdictions are better administered or not. Classical writers held conflicting views: whereas Plato, Rousseau, and Montesquieu viewed a large population as a hindrance to good administration, Maddison viewed it as a protection of weaker citizens against others (Gerring and Veenendaal, 2020).

The recent efficiency-focused doctrine is also conflicting. While countries such as Brazil, India, and Russia have reduced the size of their municipalities, developed countries have promoted the consolidation of theirs (Avellaneda and Corrêa Gomez, 2015). The empirical literature echoes the lack of doctrinal consensus with mixed evidence on the relationship between municipal size and efficiency (Ostrom, 1972; Derksen, 1988; Boynes, 1995; Martins, 1995; Byrnes and Dollery, 2002; Blom-Hansen et al., 2014; Blom-Hansen et al., 2016; Blom-Hansen et al., 2021).

However, economic efficiency is not the only effect of the size of a jurisdiction. Importantly, the size of a jurisdiction may affect the perceptions and attitudes of its citizens. Using a natural experiment in Denmark, Lassen and Serritzlew (2011) document that municipal mergers reduced citizens' beliefs in their own competence and ability to understand and take part in politics. In addition, feelings of political alienation or pessimism about the state of democracy have been found to correlate with higher perceived corruption (Melgar et al., 2010; de Lancer Julnes et al., 2014). Jurisdiction size might, therefore, affect the perception of corruption and ultimately lead to unpalatable consequences. For instance, Villoria et al. (2012) observe that the perception of corruption correlates with lower levels of satisfaction with democracy and greater acceptance of rule-breaking behavior. Pellegata and Memoli (2016) report that it reduces confidence in the parliament and government.

In this paper, we establish a new stylized fact: the perceived corruption level of officials in charge of a jurisdiction increases with the size of that jurisdiction, as defined by its population size. We document it first at the cross-country level and then at the level of French municipalities. Surprisingly, the literature has paid little attention to the effect of jurisdiction size on

perceived corruption. The available evidence is essentially a by-product of studies of other determinants of perceived corruption where constituency size is a control variable. Current evidence is moreover indecisive on the sign of the relationship. Fisman and Gatti (2002) observe that larger countries are perceived as less corrupt, while Xin and Rudel (2004) show the opposite and Gerring and Veenendaal (2020) find that the association is statistically insignificant. By using both cross-country and French data, we can show that the relationship is robust and applies to various levels of government.

Four mechanisms may *a priori* result in a positive correlation between the size of a jurisdiction and the perception of the corruption of its officials. The first is a scale effect. As there are more public officials in larger jurisdictions, the probability that at least one of them is corrupt is, all else equal, greater the larger the size of the jurisdiction. Accordingly, if residents infer the prevalence of corruption from the number of corrupt officials, they will believe it to be higher in a larger jurisdiction (Gerring and Veenendaal, 2020). Moreover, actual corruption, as measured by the outcomes of audits, has been found to increase with the size of the legislature in Brazilian municipalities (Britto and Fiorin, 2020).

The second mechanism is that the opportunity to be corrupt — and the potential profitability of corruption — increase in large jurisdictions where budgets are larger. Larger countries typically have larger public budgets in absolute terms and as a share of GDP (Ram, 2009; Krieger and Meierrieks, 2020), although evidence is mixed (Alesina and Wacziarg, 1998). The size of perks is, therefore, larger in larger jurisdictions. At the local level, the effect may be complemented by transfers from the central government, resulting in windfalls of public resources that have been found to favor corruption by Brollo et al. (2013). Finally, the size of the projects that the authorities can approve and oversee is larger, again resulting in the possibility of receiving larger bribes. If citizens realize that officials face such incentives, they will perceive them as more corrupt.

The third mechanism rests on information. Residents of larger constituencies should on average be less well informed about the deeds of their officials because they are geographically and socially more distant. Moreover, the opacity of the responsibility of corrupt practices also increases with the size of a jurisdiction because officials in larger municipalities perform more tasks (Tanzi, 1996). As a result, monitoring officials is more difficult in larger jurisdictions, as Aidt (2003) or Fan et al. (2009) point out. Officials are therefore less accountable in larger jurisdictions (Shrestha 2023) and the incentive for them to be honest may accordingly be smaller. In addition, larger jurisdictions provide a larger market and make selling information more profitable for media or journalists in a broad sense, not to mention that covering larger

jurisdictions might be more prestigious. The press and watchdog groups, therefore, have a stronger incentive to scrutinize the officials of larger jurisdictions (Prud'homme, 1995). Moreover, within a country, larger jurisdictions — for instance, municipalities — may draw the attention of the national press, while smaller ones may only be scrutinized by the local press, which is weaker than the national one (Fan et al., 2009). Residents of larger jurisdictions are more likely to be informed of wrongdoings by their officials because the latter are more closely monitored. Those residents may then perceive their officials as more corrupt (Rizzica and Tonello, 2015).

The fourth mechanism is driven by the fact that the larger a jurisdiction, the lower the probability of contact with local officials, let alone personal contact. The lower proximity between respondents and their officials in larger jurisdictions results in less frequent contact. Accordingly, residents of larger jurisdiction may be less lenient in the assessment of the corruption of officials who are more remote (Tanzi, 1996).

Those arguments can, however, be overturned. For instance, career concerns may mitigate the opportunities for corrupt deals in larger jurisdictions. Career opportunities in smaller jurisdictions, if any, are likely less attractive, ceteris paribus. Accordingly, officials in larger jurisdiction have a stronger incentive to avoid corruption to either keep their position or be promoted to higher positions in the administrative or political structure (Myerson, 2006). One could, therefore, expect corruption to be less common in larger jurisdictions. The prestige of holding an office in a large jurisdiction could also serve as a deterrent (Seabright, 1996; Tabellini, 2000). In addition, smaller jurisdictions may face specific hurdles. For instance, because they can offer lower wages due to the size of their budget, they may find it harder to hire a manager to supervise day-to-day operations, which has been found to correlate with less corruption (Nelson and Afonso, 2019; Gerring and Veenendaal, 2020). The level of corruption citizens see will again depend on how they perceive those incentives. As a result, jurisdiction size and perceived corruption may correlate in the two directions, and the question is mainly an empirical one.

To study the relationship between jurisdiction size and perceived corruption and investigate the mechanisms explaining that relationship, we rely on data on French municipalities. Using data from a single country reduces the unobserved heterogeneity that could confound the finding in an international comparison. Moreover, France offers an interesting case study. First, there is corruption without it being a fundamental political or economic problem — France is ranked 22nd in Transparency International's 2021 Corruption Perception Index (Transparency International, 2021) — and no event close to the time of the survey (end of July 2021) was

likely to have affected the answers of respondents. Second, France being a centralized country, all its municipalities are governed by the same regulations. Nonetheless, the number of those municipalities is particularly large at 35,000 at the time of the survey. Moreover, their sizes are highly dispersed, from a few dozen inhabitants to two million for the capital city of Paris. We can leverage a large diversity within a stable and homogenous institutional context. Finally, we can assess corruption at the municipal level thanks to a large national survey (N>9,000) carried out online in July 2021 and based on a representative sample of the French population aged 18 and over registered on the electoral roll.

Both at the cross-country level and within France, we find that the perception of corruption is higher in more populous jurisdictions. The within-country findings are stable and stand up to many robustness checks. In particular, we observe the same relationship across departments (a "department" is the French jurisdiction that stands in size between the smaller municipality and the larger region) and 15 years ago, thanks to a different survey. We also reach similar conclusions when using an instrumental variable approach where the jurisdiction's population is instrumented by its altitude. Further tests allow us to rule out that the correlation between perceived corruption and municipal size is driven by a general perception of corruption, an erosion of confidence in all representatives, or a general lack of trust. We also show that the effect is not impacted by the number of actual corruption cases.

Afterward, we investigate the four mechanisms that may drive the relationship described above. We find no evidence that the observed relationship is driven by information or contacts with public officials. By contrast, we report evidence that it is driven by the size of the municipal council, in line with the scale effect, and the size of the municipal public budget.

The rest of the paper is organized as follows. The next section investigates the correlation between size and perceived corruption using a cross-country comparison. Section 3 describes the French dataset that we use to establish the stylized fact within a given institutional context, and Section 4 reports baseline results and the results of various robustness checks. Section 5 rules out a series of confounding factors. In Section 6, we investigate the four potential mechanisms behind the relationship. Section 7 concludes.

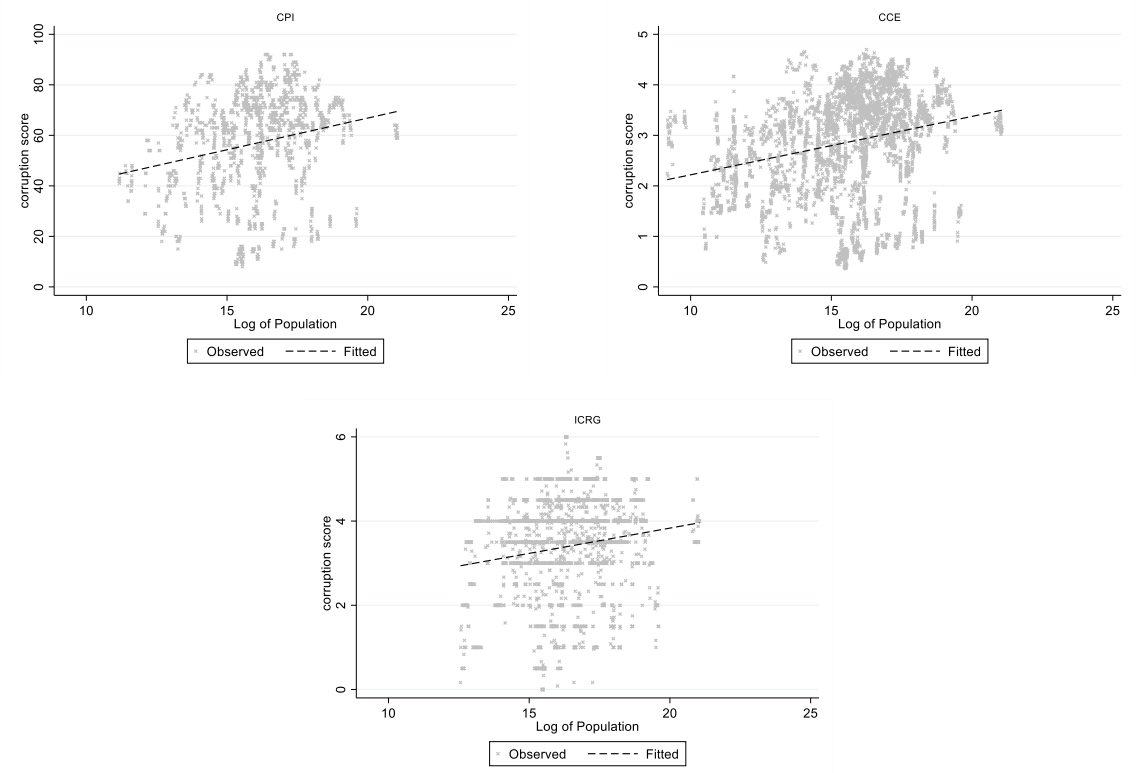
2. A cross-country comparison

In this section, we investigate the relationship between the size of the population of a country and three corruption indexes: Transparency International's Corruption Perception Index, the World Bank's Control of Corruption, and the International Country Risk Guide's index

of corruption. All indices have been rescaled to a scale that increases when a country is perceived as more corrupt.[1]

To provide a first sense of the association between size and perceived corruption, Figure 1 displays the bivariate relationship between the logarithm of the country's population and our three measures of corruption for each year available. All three indices positively correlate with population size: perceived corruption increases with population size.

