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Politicians at higher levels of government are perceived as more corrupt

Abel François and Pierre-Guillaume Méon

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Abstract: Using an original survey where French citizens were asked to assess corruption at all levels of government, we observe that institutional distance increases perceived corruption. Specifically, municipal governments are perceived as the least corrupt, followed by local governments, senators, deputies, and the national cabinet. The president of the Republic is perceived as slightly less corrupt than the national cabinet, but more corrupt than any other level of government. The relation is robust to alternative specifications, controlling for a series of individual and regional characteristics, and to alternative definitions of the dependent variable. It is not reducible to geographical distance. We observe similar results in other countries.

1. Introduction

The impact of decentralization on corruption is *a priori* ambiguous. As Fan et al. (2009) recall, if decentralization increases the ability of citizens to monitor officials or encourages competition among governments to attract mobile resources, it may reduce the scope for corruption of public officials. Conversely, if it exacerbates the incentives for uncoordinated officials at different levels of government to take bribes, it may result in increased corruption.

Because the impact of decentralization on corruption is theoretically ambiguous, the question is also an empirical matter. However, the evidence has so far also remained mixed. When measured by the structure of the government, decentralization, referred to as political decentralization, has been found to correlate with a higher degree of perceived corruption, for instance by Goldsmith (1999), Treisman (2000), Kunicová and Rose-Ackerman (2005), Fan et al. (2009), or Choudhury (2015). When measured by the share of subnational expenditures, and referred to as fiscal decentralization, it has been found to correlate with a lower degree of perceived corruption, for instance by Huther and Shah (1998), Fisman and Gatti (2002), Arikan (2004), Fan et al. (2009), or Choudhury (2015). Treisman (2007) even concludes that the results are not robust. Those conflicting results leave little hope to shed light on the policy debate on the capacity of decentralization to reduce corruption.

Whereas those studies differ in the way they measure corruption and decentralization, they share a common feature: They all use cross-sections of countries. Specifically, they compare levels of corruption and levels of decentralization horizontally between countries. In this paper, we instead take a vertical point of view on the impact of corruption on decentralization, and investigate the degree of perceived corruption at different levels of government. Doing so not only allows avoiding unobserved heterogeneity between countries, but most of all is a way to provide alternative evidence on the desirability of decentralization. If we observe that lower levels are perceived as more corrupt, then more decentralization would result in more corruption in the aggregate, as Prud'homme (1995) remarks. Conversely, if lower government levels were found to be perceived as less corrupt, then decentralization would decrease aggregate corruption.

Moreover, comparing perceived corruption at different levels of government is also a way to test alternative theories of the impact of decentralization. Arguments emphasizing the impact of decentralization on the ability of citizens to monitor officials and competition among governments, suggest that lower levels of government should be less corrupt. On the contrary, arguments that decentralization would allow a greater intimacy between public officials and potential bribers imply that local levels should be more corrupt.

Although we confirm our results in other countries, we perform the bulk of our study thanks to a survey where French citizens were asked to declare how corrupt they perceived the various levels of the French government to be. This single survey contains information about the perceived corruption of distinct levels and types of government: from local to national and from legislative to executive branches. Such a cross-section survey carried out in a single nation has several desirable features allowing to observe the perception of corruption at various government levels. Firstly, the levels of government are identical for every respondent, which limits heterogeneity in institutional contexts that confound perceptions in cross-country studies.

Secondly, the French case offers a unique empirical opportunity to compare the perception of corruption at distinct levels of government, because the French institutional structure is characterized by an accumulation of government levels. The French are conscious of the accumulation, and commonly refer to it as the "millefeuille institutionnel", which translates literally to "institutional napoleon", after the rich pastry consisting of a succession of layers of dough and cream. Specifically, the French institutional structure features three local governments, namely municipalities, departments, and regions, two legislatives chambers, the National Assembly (the lower chamber) and the Senate (the upper chamber), a national cabinet, and a President.[1] A related advantage is that French levels of government by and large correspond to administrative divisions that are rooted in history. For instance, departments were designed during the French Revolution, and have changed little in mainland France. They have therefore gone through little political manipulation and can be considered as exogenous to corruption.

Thirdly, France stands in the intermediate level in corruption ranking. It for instance ranked 23rd in Transparency International's 2015 Corruption Perception Index. In other words, there is enough corruption in France without it being a fundamental political or economic problem.

Finally, in contrast to the 1980s and 1990s, when French politics experienced lot of political scandals related to the financing of political parties and campaigns, the survey was carried out in 2006, which was relatively quiet in terms of corruption-related scandals. In other words, there was no event close to the time of the survey that could impact the answers of the surveyed persons.

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[1] In French, municipalities are referred to as "communes", departments as "départements", regions as "régions", the National Assembly as "Assemblée Nationale", and the Senate as "Sénat".