Figure 1. Perceived corruption and population size: international comparison



Notes. CPI is the Transparency International general Index of Corruption. CCE is the Control of Corruption index of the World Bank. ICRG is the International Country Risk Guide's index of corruption. The CPI data cover 177 countries from 2012 to 2020. The CCE data cover 214 countries from 1996 to 2019. The ICRG data cover 140 countries from 1984 to 2017. All indices increase when corruption is lower. The dash lines indicate the linear correlation. See Table A.1 in the Appendix for more details on the variables.

To go beyond a simple bivariate correlation, we regress the three corruption indices on population size, controlling for a series of standard variables that have been found to correlate with corruption in the cross-country literature.[2] We estimate a series of pooled regressions with standard errors clustered at the level of individual countries.

[1] The variables used in this section are described in Table A.1 of Appendix A1.

[2] Specifically, we control for GDP per capita, government expenditures as a percentage of GDP, fuel exports as a percentage of merchandise exports, the V-Dem polyarchy index, ethnic fractionalization, and the share of Protestants in the population. See Appendix A1 for details.

Table 1. Indices of corruption and country population: international comparison

	Dependent variable: Indices of corruption		
	CPI [2012-2019]	WB [2010-2019]	ICRG [2010-2017]
	Coef.	Coef.	Coef.
	(se)	(se)	(se)
	Standardized	Standardized	Standardized
Population (log)	3.86***	0.20***	0.18***
	(1.089)	(0.054)	(0.066)
	0.25	0.25	0.19
Control variables	✓	✓	✓
Observations	364	461	372
Year	8	10	8
Country (max)	48	49	48
Adjusted R^2	0.86	0.86	0.83

Notes. CPI is the Transparency International general Index of Corruption. CCE is the Control of Corruption index of the World Bank. ICRG is the International Country Risk Guide's index of corruption. The CPI data cover 177 countries from 2012 to 2020. The CCE data cover 214 countries from 1996 to 2019. The ICRG data cover 140 countries from 1984 to 2017. All indices increase with corruption. The observations by country are stacked. Method of estimation is pooled OLS. Control variables are GDP per capita, government expenditure (% of GDP), fuel of exports (% of merchandise exports), electoral democracy index, ethnic fractionalization, proportion of protestants, regional fixed effects, and main cultural legacy dummies (British, French, German, Socialist, and Scandinavian). Constant included but not reported. For details, see Table A.2 in Appendix A1 for details. Standard errors are clustered at the country level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

Table 1 reports the outcome of those regressions. The logarithm of population size bears a positive coefficient that is statistically significant at the one-percent level in the three regressions, implying a positive association between population size and perceived corruption.[3] Accordingly, perceived corruption is larger in larger countries. An increase by one standard-deviation of the country population (log transformed) is associated with an increase in corruption indices of 0.25 or 0.19 depending on the corruption variable scrutinized.

While those results provide a first sense of the relationship between population size and perceived corruption, they must be considered with caution, as cross-country estimations may be affected by unobserved heterogeneity. Moreover, smaller countries may draw less attention from corruption experts and be missing from the sample (Knack and Azfar, 2003; Gerring and Veeendaal, 2020). To address those concerns, our main analysis focuses on the relationship within a single country, which reduces unobserved heterogeneity and is not subject to a selection bias.

[3] We observe very similar results if we estimate the relationship using data on the last available year by country (see Table A.3 in the Appendix).

3. A within-country analysis of the French case: data and method

Taking advantage of a French survey, we now study the correlation between population size and the perceived corruption of municipal governments, comprising both elected people and officials. This section describes the survey, the size of the municipalities in the sample, and our empirical strategy.

3.1. The survey

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 in the electoral roll and was constructed using the quota sampling method applied to gender, age, profession of the interviewee, region, and urban area. The sample was 10,105 respondents.[4]

At the time of the survey, there were about 35,000 French municipalities. In our sample, respondents live in 5,005 of them. Those municipalities are located in each of the 14 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 22.02 interviewed respondents. The most represented municipality has 413 respondents and the least represented only one.[5]

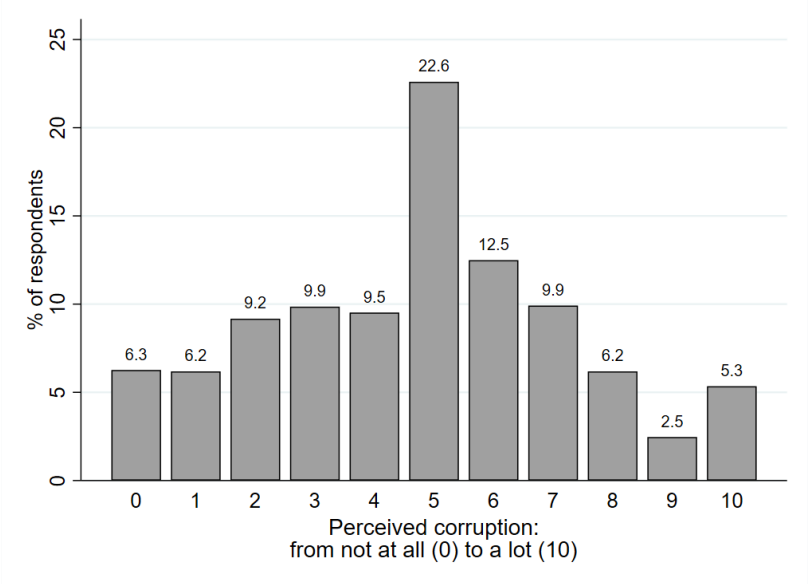
Municipalities are the lowest and smallest administrative division in France.[6] Each is run by the municipal council (*conseil municipal*), which appoints the executive branch, the mayor (*maire*), and his deputies (*adjoints aux maire*). The municipal council is elected by registered voters of the municipality every 6 years and in a two-round list voting system that depends on the municipality's number of inhabitants. The winning list with the majority of votes — either at the first or at the second round — obtains the majority of seats in the municipal council.

Because the French political system is highly centralized, the municipal council is in charge of very local policies. Its powers are the same regardless of the size of the municipality. It mainly manages urban, land, and real estate policies and urban public transports.

[4] See Appendix A2 for more details on the survey.
[5] Figure A.1 in Appendix A2 draws the distribution of the survey respondents according to the population of their municipality. We observe an apparently normal distribution without any statistical concerns.
[6] In addition to municipal government, there are three other local governments: inter-municipal that are a cooperation of municipalities, *Conseil Généraux* that manage public policy at the level of departements, and *Conseil Régionaux* that run regions.

In addition to usual sociodemographic and political information, the survey specifically deals with corruption. In particular, respondents were asked to state the degree of corruption they perceive of their local governments. They could reply on a 10-ladder scale, from "no corruption at all" (0) to "a lot of corruption" (10).

Figure 2. Perception of municipal government's corruption



Notes. Perceived corruption is measured using the question: "Do you think that the municipal institution is involved in corruption?" A 10-ladder scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". N = 10,105.

Figure 2 reports the distribution of the answers to the question on the corruption of municipal governments. The middle modality is unsurprisingly the mode of the distribution, being chosen by 22.6 percent of respondents. 41.1 percent of respondents picked a value below the middle, while 36.4 percent chose a value above it. Also, if we focus on extreme answers, 6.3 percent of respondents stated that there is no corruption at all, and 5.3 percent that there is a lot of corruption.

Thanks to the code of the respondents' municipality of residence, we can match their answers with information about their municipality, including its population. Because we exclude Paris, Lyon, and Marseille from our main analyses, we end up with a sample of 9,536 respondents from 5,001 municipalities[7]. Table A.6 in the Appendix shows that the distribution

[7] Paris, Lyon, and Marseille are the most populous municipalities in France. However, because of institutional specificities, we exclude respondents living in those municipalities from our baseline estimations. The three municipalities are ruled — and their governments are elected —according to special rules. Specifically, they are

of survey respondents according to the characteristics of their municipality is balanced and follows the distribution of the French population. The municipalities included in the sample are heterogeneous in terms of size, with a population ranging from 13 to nearly 500,000 inhabitants. The average municipality in the sample has a population of 35,500, and the standard deviation of population size is 1.9 times higher than the mean. Our empirical model leverages this large variability.

3.2. Empirical model

Our baseline specification aims to measure how respondents' perception of the level of corruption of their municipal government correlates with the size of their municipality. To measure this, our model has three levels: respondent, municipality, and region. The specification reads:

$$Corruption_{i,j,r} = a_0 + a_1 \log(Pop_j) + \mathbf{A}_R{}' \mathbf{R}_i + \gamma_r + u_{i,j,r}, \quad (1)$$

where $Corruption_{i,j,r}$ is the level of corruption that respondent i living in municipality j and region r perceives of her municipal government. It can take 11 values corresponding to the answers to the corruption question on a 0 ("no corruption at all") to 10 ("a lot of corruption") scale. Pop_j is the population of municipality j. $\mathbf{R}_i$ is a vector of respondent individual controls, and $\mathbf{A}_R$ is the vector of corresponding coefficients. Our specification includes several standard sociodemographic characteristics: gender, marital status, age, education level, income, and work status. We also introduce political characteristics such as the respondent's political position on the left-right axis and her interest in politics. Finally, the terms γ_r and $u_{i,j,r}$ represent the fixed effects related to the respondent's region and the error term, respectively.[8] Model 1 is estimated using OLS and with standard errors clustered at the municipal level to allow for arbitrary dependence between respondents of the same municipality.

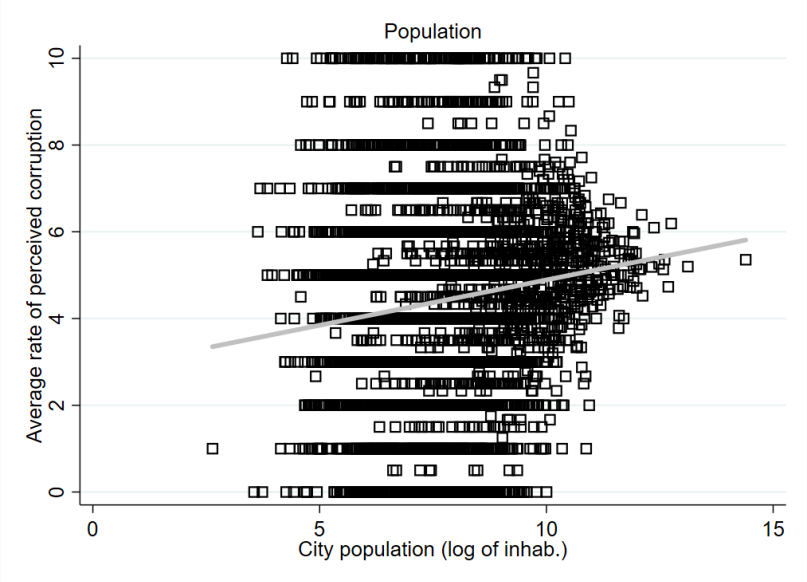
divided in sub-municipal governments — "arrondissements" — with their own mayors, namely "maires d'arrondissement" in Paris and Lyon and "maires de secteur" in Marseille. As a result, we do not know whether respondents were thinking about the sub-mayor or the mayor when they evaluated municipal corruption. In section 4.3, we show that including the three municipalities in the sample does not affect our results.

[8] We use the 21 French metropolitan regions that existed before the 2015 merger, except Corsica which is not present in the sample.

4. Municipal size and the perceived corruption of French municipal government

Figure 3 provides a scatterplot of the relationship between population size and perceived corruption averaged at the municipal level. The relationship between the two variables is increasing, meaning that municipal governments of larger municipalities are perceived as more corrupt.

Figure 3. Municipal population and average perceived corruption of the municipal government



Notes. Perceived corruption is measured through the question: "Do you think that the municipal institution is involved in corruption?" on a 10-point scale ranging from 0 "no corruption at all" to 10 "a lot of corruption". We compute the average answer by municipality observed in the survey. Population is the 2020 official number of inhabitants (source: *Direction Générale des Collectivités Locales*, *DGCL*). We exclude Paris, Lyon, and Marseille for institutional reasons (see Footnote 7). The gray line plots the linear correlation.

Table 2 reports the baseline outcome of estimating Model 1.[9] The regression shows an unambiguous positive correlation between population size and perceived corruption. We observe this relationship in a bivariate estimation (Column 1 of Table 2), and it remains very stable even when introducing control variables capturing respondents' characteristics or regional fixed effects (Columns 2 and 3). Thereafter, we focus on the full specification, which is in line with Model 1.

[9] For conciseness's sake, we do not report the coefficients of control variables. They appear in Table A.5 of the Appendix and show that female respondents perceive more corruption than males, in line with Melgar et al. (2010). They also show a non-linear relationship between age and perceived corruption. Respondents aged 25-34 perceive more corruption than the youngest respondents, aged 18-24, who are the baseline category. Conversely, respondents beyond 60 perceive less corruption than the youngest. Respondents with an income between 2,500 and 5,999 euros per month perceive less corruption than respondents earning less than 1,250 euros. Finally, respondents with four years of higher education or more are those that perceive the most corruption.

The coefficient of the logarithm of population size is positive and significant at the one-percent level. Since the population size is log-transformed, the estimated coefficients are semi-elasticities: the coefficient of population, therefore, implies that a 1% increase in population size is associated with an increase of 0.18 points of perceived corruption. As perceived corruption is measured on a scale from 0 to 10 and the ratio of the standard deviation of population size to its mean is 5.29, the magnitude of the effect is substantial.

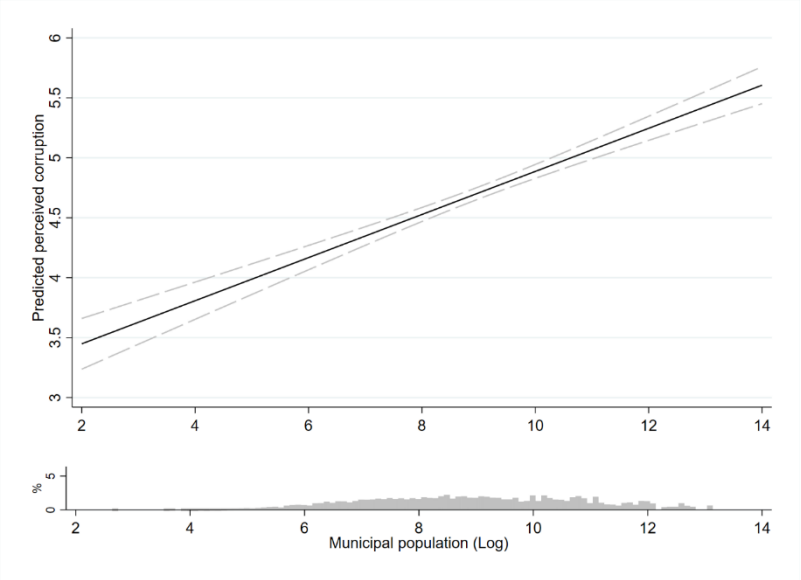
Table 2. Population size and perceived corruption in French municipalities

	(1)	(2)	(3)
Population (log)	0.22***	0.21***	0.18***
	(0.016)	(0.016)	(0.015)
Respondent's charact.		✓	✓
Regional FE			✓
Observations	9536	9536	9536
Adjusted R^2	0.026	0.068	0.080

Notes. Perceived corruption is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-ladder scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". The detailed outcomes for the most complete specification (Column 3) are given in Table A.5. Constant included but not reported. The included respondent's characteristic variables are detailed in the Appendix. Regional fixed effects correspond to the 21 former French metropolitan regions. Standard errors clustered at the municipal level are reported in parentheses. ***Significant at 1% level; **significant at 5% level; * significant at 10% level.

Figure 4 gives a more precise illustration of the impact of population size on the perceived corruption of municipal governments. The figure plots predicted perceived corruption against population size, from the minimum to the maximum of the studied sample. Over the range of the population in our sample, predicted perceived corruption climbs two degrees out of eleven. The correlation between municipal size and corruption is, therefore, quantitatively significant.

Figure 4. Predicted perceived corruption of municipal government according to respondent municipal size



Notes. Perceived corruption is measured through the question: "Do you think that the municipal institution is involved in corruption?" on a 10-point scale ranging from 0 "no corruption at all" to 10 "a lot of corruption". Predicted perceived corruption is computed using the estimation reported in Table 2, Column 3, with all other explanatory variables taking their average value. The histogram at the bottom draws the distribution of respondents according to the (log) population of their municipality.

4.3. Robustness checks and extensions

To make sure that the baseline results are not driven by our assumption regarding the functional form of the relationship between size and perceived corruption, we estimated two alternative functional forms. We first use a linear and a quadratic specification (Table 3, Columns 1 and 2). All coefficients associated with the population variable are significantly different from 0 at the 1% threshold. To further test the possibility of a non-linear relation, we split the sample of respondents into three terciles defined over municipal size and estimate the baseline model separately for each. The outcomes are displayed in Columns 3 to 5 of Table 3. In all cases, perceived corruption increases with the size of the municipality. Moreover, in all regressions, the adjusted R^2 is smaller than in the baseline regression, suggesting that the baseline specification is the preferred model.

Table 3. Additional estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Linear	Quadratic	1st tercile	2nd tercile	3rd tercile	Trimming	Winsorizing	Including Paris, Lyon, and Marseilles	2006	Departmental gov	IV
Population	2.95e-06***	7.93e-06***	0.16***	0.14*	0.10*	0.19***	0.19***	0.15***	0.080***	0.12**	0.33***
	(5.88e-07)	(9.28e-07)	(0.059)	(0.086)	(0.055)	(0.017)	(0.015)	(0.023)	(0.011)	(0.055)	(0.046)
Population squared		-1.5e-11***									
		(2.8e-12)									
Respondent's charact.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regional FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9536	9536	3176	3176	3178	8927	9536	10,105	1869	9536	9536
Adjusted R^2	0.067	0.070	0.052	0.053	0.054	0.076	0.076	0.079	0.075	0.047	0.22

Notes. Unless specified otherwise, perceived corruption is measured through the question: "Do you think that the municipal government is involved in corruption?" A 10-ladder scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption". Except for Columns 1 and 2, the variable population is log transformed. In Column 1, the population variable is the raw measure, instead of the log transformation like in the baseline specification, and in Column 2, the quadratic relation is tested. Columns 3, 4, and 5 restrict the sample to the first, second, and third terciles of respondents, respectively according to the population of their municipality. In Column 6, we exclude the observations for which the municipal size is under 5% and over 95% of the distribution from our sample. In Column 7, we cap the population at the [5% , 95%] bounds. The sample in Column 8 includes the respondents living in Paris, Lyon, or Marseille who are excluded in the baseline model. In Column 9, perceived corruption is measured in 2006 through the question: "In your opinion, there is 1) no corruption; 2) little corruption; 3) some corruption, or 4) a lot of corruption in the municipal government?" (Source: Survey "Probité", 2006). In Column 10, we apply our baseline model to the identical question about the respondents' departmental government, another local government in which the constituency is larger than municipal one. In Column 11, the method of estimation is 2SLS; the log of municipality population is instrumented by the average altitude of the municipality. Method of estimation is OLS. Constant included but not reported. The included variables for respondent's characteristics are detailed in Appendix A3. Regional fixed effects correspond to the 21 former French metropolitan regions. Standard errors clustered at the municipal level are reported in parentheses. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

As the size of municipalities varies widely, one could be concerned that the baseline results are driven by outliers or initially excluded observations. We first addressed that concern by trimming the sample at the 5th and 95th percentiles of the size variables (Table 3, Column 6). Second, we winsorized the sample at the same percentiles (Table 3, Column 7). Third, baseline regressions exclude respondents living in Paris, Lyon, and Marseille because of institutional specificities. To make sure that their exclusion does not drive our results, we ran a regression on a sample including the respondents of these three municipalities (Table 3, Column 8). We conclude that regardless of the subsample, the log of population exhibits a significant, positive, and quantitatively similar coefficient.

To determine whether the relationship between municipal size and perceived corruption is stable over time, we used a 2006 survey described in Lascoumes (2010, 2011) and François and Méon (2021).[10] The wording of the question is the same as in the 2021 survey, but respondents could only answer on a four-point scale: no corruption, little corruption, some corruption, and a lot of corruption. Although the sample was smaller at 1,800 respondents, we apply a similar empirical model (for details, see Appendix 5). Column 9 reports the outcome of that estimation. It shows that population size also strongly correlated with perceived corruption in 2006, implying that the relationship between population size and perceived corruption is stable over time.

We have observed a positive relationship between population size and perceived corruption at the cross-country level and between French municipalities that should hold at other levels of government. To test this, we look at the level of departments, or "*départements*", the main French administrative unit. Mainland France features 96 departments, each run by a departmental council ("*conseil départemental*"). We have data for all mainland departments except those of Corsica. We can, therefore, estimate Model 1 with the sample of 94 departments by replacing the municipal population with the department population. The outcome of that estimation is reported in Column 10 of Table 3. The coefficient of population size is significant at the five-percent level and positive. In other words, the relationship is not only observable at the level of countries and French municipalities but also at the level of French departments, despite the fact that there exists less disparity in terms of population across departments than across municipalities or countries.