In the French survey, we observe a monotonic relation between perceived corruption and the level of government. Specifically, higher levels of government are perceived as more corrupt. In a nutshell, perceived corruption increases with institutional distance to survey respondents. The relation is robust to alternative specifications, controlling for a series of individual and regional characteristics. Importantly, the impact of institutional distance is distinct from the impact of geographical distance. Moreover, when we extend our analysis to international data, we obtain strictly similar results.

To reach those conclusions, the rest of the paper is organized as follows. Section 2 surveys the literature that allows forming expectations on the relationship between corruption and the level of government. Section 3 describes our data and empirical strategy. Section 4 reports our baseline findings, while Section 5 provides a series of robustness checks and extensions. Section 6 concludes.

2. How corruption is perceived at different levels of government is a priori ambiguous

Although the evolution of perceived corruption at different levels of government has received little specific attention, the literature on decentralization provides indirect insights by highlighting mechanisms affecting actual corruption at different levels of government. We distinguish three classes of such mechanisms. The first class emphasizes the incentives faced by politicians who run constituencies at different levels of government. The other two classes emphasize the role of citizens' information and their capacity to sanction misbehavior. Those two classes may amplify or dampen the mechanisms of the first class. We observe that all three classes lead to ambiguous predictions on the evolution of corruption over the government level hierarchy. Finally, because perceived corruption may differ from actual corruption, we consider how perceptions biases may differ at different levels of government in a fourth sub-section.

2.1 Incentives

The first disciplining mechanism that may distinguish different levels of government is yardstick competition. The idea put forward by Besley and Case (1995) is that in a world with asymmetric information voters can assess the behavior of incumbent officials by comparing their performance to the performances of neighboring jurisdictions. Voters will not reelect incumbents who underperform other jurisdictions, giving incumbents an incentive to behave honestly. Because the number of similar jurisdictions decreases as one moves up the hierarchy of government levels, comparisons between officials become more difficult, and officials

holding a mandate at a higher level of government should face a lower incentive to misbehave. This mechanism suggests that corruption should be higher at higher levels of government.

Career concerns may complement yardstick competition. If national careers are more attractive than local ones, local officials have a stronger incentive than national officials to build a reputation of honesty at the local level to be later elected to higher positions. Myerson (2006) makes that point in a standard agency model where firing a politician is costly. In the model, voters fire an official if he/she has behaved in a corrupt way and the cost of firing him/her is small enough. The possibility to be elected at a higher level gives local politicians a larger incentive to behave honestly. Accordingly, in some equilibria local officials behave in a less corrupt way than national ones. The mechanism applies at every government level, but the prospect of upward mobility decreases as one moves up the hierarchy. One should therefore expect corruption to be smaller at lower government levels.

However, Myerson's (2006) model also implies that if voters can perfectly screen officials at the national level, and systematically fire corrupt officials at the national level, they destroy the incentive for officials at lower levels to behave honestly, because the perks of being elected at a higher position disappear. The model therefore has equilibria where local politicians are in fact more corrupt than national ones. One should therefore not rule out the possibility that politicians indeed be more corrupt at lower government levels.

2.2 Information and monitorability

For the incentives discussed above to operate, voters must be able to acquire information about officials. At first pass, voters should have better information about local than national officials, simply because of the proximity of the former, as Fan et al. (2009) point out. Voters should therefore be able to better monitor local politicians, prompting them to be less corrupt.

However, the attention of the media and watchdog groups may mitigate the effect of proximity. Firstly, Fan et al. (2009) remark that the local press may be weaker and more easily subjected to intimidation than the national press. Secondly, the press and watchdog groups have a stronger incentive to scrutinize higher levels of government, because the stakes and prestige are higher at higher levels, as Prud'homme (1996) points out. Media attention and pressure would accordingly be lower at lower levels of government, resulting in more corruption at the local level.

Even assuming that the levels of information on local and national levels are similar, the voters' capacity to detect corrupt practices from that information may differ across levels of government. Tanzi (1996) indeed remarks that local officials are more specialized in the tasks

they perform and can therefore be more directly praised or blamed for their performance. Seabright (1996) elaborates on the idea by setting up a model where the effort of officials is unobservable, the outcome of policies subject to unobservable shocks, and voters use their vote to fire officials who have performed insufficiently. In the model, while centralization allows internalizing externalities between jurisdictions, it also reduces the accountability of officials, because the voters of no jurisdiction can be sure to determine the reelection of officials. In other words, centralization severs the link between the performance of a given region and the decision of voters to reappoint their officials. Tabellini (2000) draws the implication of Seabright's (2006) model for corruption at different levels of government. Because the number of tasks that higher levels of government must perform is larger, he argues that higher levels of government are less accountable. On the contrary, the performance of local governments is easier to monitor, because they are more specialized. As a result, local governments should be better monitored and less corrupt than central governments.