The results reported so far are based on correlations that should be interpreted as such. A priori, reverse causality running from the corruption perceived by an individual respondent

[10] The "Probité" survey was carried out in 2006 (Lascoumes, 2010 and 2011). For details, see Appendix A4.

to the size of the municipality where she lives is unlikely. By the same token, it is unlikely that the same variable drives both the perception of corruption and the size of the constituency. It is, therefore, tempting to consider our estimates to be causal.

To lend more credence to the interpretation of the correlation between municipal size and perceived corruption as reflecting a causal relationship, we estimate an instrumental variable model where the population size of a municipality is instrumented by its average altitude. Altitude is a compelling instrument for several reasons. First, it is a good predictor of population, as population size tends to diminish with altitude (Cohen et al. 1998). Second, the variance of the altitude of municipalities in France is large. Third, it is unlikely that perceived corruption correlates in a systematic way with altitude, especially since we include regional fixed effects to control for broad geographic and socio-demographic differences. In addition, the use of regional fixed effects allows us to restrict the analysis to variations within a region where the altitude of a municipality is more homogenous than in the whole sample. We control for the bulk of the indirect effect of altitude on corruption, which lends credence to the exclusion restriction. The outcome of the IV estimations is reported in Column 11 of Table 3. The coefficient of population size remains statistically significant at the one-percent level and even increases in magnitude.

5. Ruling out confounding factors

To interpret our results as implying a relationship between municipal size and perceived corruption, we need to rule out that we indirectly estimate another relationship because either the dependent variable or the variable of interest is a proxy for another variable. First, we establish that the relationship that we estimate is not driven by a broader propensity of respondents to perceive corruption. Second, we show that our finding does not capture a correlation between municipal size and trust. Finally, we report evidence suggesting that the correlation is indeed a matter of perception as opposed to a direct reflection of actual corruption.

5.1. A general perception of corruption?

The correlation between municipal size and the perceived corruption of municipal governments may be driven by a general feeling of corruption at all levels of government. In that case, our results would tell us little about the relationship between jurisdiction size and perceived corruption in that constituency. To address that concern, we scale down the baseline dependent variable by the assessment of the corruption at other levels of government. If our

model captured a relationship between municipal size and a general perception of corruption that is not specific to municipal governments, then the correlation should vanish.

We leverage questions in the survey dealing with the perception of corruption at other levels of government, namely departmental and regional councils, deputies (members of the lower chamber of the Parliament), ministers and prime ministers (members of the national cabinet), and the president of the republic.

Using the answers to these questions, we first simply divide the perceived corruption of municipal governments by the average level of perceived corruption at other government levels. As an alternative, we subtract the average level of perceived corruption at other government levels from the level of corruption at the municipal level that respondents perceive. We use the two variables in succession instead of the baseline measure of perceived corruption. Those regressions are reported in Table A.7 in the Appendix. Regardless of the way in which the perceived corruption of municipal governments is scaled down by the level of corruption at other government levels, the coefficient of population size exhibits a positive coefficient that is statistically significant at the one-percent level.

A second solution is to estimate the relationship between municipal size and respondents' perception of corruption at other levels of government. Specifically, we replace the dependent variable with answers to similarly framed questions that ask respondents to gauge the corruption of intermunicipal governments and departmental governments. We then apply our empirical model to these two different levels.

The outcome of those regressions is reported in Table A.8 of the Appendix. The striking finding of those regressions is that respondents living in larger municipalities do not perceive departmental governments to be less or more corrupt. The coefficient is statistically insignificant at standard levels. Those findings show that respondents clearly differentiate between municipal governments and other levels of governments when gauging the level corruption, which lends credence to the interpretation of our baseline findings as indicating a relationship between the size of the population of a municipality and how its residents perceive their municipal government.

Finding that the coefficient of population size in the regression that uses the perceived corruption of inter-municipality governments as dependent variable is positive and statistically significant at the 10-percent level is also in line with our baseline finding. This is unsurprising as the members of inter-municipality governments are either the members of municipal governments, in municipalities smaller than 1,000 inhabitants, or elected at the same time and on

the same lists as members of the local government, in municipalities larger than 1,000 inhabitants. Respondents correctly perceive that the two groups of officials overlap.

Overall, the results obtained for other levels of government suggest that the effect of municipal size specifically relates to the perception by respondents of the corruption of their municipal government and not to a broader perception of corruption that spills over to other levels of government.

5.2. Trust in municipal government?

François and Méon (2021) report a negative correlation between trust and the perception of corruption in local governments. If trust and corruption are related, the measure of corruption that we use as dependent variable may be a proxy for trust, and the baseline finding may capture a correlation between municipal size and trust.

To rule that possibility out, we leverage a question of the survey gauging respondents' trust in mayors: "Could you tell me to what extent you trust the mayor of your municipality?" Respondents could reply by choosing one of the following four options: "not at all", "a little", "some", and "totally". Admittedly, the trust question refers to the "mayor" instead of the "municipal government". As mayors are the heads of municipal governments, the difference is insubstantial. We include three dummy variables coding the answer to the trust question in our baseline model. If the relationship between municipal size and perceived corruption is driven by respondents' trust, it should vanish when the trust variable is controlled for.

The results reported in Table A.9 lead to two conclusions. The first is that trust in mayors unsurprisingly correlates with the perceived corruption of municipal governments. As the reference category corresponds to the maximum level of trust and the three dummies exhibit a negative sign significant at the one-percent level, higher trust in mayors correlates with lower perceived corruption.

The second and main finding is that, despite the first finding, the relationship between municipal size and perceived corruption is not altered by controlling for the trust variables. The coefficient of population size remains positive and significant at the one-percent level. Moreover, the magnitude of the coefficient changes little compared to the baseline estimations reported in Table 2.

5.3. Perceived vs. actual corruption

Up to now, we have focused on perceived corruption, which begs the question of the relationship between perceived and actual corruption and the extent to which actual corruption drives the baseline results.

To measure actual corruption, we leverage the dataset provided by the national French police on probity offenses recorded by the police between 2016 and 2021 at the departmental level. It includes the offenses of corruption, influence peddling, bribing, favouritism, and other crimes as defined by the French law. The dataset makes the distinction between offenses made by officials, by civil servants for the public administration, and by actors of the private sector. We do unfortunately not have data for each category, nor for every year, nor at a finer level than department. Despite those limitations and the usual concern with police statistics, this is the best available proxy of local corruption. We use the absolute number of cases and its logarithm, along with the number of cases per inhabitant and its logarithm, as explanatory variables of perceived corruption, which we include in the regression.

Table A.10 reports the results of those estimations. We observe a statistically significant correlation between actual and perceived corruption, meaning that the perception of corruption correlates with actual corruption in the respondents' environment. In addition, the coefficient of population size always remains statistically significant at the one-percent level and hardly changes. Those results suggest that the relationship between population size and perceived corruption is not affected by the effective corruption, as we measure it, and is not simply a matter of beliefs.

6. Mechanisms exploration

Now that we have established a strong, robust, and stable relationship between perceived corruption and constituency size, we need to explore the four theoretical mechanisms that may explain this stylized fact.

6.1. A scale effect of municipal government

Large constituencies have larger governments, which increases the probability that at least one official is corrupt and might deteriorate the perception of corruption of all local officials (Gerring and Veenendaal, 2020; Britto and Fiorin, 2020). In the case of French municipalities, the number of members of the municipal government in France is strictly determined by the official population at election time, ranging from 7 in municipalities with less than 100 inhabitants to 69 in municipalities with populations larger than 300,000 inhabitants, as defined by 17

population thresholds reported in Table A.11 in the Appendix. Those 17 thresholds generate as many discontinuities that can be leveraged to estimate the effect of the size of the council on perceived corruption. If the size of the municipal council has a causal effect on perceived corruption, then perceived corruption should be higher to the right (above the cut-off) than to the left (below the cut-off) of every threshold.

To test that possibility, we implement a regression discontinuity design where we use the municipal population as a running variable. As we have several cut-offs, we follow Brollo et al. (2013) and first normalize the running variable by assigning it to the nearest cut-off and subtracting the relevant cut-off from the running variable. We then pool all observations to perform a standard regression discontinuity design with the normalized running variable and a cut-off defined at zero.

Table 4. Size of the municipal council: RDD estimates

	(1) Optimal bandwidth	(2) Optimal bandwidth×2
Estimate	2.50***	1.02**
	(0.57)	(0.51)
Respondent's characteristics	✓	✓
Regional FE	✓	✓
Bandwidth	13.973	27.946
Observations	165	314

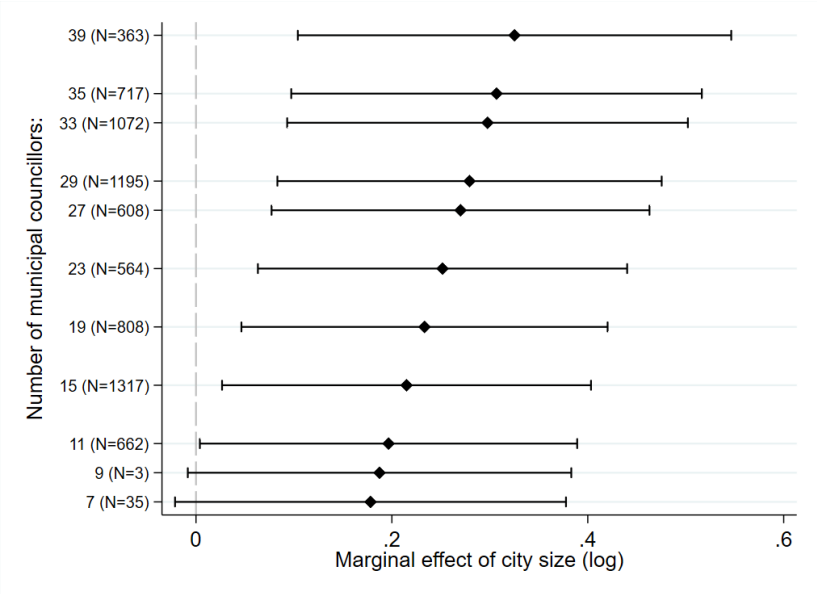
Notes. Local polynomial regression discontinuity estimates with covariate adjustment as considered in Calonico et al. (2019). The optimal bandwidth is computed following Imbens and Kalyanaraman (2012). The 17 cut-offs are pooled together by normalizing municipal size according to the distance of every municipality from the above or below cut-off. The estimates are weighted by the number of councillors. Constant included but not reported. The included respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the 21 former French metropolitan regions. Standard errors clustered at the municipal level are reported in parentheses. ***Significant at 1% level; **significant at 5% level; * significant at 10% level.

The outcome of the RDD is reported in Table 4 above. The first column uses the optimal bandwidth computed following Imbens and Kalyanaraman (2012). It shows that crossing a threshold increases perceived corruption by nearly 2.5 points on the perceived corruption scale and that the effect is statistically significant at the one-percent level. When we double the size of the bandwidth, like in Column 2, the effect shrinks but remains positive and statistically significant at the five-percent level.