Three mechanisms again qualify this conclusion. Firstly, as Seabright (1996) and Tabellini (2000) point out, the prestige of holding an office at a higher level of government may give an extra incentive to aim for reelection, hence to abstain from corrupt practices. Increased prestige at higher government levels may therefore compensate lower monitorability. Secondly, as Fan et al. (2009) emphasize, whether local officials must perform fewer tasks than officials at higher levels of government is unclear. It is therefore debatable that voters can better monitor local officials. Thirdly, Aidt and Dutta (2017) argue that the impact of centralization on monitorability depends on the sign of externalities between subnational levels of government. In their two-region model, federal politicians can extract more rents than local politicians if externalities between regions are negative but not if they are positive. Intuitively, negative externalities make it costlier for a federal politician to provide a level of public goods that would satisfy both regions. The federal politician may therefore choose to cater to only one region. To avoid being ignored, both regions lower their expectations and let the federal politician collect more rents. As positive externalities make it cheaper to cater to both regions, voters have higher expectations, thereby reducing rents. The upshot is that the degree of corruption at different government levels depends on the sign of the externalities that the different levels of government face when setting their policies. Monitorability thus does not allow unambiguously predicting the degree of corruption at different levels of government.

2.3 The behavior of voters

Voters must be willing to sanction officials who misbehave. A recurrent idea of the literature on decentralization is that the greater proximity between officials and various groups eases corruption at the local level. Tanzi (1996) thus remarks that the "contiguity", the fact that officials and citizens live and work in the same neighborhood, brings personalism in their relationships. Corrupt behaviors are therefore not only more difficult to detect, they are also more unlikely to be reported or sanctioned at the local level, because citizens are engaged in more intricate relationships at the local level.

A specific form of corruption is the attempt to influence party platforms at various levels of government through illegal campaign contributions. Bardhan and Mookherjee (2000) incorporate the intuition in a formal model where a country is divided in districts where rich citizens can capture public policies by financing party campaigns. In the model, a greater cohesiveness of the rich, measured by the share of rich citizens who contribute to campaigns, and a larger share of uninformed voters, will increase the capture of public policies by the rich. Conversely, more electoral competition and more electoral uncertainty will reduce the incentive to finance political campaigns, because they make the return to that investment more uncertain.

The model's predictions as to the relative degree of corruption at the national and local levels are ambiguous. On the one hand, the elite may be more cohesive at the local level, resulting in more corruption. On the other hand, while corruption will be lower at the government level about which voters are better informed, it is not clear whether voters are better informed in local than national elections. In addition, uncertainty may be lower at the local level, if the preferences of voters are tilted towards a given party, or higher, if there are shocks to voters' preferences that cancel out at the national level.

Finally, voters must coordinate to fire or reelect an incumbent that they consider to be corrupt. As Fan et al. (2009) argue, this may give voters an advantage to sanction corrupt officials at the local level, because the electorate is smaller in local elections and can therefore coordinate more easily. However, Fan et al. (2009) also remark that the coordination advantage of small groups decreases very fast with the size of the group and is likely to be negligible beyond small municipalities.

2.4 Perception biases

We have so far discussed how corruption may differ at different government levels. The differences that may appear in surveys of corruption may however be driven by differences in perceptions, as opposed to differences in actual levels of government. Olken (2009) has for

instance reported that perceived corruption weakly correlated with objective measures of corruption in road projects in Indonesia. By the same token, Donchev and Ujhelyi (2014) have documented differences between perceived corruption and measures of corruption from victimization surveys at the cross-country level.

Perceptions may in addition systematically differ across government levels. Intuitively, one may contend that greater proximity and familiarity with local politicians should result in more positive assessments, and that perceived corruption may therefore be larger in higher government levels. However, the literature on distance and leadership surveyed by Antonakis and Atwater (2006) suggests the opposite. Antonakis and Atwater (2006) argue that distant leaders, specifically leaders situated higher up in the hierarchy, are more prone to image building than close leaders, because the followers of the former have less information about them. This would suggest that more distant leaders should be perceived as less corrupt. In the survey that we exploit, this would imply that officials at higher levels of government be perceived as less corrupt.

Shamir (1995) provides the closest investigation of the contention that distant leaders may be idealized. He asked Israeli students to assess the characteristics of distant and close real-world leaders. He found that the two types of leaders were assessed differently on a series of dimensions. However, they performed similarly in terms of perceived honesty, which is the dimension that was the closest to corruption in his survey. This finding is reassuring as it implies that there is no bias in the perception of honesty which systematically correlates with distance.

In addition, differences between perceived and actual corruption may be less of an issue in a European country like France. Indeed, Charron (2016) observes that, in European countries, corruption as perceived by citizens and experts correlates well with actual corruption, both at the country and subnational levels.

3. The data
In this section, we first present the survey used in our empirical work, then describe the data, with a special focus on perceived corruption.

3.1. The survey
The dataset we use comes from a survey carried out at the beginning of 2006 and entitled "Probité (2006)". A national representative survey was conducted from 23th January to 18th February, based on face to face interviews at the respondents' home (Lascoumes, 2010, 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 category of agglomeration, the quotas are defined by sex combined with age, profession, and education level.

The survey contains 71 questions. In addition to usual sociodemographic and political information, it specifically deals with various issues about corruption. The final sample comprises 2,028 individuals.

Among several measures about the respondents' perception of corruption, one set of questions is very suitable for our purpose. Using a four-item scale ("no", "little", "some", and "a lot of"), the respondents were asked to grade the degree of corruption of six levels of government: municipal government, local government mixing both departmental and regional government, legislative bodies distinguishing deputies (members of the lower chamber) and senators (members of the upper chamber), the national cabinet, and the president of the Republic.

Each level corresponds to a distinct constituency, a distinct level of government, or a distinct function. The smallest district is the municipal government. It is the municipal assembly which is elected in a two-round list vote. Local governments in the survey question pool *Conseils Généraux* and *Conseils Régionaux*.[2] *Conseils Généraux* are the assemblies of departments whose members are elected through a FPTP two-round ballot in districts (*cantons*) consisting of several municipalities.[3] *Conseils Régionaux* are also comprised in the local government category. Their members are elected in a two-round list vote in regions. At the time of the survey, there were 94 *Conseils Généraux* in mainland France, 82 of which are present in our sample. At the time of the survey, there were 21 *Conseils Régionaux* in mainland France, and they are all comprised in our sample.[4]

There are two national legislative chambers. The National Assembly is the lower chamber and the Senate the upper chamber. Deputies, the members of the lower chamber, and senators, the members of the upper chamber, both represent their constituency in the national legislative body, but differ in the way they are elected. Senators are elected by an electoral college of local politicians in departments, while deputies are elected by all registered voters in constituencies that are smaller than departments. Deputies are elected in a FPTP two-round

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[2] They match with, respectively, the NUTS1 and NUTS2 levels of the European nomenclature.
[3] Except for large municipalities, which can contain several cantons.
[4] Although Corsica is an island, it is ironically officially considered as part of mainland France. We however do not count it in here, because of its geographic and institutional specificities.

election. Senators are elected using a FPTP two-round election in departments with less than three senators and a proportional list system elsewhere.

Although the Senate is officially the upper house, it is de facto subordinate to the National Assembly. Technically, all bills must be voted in the same wording by both assemblies. However, when the two assemblies cannot agree on a bill, the National Assembly has the last word. Moreover, the perceived institutional distance to senators is likely smaller than the perceived distance to deputies, because senators are often local politicians at the same time and are elected by a college of local representatives. We therefore assume that the Senate ranks below the National Assembly when assessing the relationship between corruption and institutional distance.

The last two questions pertain to the national cabinet and the president, the two components of the national executive branch in charge of national policies. The president is the head of State, is directly elected in a direct two-round national election, and appoints the national cabinet, led by the Prime Minister, that must belong to the majority coalition of the National Assembly.

The levels of government submitted to the perception of the survey respondents constitute a sequence from the most local (municipal governments) to the most national (the president), through intermediate representatives such as senators and deputies.

The key question asking respondents to gauge corruption is "In your opinion, is there i) no corruption; ii) little corruption; iii) some corruption; or iv) lot of corruption in the following government bodies?". As a result, each respondent simultaneously provided his/her perception of corruption for each government level. The answers to those questions are the dependent variable of our analysis.

3.2. A first look at the data

Figure 1 reports the percentage of respondents who consider that there is no, some, little, or a lot of corruption at each level of government, or have no opinion. For each item, the levels of government are reported by order of ascending position in the government hierarchy. Figure 1 therefore first reports the assessment of corruption of municipalities, then goes up the hierarchy all the way up to the president.