Therefore, increasing the size of the municipal council causally increases perceived corruption, in line with the scale effect discussed by Gerring and Veenendaal (2020). As the size of the council mechanically increases with population size, it accounts for part of the effect of population size on corruption. To test whether it accounts for all of the effect, we estimate a

slightly modified model where we introduce the number of municipal councillors plus an interaction term between this number and the log of the municipal population. If the number of members of the council was the only driver of the relationship, then the marginal effect of municipal size should be zero for municipalities with the same number of members of the government.

Figure 5. Coefficients of municipal population conditioned by the size of the municipal government (number of councillors)



Notes. The DV is the perceived corruption of municipal government. The model is a variant of Model (1). Yet, we introduce an interactive term between the number of municipal councillors and the log transformation of the municipal population. Method of estimation is OLS. Regional fixed effects correspond to the 21 French metropolitan regions existing at survey's time. Respondent's characteristics are detailed in Table A.4. Standard errors clustered at the departmental level. For the detailed estimation, see Table A.12 in the Appendix. 95% confidence interval.

Figure 5 reports the marginal effects of the municipality population conditioned on the number of municipal councillors and its 95% confidence intervals. The point estimate of the effect is positive and statistically significant regardless of the size of the local government, except for the smallest two, for which it is statistically insignificant. Moreover, although the marginal effect of population size increases with the size of the council, confidence intervals largely overlap, implying that marginal effects are statistically indistinguishable across municipal council sizes. Those findings show that the number of municipal councillors does not entirely drive the relationship between population size and perceived corruption, even though it is one mechanism behind the phenomenon.

6.2. The volume of municipal public spending

Larger municipalities have larger budgets. [11] In our sample, the coefficient of correlation between the municipal population and the total spending of the municipal government reaches 0.99 (see Table A.13 in Appendix A6.2). Accordingly, local officials may have more opportunity to be corrupt or be perceived as such, especially as about 30% of resources come from transfers from the central government that result in a political resource windfall (Brollo et al. 2013). As a result, the size of the budget may be a channel of transmission from population size to perceived corruption. The relationship between the size of the budget and perceived corruption has been empirically established at both the national (e.g. Buehn and Schneider, 2012; Dreher et al., 2007; Tanzi, 1998) and the local levels (e.g. Goel and Nelson, 1998), even though a few studies observe a relationship in the opposite direction or no relationship at all (e.g. Treisman, 2000). We test that possibility in Table 5.

Table 5. Perceived corruption of municipal government, municipal public spending, and municipal population

	(1)	(2)	(3)	(4)
Public Spending (log)	0.16***	0.24***		
	(0.013)	(0.078)		
Population (log)		-0.100		
		(0.091)		
Spending per inhabitant (log)			1.29***	
			(0.14)	
Respondent's municipality situation toward national means:				
Pop below & Spending below				*ref*
Pop below & Spending above				0.65
				(0.57)
Pop above & Spending below				0.29***
				(0.11)
Pop above & Spending above				0.67***
				(0.065)
Respondent's characteristics	✓	✓	✓	✓
Regional FE	✓	✓	✓	✓
Observations	9455	9455	9455	9455
Adjusted R^2	0.076	0.076	0.069	0.071

Notes. The DV is the perceived corruption of the municipal government. Pop below (above) means the respondent's municipality has a population under (over) the national mean and Spending below (above) means the respondent's municipality has an overall level of municipal public spending under (over) the national mean. Respondent's characteristics are detailed in Table A5. Method of estimation is OLS. Constant included but not reported. Regional fixed effects correspond to the 21 French metropolitan regions existing at survey's time. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

[11] We implicitly measure government size by its budget, even though Bel (2022) has shown in an international comparison that the significance of the relationship between perceived corruption and government size depends on the measurement of government size.

The first column of Table 5 shows a positive and statistically significant correlation between public spending and perceived corruption. When we add population size as a regressor, its coefficient becomes statistically insignificant at accepted levels, but the size of public spending remains positive and statistically significant at the one-percent level, which suggests that the budget may channel the effect of population size (Column 2). In the third column of Table 5, we replace public spending and population size with the ratio of spending per inhabitant, which then exhibits a positive coefficient significant at the one-percent level. Given the strong correlation between a municipality's population and public municipal spending, we provide a last test where we distinguish the respondent's municipality according to two criteria: whether the municipal population is below or above the national average and whether municipal public spending is below or above the national average.[12] We take the case when the respondent lives in a municipality where both population and spending are below the national averages as the reference category, resulting in three dummy variables.

The results are reported in Column 4. First, municipalities with above-average public spendings and below-average population are statistically indistinguishable from the reference category, as the coefficient of the dummy variable is not statistically significant. In other words, more spending in cities with lower populations does not correlate with higher perceived corruption. Second, an above-average population is associated with higher perceived corruption regardless of public spending as the coefficients of the two relevant dummies are significant. Accordingly, the relationship between perceived corruption and population is not totally explained by higher public spending. Third, the magnitudes of the two coefficients coding above-average population are different: it is larger for the coefficient coding above-average public spending.[13] The effect of public spending partly drives the effect of population size on perceived corruption but does not entirely explain the relationship.

6.3. Information and municipal size

The size of a municipality affects the information that respondents leverage to form their opinion on the corruption of their local government. To test this possibility, we interact population size with respondents' education level. We interpret the variable as a measure of respondents' overall ability to collect and treat information about officials' corruption, and we expect that ability to moderate the relationship between size and perceived corruption if it is a

[12] It is important to note that we use the national means of the measures and not the sample means.
[13] The two coefficients are statistically different according to the F-test, with $F(1, 4949) = 14.00$ and $p=0.0002$.

mechanism of the relation. The results are given in Table A.14 in the Appendix. In addition to the baseline small correlation between education and perceived corruption reported in Table A.5 in the Appendix, the new estimates show that respondents' education does not moderate the effect of population size, as no interaction term is statistically significant. The relationship between municipal size and perceived corruption is, therefore, unlikely to be driven by the ability of respondents to process information.

We also consider the production and diffusion of information by newspapers. Newspapers have a higher incentive to monitor larger municipalities, which may drive the effect of population size on perceived corruption (Prud'homme, 1996). Cagé (2020) observes that more competition among newspapers in a department deteriorates the quality of information in that department. To assess the role of the press in driving our main result, we control for press consumption.[14] The information is available at the department level, which aggregates several municipalities. We complement those results by also controlling for the level of competitiveness of the local press market, which is gauged by the Herfindahl-Hirschman index computed over the market share of local newspapers in each department. By integrating the press variables into the specification, we test the presence of the press mechanism and the extent to which it contributes to the baseline correlation.

The results are reported in Table A.15 in the Appendix. We distinguish the national and local press (see Appendix 6.3 for more details). The first observation is that newspaper diffusion (Columns 1 and 2) or concentration (Column 3) have no direct impact on perceived corruption. No press variable exhibits a coefficient that is significant at usual levels. The second observation is that controlling for the press variables affects neither the significance nor the magnitude of the coefficients of population size. Accordingly, the correlation between municipal size and corruption is not driven by a difference in the diffusion of the local or national press or a difference in competition among local newspapers.

6.4. Contacts with municipal government officials

The residents of larger cities are less likely to see and meet their mayors, which results in less frequent contacts and may prompt residents to be more negative in the assessment of

[14] We measure newspapers dissemination thanks to the data provided by the "Office de justification de la diffusion" (OJD), a non-profit organization certifying the circulation of newspapers and periodicals in France. OJD was replaced by the "Alliance pour les Chiffres de la Presse et des Médias" in 2015. This non-profit organization is in charge of the production and diffusion of data on newspapers and magazines to help the press sell commercial ads to announcers. OJD reports the number of daily newspapers accessible, and the number of copies sold per inhabitant in each department. The data is described in Table A.15.

local officials (Tanzi, 1996). We test that possibility by controlling for the landmass of municipalities. The larger (spatially) a municipality, the less likely it would be for its inhabitants to see and meet their mayor. Table 6 controls for landmass.

Table 6. Perceived corruption of municipal government and municipal size: landmass and density

	Landmass	Landmass and Population	Landmass × Population
Landmass (log)	0.16***	-0.032	
	(0.034)	(0.037)	
Population (log)		0.19***	
		(0.017)	
Respondent's municipality situation with respect to national mean:			
Pop. below & Landmass below			Ref.
Pop. below & Landmass above			-0.11
			(0.11)
Pop. above & Landmass below			0.49***
			(0.087)
Pop. above & Landmass above			0.59***
			(0.083)
Respondent's characteristics	✓	✓	✓
Regional FE	✓	✓	✓
Observations	9536	9536	9536
Adjusted R^2	0.063	0.076	0.070

Notes. The DV is the perceived corruption of the municipal government. Pop below (above) means that the respondent municipality has a population under (over) the national mean. Landmass below (above) means that it has a landmass under (over) the national mean. Method of estimation is OLS. Constant included but not reported. The included respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the 21 former French metropolitan regions. Standard errors clustered at the municipal level in parentheses. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

In the first column of Table 6, landmass is introduced as a measure of size without population size. It bears a coefficient significant at the one-percent level, suggesting that part of the effect of size may be driven by landmass. In line with our contention, the coefficient is positive. However, when population size is controlled for in addition to landmass, the latter turns statistically insignificant while the population bears a positive and significant coefficient with a magnitude similar to the baseline. Accordingly, landmass likely is a proxy for population size but has no effect of its own.

In the last column of Table 6, we interact population size and landmass by defining four groups of municipalities as a function of their position above or below the mean of population

size and landmass.[15] We use the group of municipalities with both population and landmass below the mean and as the reference group and create dummies for the other three groups. We find that the coefficients of the dummy variables coding a population size below and a landmass above the mean are not significantly different from the coefficient of the dummy coding a population and landmass both below the mean. In small municipalities, a larger landmass is not associated with higher perceived corruption.

By contrast, the coefficients of the two dummy variables coding municipalities with above-mean populations are statistically significant, and a t-test rejects the hypothesis that the two coefficients are different.[16] Therefore, inhabitants of municipalities with larger populations perceive their local governments to be more corrupt regardless of municipal landmass. Moreover, landmass does not condition the effect of population size. Overall, the baseline finding is not driven by landmass but by population size.

In addition, we directly ask respondents if they had contacts with the municipal government. The precise wording of the question is "In your municipality, did you have the opportunity to contact municipal councillors, members of the municipal government, or the mayor?". Respondents could choose a reply ranging from *very often* to *never*. We pool the two first answers (*very often* and *often*) and the two others (*time to time* and *never*) to define a dummy variable that distinguishes respondents who have rare contact from those who have frequent contact with the municipal government. Controlling for that dummy and its interaction with population allows us to condition the effect of population size on the frequency of contact with the municipal government. Figure 6 shows that the marginal effect of population size is positive and statistically significant for both categories. However, it is statistically indistinguishable.

Another less direct way to proxy for the proximity of respondents with elected officials is to consider their characteristics. First, respondents may differ in their commitment into local benevolent activities. These kinds of activities are a very good opportunity to meet members of the municipal government. Secondly, local civil servants are more likely to have contact with their local officials and may also have a specific opinion of governments in general because the latter are their employers. We, therefore, distinguish local civil servants from other respondents.[17] We also introduce successively these three variables in our baseline specification and interact them with the municipality population (log transformed).

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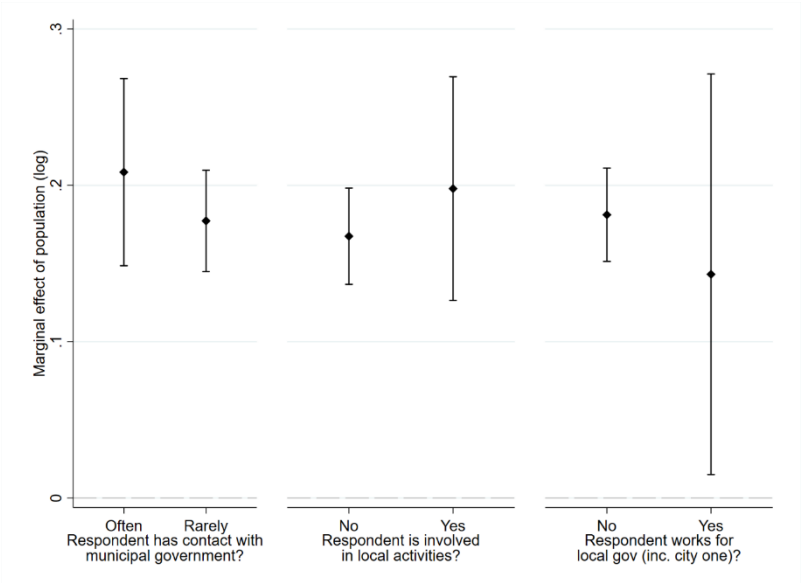
[15] Once again, we define the mean over the overall French municipality and not over our sample of municipality.
[16] The F statistic is equal to 1.89, and the p-value to 0.17.
[17] The local civil servant category gathers respondents who work for municipal, departmental, or regional government.

Figure 6 reports the conditional marginal effect of population size specific to each category. The marginal effects of size are positive and statistically different from zero for all categories. However, we do not observe significant differences across the categories: the correlation between municipal population and the perceived corruption is similar for respondents who have or do not have contact with the municipal government, who are engaged in local activities, or who work for local administrations.

Figure 6. Estimated coefficients of municipal size according to respondent contact with municipal government



Notes. The figure displays the coefficient of population (log) conditioned by the respondent contact with the municipal government. We propose three measures of contact. The first is a self-evaluation of the contact frequency given by the respondent. The second is the respondent involvement in local activities. The last one indicates if the respondent works for local government, including the municipal one. For the detailed estimation, see Table A.17 of Appendix. Method of estimation is OLS. Regional fixed effects correspond to the 21 French metropolitan regions existing at survey's time. Respondent's characteristics are detailed in Table A.4. Standard errors clustered at the municipal level.

The effect of municipal size does not seem to be conditional on contact with municipal government. This evidence is inconsistent with a mechanism where municipal size would capture the probability to directly interact or be in contact with local officials.

7. Conclusion

Perceived corruption is larger in larger jurisdictions. We observe that stylized fact at the cross-country level and at the municipal and department level within a single country: France. We show that the level of perceived corruption is not driven by a general perception of

corruption independent from the government level and that it does not capture the effect of general trust. We also report evidence that perceived corruption is independent from actual corruption.

By contrast, using a regression discontinuity design, we can show that this stylized fact is partly driven by the size of the municipal council. We also report suggestive evidence that the stylized fact is partly driven by the size of the municipal budget. By contrast, we find no evidence suggesting that information — including its consumption, treatment, and reporting by the local or national press — or contact with the local government are at work.

Our results indicate that perceived corruption increases with the size of a jurisdiction, partly because a larger jurisdiction is associated with more politicians and a larger budget. This finding, once confirmed by other studies in other institutional contexts and countries, could be another argument in favor of the decentralization and fiscal federalism if it is accompanied by a reduction of the size of jurisdictions.

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Appendix for

Constituency size and perceived corruption

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A1. Supplementary information on cross-country analysis

In this section, we first describe the data used in our international comparison. Then, we detail the estimations results to complete theses described in the main text.

A1.1. Description of the variables used

Table A.1. Descriptive statistics of cross-country variables

Variables	Definition and source	mean	s.d.	min	max
CPI	Corruption perception index (Transparency International)	43.04	19.34	8	92
WB	Corruption index (World Bank)	-0.00035	0.99	-1.87	2.47
ICRG	Corruption index (International Country Risk Guide)	2.94	1.34	0	6
Population (log)	Log transformation of population	16.02	3.03	9.16	22.76
GDP per capita	World Development database of the World Bank	16,961.63	19,326.77	435.08	154,095.7
Government expenditure (% of GDP)	World Development database of the World Bank	16.47	8.33	0.95	147.73
Fuel exports (% of merchandise exports)	World Development database of the World Bank	18.89	26.49	0	99.99
Electoral democracy index	Variety of Democracies database	0.53	0.26	0.02	0.92
Ethnic fractionalization	World Development database of the World Bank	40.24	29.4	0	93
% of Protestants	World Development database of the World Bank	10.3	17.8	0.01	86.74

A1.2. Detailed estimations

Table A.2 presents the detailed results of our cross-country comparison in the main text. We offer here some comments on the control variables.

Control variables either exhibit the expected coefficient or are statistically insignificant. More precisely, GDP per capita bears a positive coefficient, significant at the one-percent level in the three regressions, implying that better off countries are less corrupt. The share of fuel exports bears a negative coefficient significant at the five- or one-percent levels, meaning that countries that export more fuel are more corrupt. The electoral democracy index bears a positive sign significant at the one-percent level implying that electoral democracies are perceived as less corrupt. Finally, we find some evidence that countries with a larger share of Protestants are less corrupt, but the effect is only statistically significant at the 10-percent level.

Table A.2. Indices of corruption and country population: an international comparison (detailed outcomes)

	(1)	(2)	(3)
	CPI [2012-2019] Coef. (se)	CCE [2010-2019] Coef. (se)	ICRG [2010-2017] Coef. (se)
Population (log)	3.86***	0.20***	0.18***
	(1.09)	(0.054)	(0.066)
GDP per capita	0.00061***	0.000032***	0.000031***
	(0.00010)	(0.0000054)	(0.0000085)
Government expenditure (% of GDP)	-0.0050	0.0048	-0.0079
	(0.25)	(0.014)	(0.018)
Fuel exports (% of merchandise exports)	-0.13***	-0.0069***	-0.0086**
	(0.049)	(0.0023)	(0.0034)
Electoral democracy index	28.2***	1.50***	2.44***
	(7.28)	(0.41)	(0.54)
Ethnic fractionalization	-0.059	-0.0033	0.0017
	(0.053)	(0.0030)	(0.0044)
% of Protestants	0.28*	0.015*	0.010
	(0.14)	(0.0080)	(0.010)
Constant	86.7***	2.50**	4.34***
	(23.5)	(1.08)	(1.28)
Observations	364	461	372
Year	8	10	8
Country (max)	48	49	48
Adjusted R^2	0.86	0.86	0.83

Notes. CPI is the Transparency International general Index of Corruption. CCE is the Control of Corruption index of the World Bank. ICRG is the International Country Risk Guide's index of corruption. The CPI data cover 177 countries from 2012 to 2020. The CCE data cover 214 countries from 1996 to 2019. The ICRG data cover 140 countries from 1984 to 2017. All indices increase when corruption is lower. The observations by country are stacked. Method of estimation is pooled OLS. Regional fixed effects and main cultural legacy dummies (British, French, German, Socialist, and Scandinavian) are also introduced. Standard errors are clustered at the country level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

A1.3 International comparisons in a single year

In the main text, we describe the relation between corruption and country size by piling several dates for each country. Here, we present the results if we restrict the sample to a single year. We choose 2017 because it is the most recent year that is commonly available across the three datasets we use.

Table A.3. Indices of corruption and country population: an international comparison in 2017

	(1)	(2)	(3)
	CPI	CCE	ICRG
	Coef. (se)	Coef. (se)	Coef. (se)
Population (log)	-3.41**	-0.20***	-0.22**
	(1.34)	(0.070)	(0.096)
GDP per capita	0.00072***	0.000034***	0.000033**
	(0.00018)	(0.0000095)	(0.000013)
Government expenditure (% of GDP)	0.054	0.0059	-0.011
	(0.36)	(0.019)	(0.025)
Fuel exports (% of merchandise exports)	-0.099	-0.0047	-0.0072
	(0.066)	(0.0034)	(0.0046)
Electoral democracy index	23.0**	1.22**	2.21***
	(8.99)	(0.47)	(0.67)
Ethnical fractionalization	-0.029	-0.0021	0.0028
	(0.072)	(0.0038)	(0.0055)
% of Protestants	0.30	0.016	0.011
	(0.18)	(0.0093)	(0.014)
Observations	47	47	46
Adjusted R^2	0.81	0.82	0.78

Notes. 2017 is the most recent year for the three measure sources. CPI is the Transparency International general Index of Corruption. CCE is the Control of Corruption index of the World Bank. ICRG is the International Country Risk Guide's index of corruption. The CPI data cover 177 countries from 2012 to 2020. The CCE data cover 214 countries from 1996 to 2019. The ICRG data cover 140 countries from 1984 to 2017. All indices increase when corruption is lower. Method of estimation is OLS. Regional fixed effects and main cultural legacy dummies (British, French, German, Socialist and Scandinavian) are also introduced. Standard errors are clustered at the country level. ***Significant at 1% level; **significant at 5% level; * significant at 10% level.