Figure 1: Perceived corruption by government level
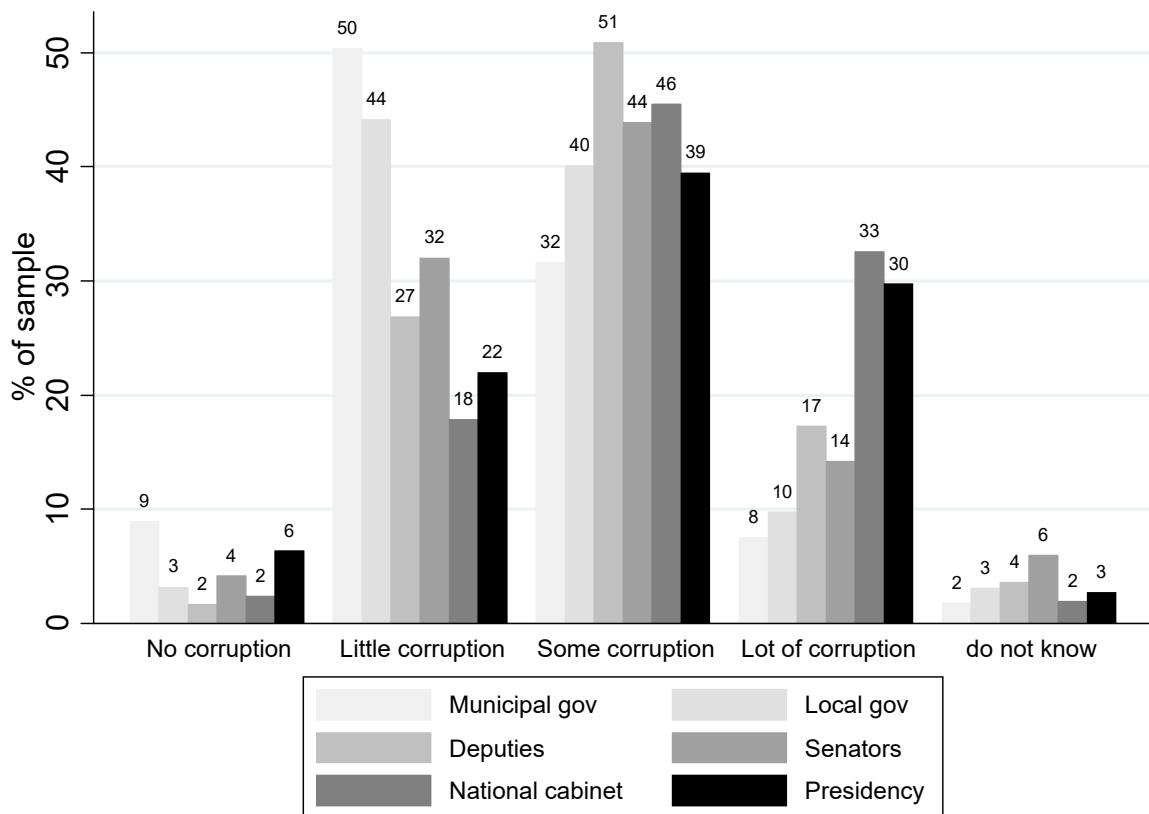
Question: "In your opinion, there is i) no corruption; ii) little corruption; iii) some corruption or iv) lot of corruption in the following government bodies?", Survey "Probité (2006)".

Figure 1 calls for two remarks. First, it shows that there are very few missing responses. At most, 6 percent of respondents have no opinion about the level of corruption of Senators. Secondly, while all distributions are bell-shaped, the modal item varies across government levels. For instance, the "little corruption" item is the modal item for the municipal and local governments, whereas "some corruption" is the modal item for the national government branches.

If one focuses on the items "little corruption" and "lot of corruption", two clear opposite patterns appear. The share of respondents who consider that there is little corruption decreases as one considers higher levels of government. Conversely, the share of respondents who consider that there is a lot of corruption increases as one considers higher levels of government. Figure 1 therefore displays a gradient of perceived corruption signaling that higher levels of government are perceived as more corrupt.

*** Insert Table 1 around here ***

Table 1 complements Figure 1 by reporting summary statistics on the assessment of corruption at every level of government. It shows that the means of answers differ across government levels. Moreover, five-percent confidence intervals never overlap, meaning that observed differences are statistically significant. Perceived corruption is highest for the national cabinet and decreases as one moves down to local governments. The relation is nearly monotonic, although perceived corruption is lower for the president than for the cabinet. Accordingly, local governments are on average perceived as less corrupt than municipal governments, who are perceived as less corrupt than deputies and senators. Senators and deputies are in turn perceived as less corrupt than the national cabinet. The president is perceived as less corrupt than the national cabinet, but as more corrupt than any other level of government.

Table 1 also reports the standard deviation and coefficients of variation of the corruption score of each level of government. Unlike for the means, coefficients of variation display no clear trend. In addition, they vary little, and some of them overlap. If anything, the levels of governments with the largest coefficients of variation are municipal governments and the president. This is striking, because they likely are the two levels of government about which respondents are the best informed, because of the proximity of local governments and of the media coverage of the president. This could be interpreted as evidence that the variance in perceived corruption at the municipal level likely signals actual differences in corruption. The standard deviation of the municipal level cannot however be distinguished from the standard deviations of the other levels of government at the five-percent level of confidence, as their confidence intervals overlap. Because there is only one president, the variance of the corruption that respondents perceive is necessarily driven by perceptions. It may for instance be driven by the reaction to the specific personality of the president at the time of the survey. However, the finding that perceptions differ more for the level of government that attracts the most media attention than for other levels of governments implies that our results cannot be driven by the media's relative inattention to lower levels of government. If anything, if media attention was driving our results, perceptions should be the least heterogenous for the president.

4. Baseline empirical strategy and results

4.1. Empirical strategy

To study the relationship between perceived corruption and the position of a government level in the hierarchy, and control for individual and district characteristics, we estimate the following model:

$$\Pr\left(Corruption_{ij} = a\right) = F\left(a_0 + A_1 Level_i + C_j + G_j + u_{ij}\right)$$ (1)

where $Corruption_{ij}$ is the level of corruption that respondent j perceives at level i of government. We consider six levels of government: The president, the National cabinet, Deputies, Senators, Local governments, and Municipal governments. Municipal governments are the reference category. Variable a can take four values corresponding to the answers to the corruption question: "no corruption", "little corruption", "some corruption", and "a lot of corruption".

$Level_i$ is a vector containing five dummy variables coding the six levels of government that respondent i assesses. With municipal governments being the reference category, there is one dummy for the President, the National cabinet, Deputies, Senators, Local governments. Vector A_1 therefore contains coefficients capturing the differences between the perceived corruption of each level of government and the bottom level, namely municipal governments.

C_j is a fixed respondent effect capturing respondent j's characteristics.[5] Here a fixed effect is defined for each respondent over all government levels. In some specifications, we moreover control for regional fixed effects, G_j. This effect is alternatively defined over regions and departments, that respectively correspond to NUTS2 and NUTS1 regions in the European scale of geographical layers.

Finally, u_{ij} is the error term.

Because the dependent variable follows a natural order, we estimate the model using an ordered logit model. We cluster standard errors at the respondent level, to take into account that the evaluations of different levels of government by the same respondent are not independent.

We could estimate our baseline models on a sample of 11,772 observations, corresponding to 2,028 respondents. As each respondent did not respond to every question about the corruption of all levels of government, the total sample is not the outcome of the 6

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[5] We also carry out a random effects model which drives us exactly to the same conclusion as the model with fixed effects. As a robustness check, we will later replace respondents fixed effects by a vector of characteristics.

questions times the 2,028 respondents. Precisely, 396 answers are missing.[6] Survey respondents live in the 21 regions of mainland France, and 82 departments out of 94. The sampling method ensures that the geographic distribution of respondents follows the true distribution.

4.2. Baseline results

The results of our baseline estimations are reported in Table 2 below. The first column reports the estimation of a specification where only respondents' fixed effects were controlled for. Column 2 reports the outcome of a specification where regional fixed effects defined over regions are added. The specification reported in Column 3 defines regional fixed effects over departments.

*** Insert Table 2 around here ***

A casual look at Table 2 shows that the results are strikingly similar across specifications, both statistically and quantitatively. Moreover, the coefficients that code the levels of government are all significant at the one-percent level, signaling that the differences between government levels are precisely measured.

All the coefficients are positive. As the reference category is municipal governments, this means that respondents perceive all the other levels of government as more corrupt than municipal governments.

We moreover observe that the absolute magnitude of the coefficients decreases almost monotonically as one considers lower levels of government. Like in Figure 1, the only exception is the president, who is perceived as less corrupt than the cabinet. The difference between the corruption perceived at a level of government and the corruption perceived at the municipal level increases as the level goes up in the hierarchy. By the same token, with the exception of the national cabinet, each level of government is perceived as less corrupt than the level that is just above it.

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[6] To be sure that the model estimates are stable across the different levels of government, we also applied our model separately to each level of government. The outcomes of those regressions are reported in Table A1 in the Appendix. They show only minor differences across the government levels.