A2. Description of the 2021 French survey variables

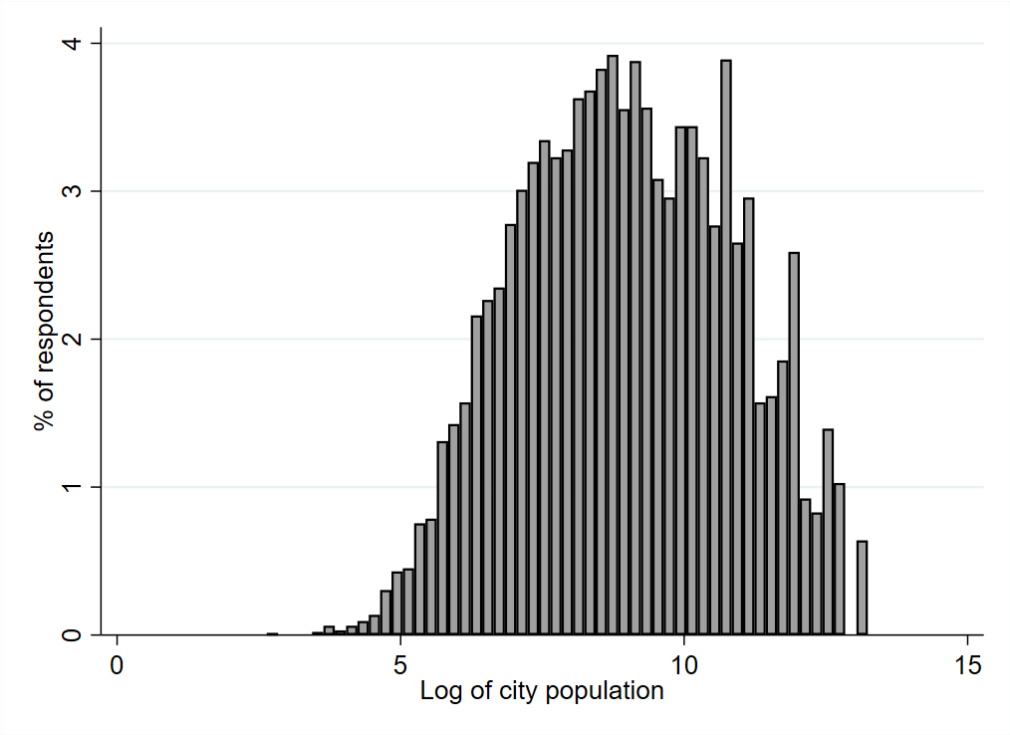
Table A.4. French survey variables description

Variable	Definition and source	mean	sd	min	max
Municipal corruption	Survey question: "Do you think that the municipal institution is involved in corruption?" A 10-ladder scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption".	4.70	2.57	0	10
Population (log)	Log transformation of the municipal population according to the 2020 official number of inhabitants. Source: Direction Générale des Collectivités Locales, DGCL.	8.97	1.89	2.64	13.12
Female	1 if respondent is a woman	0.55	0.50	0	1
Living with someone	1 if the respondent is married or lives with a partner	0.66	0.47	0	1
Age: 18-24	Respondent age in 6 categories	0.05	0.21	0	1
Age: 25-34		0.13	0.34	0	1
Age: 35-49		0.25	0.43	0	1
Age: 50-59		0.19	0.39	0	1
Age: 60-69		0.22	0.41	0	1
Age: 70 and more		0.16	0.37	0	1
Education: no degree	Respondent level of education in 5 categories	0.04	0.20	0	1
Education: professional		0.24	0.43	0	1
Education: secondary		0.22	0.41	0	1
Education: tertiary undergraduate		0.30	0.46	0	1
Education: tertiary graduate and more		0.19	0.39	0	1
Income: <1250€	Respondent income in 7 categories	0.11	0.31	0	1
Income: [1250 – 1999] €		0.21	0.41	0	1
Income: [2000 – 2499] €		0.16	0.37	0	1
Income: [2500 – 3499] €		0.25	0.43	0	1
Income: [3500 – 5999] €		0.24	0.43	0	1
Income: >6000 €		0.03	0.18	0	1
Income: refuse/dk		0.00	0.04	0	1
Work status: self-employed	Respondent work status in 10 categories	0.07	0.25	0	1
Work status: employer		0.01	0.12	0	1
Work status: collaborator in family firm		0.01	0.07	0	1
Work status: Civil servant national bureau		0.15	0.35	0	1
Work status: Civil servant local bureau		0.06	0.23	0	1

Work status: Civil servant hospital		0.03	0.18	0	1
Work status: Employee of a public company		0.07	0.26	0	1
Work status: Employee of a private firm		0.45	0.50	0	1
Work status: Employee of a non-profit organization		0.02	0.16	0	1
Work status: Inactive		0.13	0.34	0	1
Political self-placement	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"?	5.54	2.44	0	10

Notes. We exclude Paris, Lyon, and Marseille for institutional reasons (see the main text)

Figure A.1. Distribution of the respondent municipality population (2021)



Notes. Population is the 2020 official number of inhabitants (source: *Direction Générale des Collectivités Locales*, *DGCL*). We exclude Paris, Lyon, and Marseille because of institutional specificities (see the main text). N = 9536.

A3. The detailed baseline estimation

Here, we detail the outcome of the estimate of Model 1 partly displayed in Table 2, Column 3 of the main text.

Table A.5. Perceived corruption of municipal government and municipal size: Baseline estimates

	Coef.	(se)
Population (log)	0.18***	(0.015)
Political self-position (0, far left as reference):		
1	0.19	(0.27)
2	-0.46**	(0.23)
3	-0.52**	(0.22)
4	-0.54**	(0.23)
5	-0.23	(0.22)
6	-0.42*	(0.22)
7	-0.15	(0.22)
8	-0.084	(0.23)
9	0.036	(0.24)
10 (far right)	0.19	(0.25)
Not reported	0.094	(0.23)
Female	0.32***	(0.054)
Living with someone	0.044	(0.068)
Age (18-24 as reference):		
25-34	0.44***	(0.14)
35-49	0.25*	(0.13)
50-59	0.16	(0.13)
60-69	-0.23*	(0.13)
70 and more	-0.70***	(0.14)
Education (no degree as reference):		
Primary	0.066	(0.15)
Secondary	0.21	(0.15)
Tertiary undergraduate	0.25	(0.15)
Tertiary graduate	0.32**	(0.16)
Income (less than 1250 € as reference)		
Betw. 1250 and 1999 €	-0.064	(0.100)
Betw. 2000 and 2499 €	-0.12	(0.11)
Betw. 2500 and 3499 €	-0.24**	(0.11)
Betw. 3500 and 5999 €	-0.25**	(0.11)
More than 6000 euros	-0.22	(0.18)
Refuse / do not know	0.25	(0.38)
Work status (Self-employed as reference):		
Employer	0.44	(0.28)
Collaborator in family firm	0.74**	(0.32)
Civil servant national bureau	-0.18	(0.12)
Civil servant local bureau	-0.036	(0.15)
Civil servant hospital	-0.22	(0.18)
Employee of a public company	0.041	(0.14)
Employee of a private firm	0.035	(0.11)
Employee of a non-profit organization	-0.28	(0.20)
Inactive	-0.23*	(0.13)
Regional FE	✓	
Observations	9536	
Adjusted R^2	0.076	

Notes: Perceived corruption is measured through the question: "Do you think that the municipal institution is involved in corruption?" on a 10-point scale ranging from 0 "no corruption at all" to 10 "a lot of corruption". OLS estimates. Constant included but not reported. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

A4. The 2006 survey

In this section, we give additional information about the 2006 survey, used as a test for the stability of our results.

A4.1. The 2006 survey method

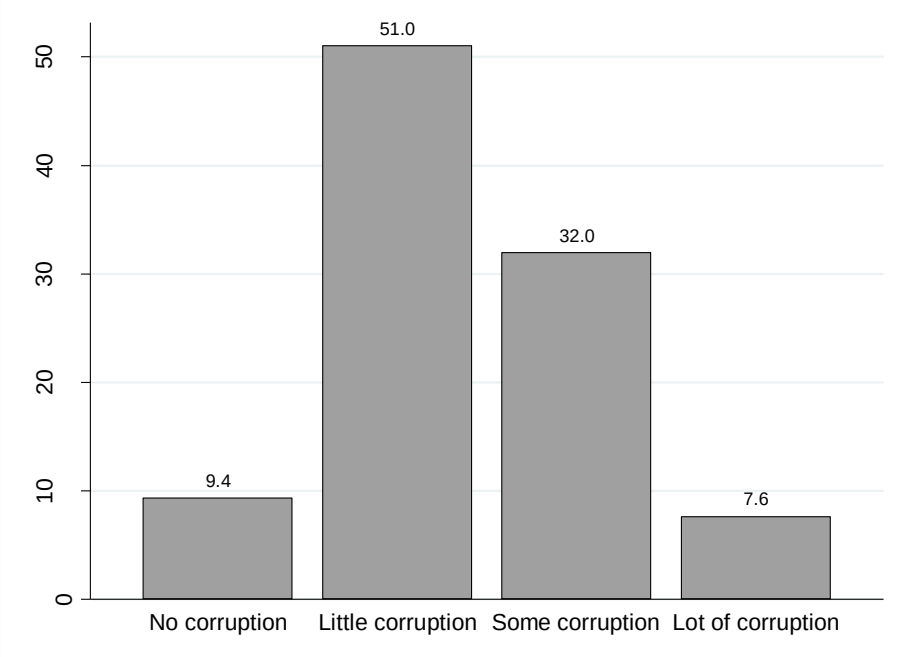
The "Probité" survey was carried out from January 23 to February 18, 2006, based on face-to-face interviews at the respondents' homes (Lascoumes, 2010 and 2011). The representativeness of the sample is based on the quota sampling method: after a first stratum consisting of territorial regions (level 1 of the EU Nomenclature of Territorial Units for Statistics) combined with the category of agglomerations, the quotas are defined by gender combined with age, profession, and educational level. The final sample comprises 2,028 individuals.

At the time of the survey, there were about 36,500 French municipalities. In our sample, respondents live in 419 of them. Those municipalities are located in each of the then 21 metropolitan regions, excluding Corsica, and in 82 out of the 94 metropolitan departments. On average, a municipality included in the survey features 4.8 survey respondents. The most represented municipality has 18 respondents and the least represented one only one.

A4.2. The perceived corruption of municipal government in 2006

In the 2006 survey, respondents were asked to state how much corruption they perceived at various government levels, including the local government. They could reply on a four-item scale: "no", "little", "some", and "a lot of" corruption.

Figure A. 2. Perception of municipal government's corruption in 2006



Notes. Perceived corruption is measured through the question: "In your opinion, is there i) no corruption; ii) little corruption; iii) some corruption or iv) a lot of corruption in the municipal government?". Source: *Probité* (2006) survey

Figure A. 2 reports the distribution of the answers of respondents to the question on the corruption of municipal governments. 51% of respondents perceive the municipal government as only a "little corrupt". If we add the respondents who perceive the municipal government as not corrupt, this category exceeds 60% of respondents. 82% of respondents pick up the intermediate items, namely "little" or "some" corruption. Nearly even shares of respondents chose the two extreme items: "a lot of corruption" and "no corruption".

A4.3. Size of the respondents' municipalities in 2006

Thanks to the zip code of the respondents' residence, we can match the survey with information about their municipality. We collect two standard measures of municipal size at the time of the survey. As our purpose is to relate municipal size to the spread of information, we first consider the municipality's population.

The municipalities included in the sample is very diverse in terms of population and landmass. Because of institutional specificities, we exclude respondents living in Paris, Lyon, and Marseille. The three cities are ruled — and their government elected — according to special rules compared to the rest of the French municipalities.[18] In particular, they are divided into

[18] In addition, Marseille has specific rules compared to those of Paris and Lyon.

sub-municipal governments (*arrondissements*) with mayors for each sub-municipal government (namely *maires d'arrondissement* for Paris and Lyon and *maires de secteur* for Marseille). As a result, we do not know whether respondents were thinking about the sub-mayor or the mayor when they were asked to evaluate municipal corruption. Even when we exclude those three important municipalities, our sample is still characterized by a high variance in municipalities' size (see Table A.6).