Figure 2: Predicted probabilities according to the government level
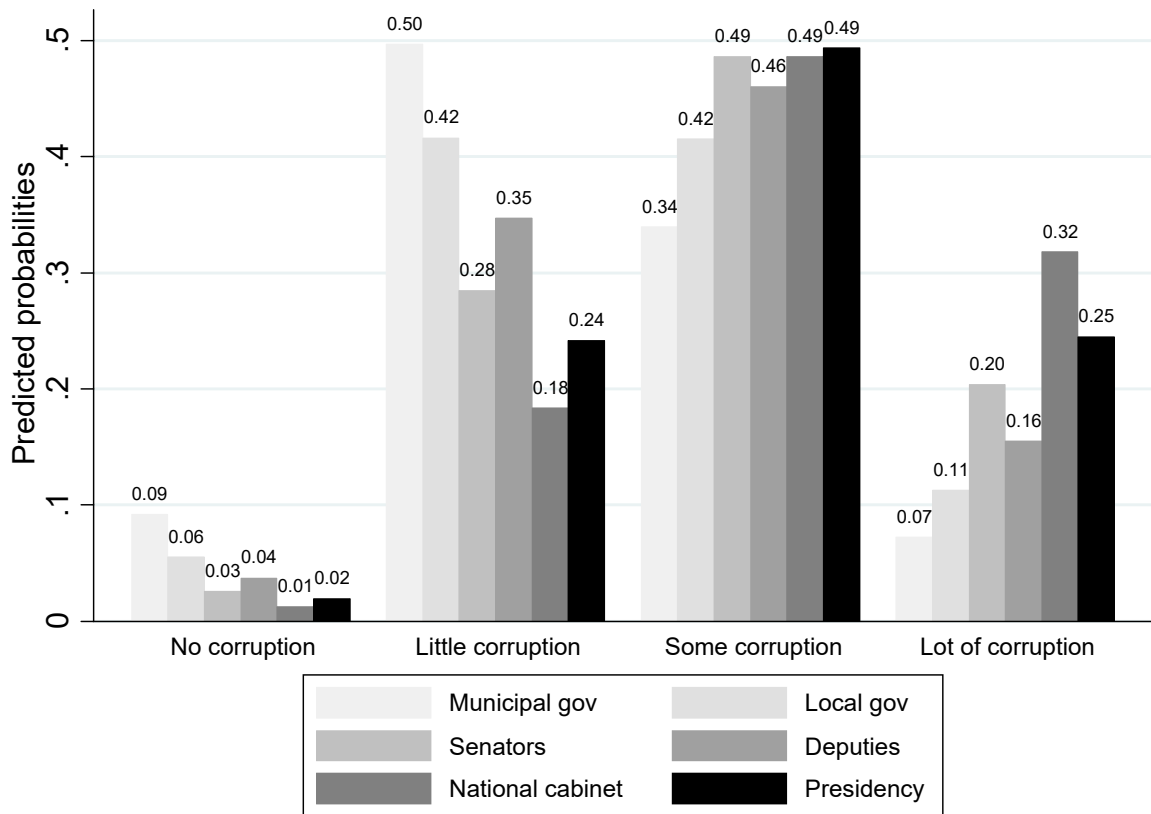
The probabilities are predicted at the mean values with Model 1 of Table 2.

To seize the quantitative significance of the findings, Figure 2 plots the probability of a respondent perceiving no, little, some, or a lot of corruption, predicted by our baseline model. More specifically, we consider the first model reported in Table 2. The model implies that respondents had a 50 percent probability to perceive municipal governments as little corrupt. The same probability was less than 20 percent for the national cabinet, around 25 percent for the president, nearly 30 percent for deputies, about 35 percent for senators, and more than 40 percent for local governments. Figure 2 reports a clear ranking of the probabilities of perceived corruption at different government levels. Municipal governments are the most likely to be perceived as little corrupt, followed by local governments, senators, deputies, the presidency. The national cabinet is the least likely to be perceived as little corrupt.

If we look at the probability that a respondent considers that there is "a lot" of corruption at a given government level, we observe the reversed ranking. The national cabinet is the most likely to be perceived as a government level with "a lot" of corruption, with a probability that exceeds 30 percent, followed by the president, followed by deputies, senators, and local

governments. Municipal governments are the least likely to be perceived as reaching the highest level of corruption. The probability is lower than ten percent.

The upshot of this section is that perceived corruption of politicians increases with their institutional distance to citizens.

5. Robustness checks and extensions

5.1. Alternative estimation methods

We have so far estimated Model 1 using an ordered logit model. To make sure that our results were not driven by the estimation method, we first used ordinary least squares, considering the dependent variable as a cardinal variable increasing with perceived corruption.[7] Doing so allowed us to experiment with both fixed and random respondent effects. Neither with fixed or random effects were the ranking of government levels in terms of perceived corruption affected. Specifically, perceived corruption still increased with the position of a government level in the hierarchy, with the president being perceived as slightly less corrupt than the government but more corrupt than any other level.

Secondly, we have so far overlooked non-responses, because only 9% percent of respondents did not answer all the questions on corruption.[8] Although so few non-responses unlikely biased our results, we considered an ordered probit model with selection, to make sure that they did not.[9] That model first estimates the probability to answer all the six questions based on respondents' characteristics then estimates Model 1 considering the answers as ordered variables conditional on the probability to give all the answers. Again, we observed the same gradient of perceived corruption over the government hierarchy, with the president standing as a minor exception. We also notice that the errors of the two estimations are not correlated given the lack of significance of the estimated rho. Our results were therefore not affected neither by the estimation method or non-responses.