Table A.6. Descriptive statistics of the size of municipalities included in the survey in 2006

	Mean	sd	Min	Max
Population	36,201	70,093	68	398,423

Notes. Population is the 2006 official number of inhabitants (source: *Direction Générale des Collectivités Locales, DGCL*), We exclude Paris, Lyon, and Marseille because of institutional specificities (see the text).

The average municipality in the sample has a population of 36,000 and a landmass of 2.65 hectares. However, the least populated municipality has only 68 inhabitants, and the smallest municipality is 117 hectares. By contrast, the most populated has nearly 400,000 inhabitants, and the largest has a landmass of more than 18 hectares. Moreover, we observe that the variance is higher in population (the standard deviation is 1.9 times higher than the mean) than in landmass. It can be explained by the old geographic definition of French municipalities, created at the time of the French Revolution and stable since. By contrast, municipalities' populations have deeply changed since the Revolution over time.

A5. Confounding factors

In this section, we display the tables when we test several confounding factors of the observed relation between the municipal size (inhabitants) and the perceived corruption of the municipal government in 2021. Commentary on these tables can be found in the main text.

Table A.7. Scaling down perceived municipal government corruption by perceived corruption at other government levels

	(1)	(2)
	Corruption of municipal gov. **over** average corruption of other gov.	Corruption of municipal gov. **minus** average corruption of other gov.
	Coef	Coef
	(se)	(se)
Population (log)	0.035***	0.21***
	(0.0031)	(0.013)
Respondent's characteristics	✓	✓
Regional FE	✓	✓
Observations	9367	9536
Adjusted R^2	0.051	0.085

Notes. The first relative measure (model (1)) is the perception of municipal government corruption divided by the average answer given to the other governments (namely, intermunicipal, departmental, regional, members of Parliament, the national Cabinet, and the office of the president). The second relative measure (models (2)) is the perception of municipal gov. minus the average answer given to the other governments (namely, intermunicipal, departmental, regional, members of Parliament, the national Cabinet, and the office of the president). Method of estimation is OLS. Constant included but not reported. The respondent's characteristic variables are detailed in A5. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

Table A.8. Perceived corruption of other government levels and municipal population

	(1)	(2)
	Intermunicipal government	Department government
	Coef	Coef
	(se)	(se)
Population (log)	0.029*	-0.0081
	(0.015)	(0.015)
Respondent's characteristics	✓	✓
Regional FE	✓	✓
Observations	9367	9536
Adjusted R^2	0.035	0.046

Notes. The DV is the perceived corruption of two other levels of government: intermunicipal government and departmental government. It is measured through the question: "Do you think that the institution is involved in corruption?" A 10-ladder scale is proposed from 0 "no corruption at all" to 10 "a lot of corruption" for each government level. The population is the municipal population. Method of estimation is OLS. Constant included but not reported. The respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

Table A.9. Perceived corruption and trust in municipal government

	(1)	
	Coef	(se)
Population (log)	0.13***	(0.014)
Trust in municipal gov:		
Totally confident	-3.27***	(0.12)
Somewhat confident	-2.24***	(0.11)
A little confident	-1.12***	(0.12)
Not at all confident	ref	
Respondent's characteristics	✓	
Regional FE	✓	
Observations	9536	
Adjusted R^2	0.19	

Notes. The DV is the perceived corruption of municipal government. The trust variable is measured through the question: "Do you trust the mayor of your municipality 1) totally; 2) somewhat; 3) rather not or 4) not at all?". The mayor is the leader and the executive chief of the municipal government. Method of estimation is OLS. Constant included but not reported. Method of estimation is OLS. The respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

Table A.10. Reported corruption, perceived corruption, and population size

	(1)	(2)	(4)	(5)
	Coef	Coef	Coef	Coef
	(se)	(se)	(se)	(se)
Population (log)	0.17***	0.17***	0.18***	0.18***
	(0.015)	(0.016)	(0.015)	(0.015)
N. cases	0.0034***			
	(0.00097)			
Log (N. cases)		0.16***		
		(0.052)		
Nb cases per inhab			2821.8*	
			(1597.3)	
Log (Nb cases per inhab)				2822.0*
				(1597.4)
Respondent's characteristics	✓	✓	✓	✓
Regional FE	✓	✓	✓	✓
Observations	9517	9517	9517	9517
Adjusted R^2	0.076	0.076	0.075	0.075

Notes. The DV is the perceived corruption of municipal government. *N. cases* refers to the number of police investigations on breaches of probity cases in the department of the respondent between 2016 and 2021. The data source is Agence Française Anticorruption and Service Statistique Ministériel de la sécurité intérieur, « Les atteintes à la probité enregistrées par la police et la gendarmerie depuis 2016, no. 50, octobre 2022. Method of estimation is OLS. Constant included but not reported. The respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant 10% level.

A6. Supplementary information dealing with the tests of the mechanisms

In this section, we display additional information on the empirical work examining the mechanisms behind the relationship between municipal size and perceived corruption of the municipal government in 2021. We follow the presentation order of the main text, and commentary can be found in the main text.

A.6.1 Size of the municipal council

Table A.11. Relationship between population size and the number of members of the municipal council

Population size	Number of members of the municipal council
< 100	7
[100; 499]	11
[500; 1,499]	15
[1,500; 2,499]	19
[2,500; 3,499]	23
[3,500; 4,999]	27
[5,000; 9,999]	29
[10,000; 19,999]	33
[20,000; 29,999]	35
[30,000; 39,999]	39
[40,000; 49,999]	43
[50,000; 59,999]	45
[60,000; 79,999]	49
[80,000; 99,999]	53
[100,000; 149,999]	55
[150,000; 199,999]	59
[200,000; 249,999]	61
[250,000; 299,999]	65
> 300,000	69

Notes. The source is the French home office.

Table A.12. Detailed estimation with interaction between population size and the number of members of the municipal council

	(1)	
	Coef	(se)
Population (log)	0.15	(0.11)
Nb of councillor	-0.045	(0.031)
Population x Nb of councillor	0.0046	(0.0030)
Respondent's characteristics	✓	
Regional FE	✓	
Observations	7344	
Adjusted R^2	0.067	

Notes. The DV is the perceived corruption of municipal government. Method of estimation is OLS. Constant included but not reported. The respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

A6.2. Additional information dealing with public municipal spending

Table A.13. Coefficients of correlation between municipal population and public spending

Public Spending:	Population (log)
Total (log)	0.99
Total per inhabitant (log)	0.63
Labor spending (log)	0.98
Functioning spending (log)	0.98
Subsidies spending (log)	0.96
Investment spending (log)	0.96

A6.3. The role of information

Table A.14. Interaction between education level and municipal size

	(1)	
	Coef.	(se)
Log (Pop)	0.20**	(0.093)
Education level (No degree as reference):		
Primary level	-0.13	(0.88)
Secondary level	0.58	(0.90)
Tertiary undergraduate	0.29	(0.88)
Tertiary graduate	0.81	(0.91)
Interactive variables:		
Size × Primary level	0.023	(0.097)
Size × Secondary level	-0.042	(0.100)
Size × Tertiary undergraduate	-0.0058	(0.097)
Size × Tertiary graduate	-0.053	(0.100)
Respondent's characteristics	✓	
Regional FE	✓	
Observations	9536	
Adjusted R^2	0.076	

Notes. The DV is the perceived corruption of municipal government. Method of estimation is OLS. Constant included but not reported. The respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

Table A.15. Consumption of local and national newspapers in the studied survey

	Copies sold per 1,000 inhabitants			
	Mean	SD	Min	Max
National newspapers (log)	-4.45	0.362	-5.199	-3.125
Local newspapers (log)	-2.78	0.696	-4.536	-1.415
	Newspaper sales concentration			
National newspapers	0.239	0.034	0.200	0.437
Local newspapers	0.644	0.249	0.131	0.999

Notes. On average, the survey respondents live in a department where 1.28 copies of the national newspaper 1,000 inhabitants are sold. The departmental measure is calculated for 1,000 inhabitants (Source: *Office de justification de la diffusion*). The concentration measure is the Herfindahl-Hirschman Index. All 96 departments are in our sample.

The analyses in the main text and Table A.15 distinguish the national press from the local press. The national press reports similar information across the whole country and mainly deals with international and national issues. Only the largest cities receive attention from national newspapers. There are a few national newspapers, and they are owned by various corporations or individuals without high market concentration.[19] By contrast, the local press produces locally differentiated editions dealing with very local topics. There are more titles produced, even if they belong to several press groups that have various sizes and spatial coverage. In Appendix, Table A.15 indicates that the diffusion of national newspapers is on average higher than the diffusion of local newspapers. By contrast, the variance of the number of available newspapers across departments is higher for local newspapers than for national ones. Newspaper concentration is higher for local than national newspapers.

Table A.16. Press diffusion and concentration, perceived corruption, and population size

	(1) Local press	(2) National press	(3) Local newspaper concentration
Population (log)	0.18***	0.18***	0.18***
	(0.015)	(0.015)	(0.015)
Newspapers consumption (log)	-0.070	0.15	
	(0.090)	(0.11)	
Local newspapers concentration			0.15
			(0.14)
Respondent's characteristics	✓	✓	✓
Regional FE	✓	✓	✓
Observations	9536	9536	9536
Adjusted R^2	0.076	0.076	0.076

Notes. The DV is the perceived corruption of municipal government. The local and national press consumption are calculated at the department level due to data availability for one thousand inhabitants (Source: *Office de justification de la diffusion*). The local newspaper concentration measure is the Herfindahl-Hirschman Index at the department level as well. Method of

[19] The regulation of media in France is strict and aims to avoid the concentration of printed media (see Jouët, 2010).

estimation is OLS. Constant included but not reported. The respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.

A6.4. The role of contact with municipal government

Table A.17. Perceived corruption, municipality population, and contact with the municipal government

	(1)	(2)	(3)
Population (log)	0.21***	0.17***	0.18***
	(0.031)	(0.016)	(0.015)
Rare contact with municipal gov	0.13		
(reference is often)	(0.29)		
Population (log) × rare contact	-0.031		
	(0.033)		
Involved in local activities		-0.50	
(reference is no)		(0.34)	
Population (log) × involved		0.030	
		(0.039)	
Works for local gov			0.36
(reference is no)			(0.60)
Population (log) × works			-0.038
			(0.066)
Respondent's characteristics	✓	✓	✓
Regional FE	✓	✓	✓
Observations	9536	9536	9536
Adjusted R^2	0.076	0.077	0.074

Notes. The DV is the perceived corruption of the municipal government. Method of estimation is OLS. Constant included but not reported. The respondent's characteristic variables are detailed in Table A.4. Regional fixed effects correspond to the former 21 French metropolitan regions. Standard errors clustered at the municipal level. ***Significant at 1% level; **significant at 5% level; *significant at 10% level.