5.2. Respondents' characteristics

We have so far controlled for the characteristics of respondent thanks to fixed respondent effects. This minimizes the risk of an omitted-variable bias but prevents observing

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[7] We report those robustness checks and comment them in Appendix A.2.1.
[8] Moreover, only twelve respondents answered to no question on corruption at all.
[9] We report those robustness checks and comment them in Appendix A.2.1.

the impact of specific characteristics on perceived corruption. To address this concern, we considered a series of socio-demographic characteristics. We thus controlled for the size of the respondent's city of residence, the respondent's gender, age, and education level, income, professional status, political affiliation, and interest in politics.[10]

Controlling for the respondents' characteristics instead of fixed effects only marginally affected the magnitude of the coefficients of our variables of interest, that all kept their sign and remained highly significant. Most of all, the ranking of coefficients remained the same as in our baseline results. We observed the same gradient of perceived corruption over the government hierarchy. Again, the president stood as an exception, as he was perceived as less corrupt than the government.

5.3. Alternative dependent variables

We have so far studied perceived corruption at each of government level without explicitly taking into account the respondents' overall perception of corruption. Differences between respondents were only captured by respondent fixed effects. Individual respondents may nevertheless differ in their sensitivity to corruption. Their assessment of corruption at different levels of government may therefore correlate, because of their general sensitivity to corruption. To address this possibility, we used four alternative definitions of the dependent variable, taking into account their general perception of corruption in different ways.

We obtained the first two alternative dependent variable by scaling down the perceived corruption of each of the first four levels of government, from municipalities to the National Assembly, by the perceived corruption of the president then by the perceived corruption of the national cabinet.[11]

The other two alternative variables were based on another question of the survey, gauging respondents' more general perception of corruption. The question reads "From a general point of view, would you say that French elected officials are rather honest or rather corrupt?". Because respondents had to give a binary answer, we could not use it to scale down perceived corruption like we used the perceived corruption of the president or the National Assembly. Instead, we rescaled the dependent variable by amplifying the responses of respondents who perceive a lot of corruption at a given government level while considering that elected officials are in general "rather honest". Conversely, we dampen the responses of

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[10] We report those robustness checks and comment them in Appendix A.2.2.
[11] We describe, report, and comment those robustness checks in Appendix A.2.3.

respondents who perceive a lot of corruption while considering that elected officials are in general "rather corrupt". The distinction between the two alternatives is that the second amplifies responses more than the first. Specifically, they rescale differently the items "no corruption" and "little corruption", on the one hand, and the items "some corruption" and "lot of corruption", on the other hand.

Despite using different dependent variables, all the estimations confirmed our baseline results. Specifically, we observed the same gradient of corruption as one moves up the hierarchy of government levels.

5.4. Conditioning the effect on political preferences and interest in politics

The perception of corruption may differ between left- and right-wing citizens. Anduiza et al. (2013) for instance observe that survey respondents react less strongly to corruption-related offenses that are the deed of an official of the political party that they support. As, at the time of the survey, the president, the national cabinet, the Senate and the National Assembly, and a majority of local governments were right-wing, one may expect left-wing respondents to perceive more corruption than right-wing respondents. To test this possibility, we estimated our baseline specification separately for left- and right-wing respondents, and for respondents who stated that they were neither left- nor right-wing. The results of the three regressions appear in the left panel of Table 6.

*** Insert Table 3 around here ***

Despite the samples being smaller, the coefficients of all the dummy variables coding government levels remain statistically significant at the one-percent level and keep the same signs as in the baseline regression. Moreover, the ranking of government levels in terms of perceived corruption remains the same as before for left-wing respondents and respondents who declare to be neither left- nor right-wing. The results for right-wing respondents differ slightly. Their perception of corruption still increases with the position of a government level in the hierarchy, and they perceive the president as less corrupt than the national cabinet, but they perceive local governments as more corrupt than senators.

This exception notwithstanding, the key finding that perceived corruption increases with the position of a level of government in the institutional hierarchy is robust to distinguishing respondents by political preferences.

As usual (e.g. Zaller, 1992), respondents to the survey reported heterogeneous degrees of interest in politics. Their knowledge about the behavior of government officials, their perception of corruption in general and of how it differs across government levels, may accordingly differ. To check the robustness of our results to that possibility, we estimated our baseline specification separately for respondents reporting to have no, little, some, or a lot of interest in politics. The outcomes of those regressions are reported in the right-hand side of Table 6.

The table reports little difference across categories of respondents defined over interest in politics. The four regressions show that the finding that perceived corruption increases with the position of a government level in the hierarchy does not relate to the degree of information of respondents. The only difference with our baseline finding is that respondents who are interested in politics a lot tend to perceive similar levels of corruption for the president and the national cabinet, and similar levels of corruption for the local governments and senators.[12]

5.5. Geographic vs. institutional distance

The main conclusion of our empirical investigation is that politicians that are institutionally more distant from citizens are perceived as more corrupt. Institutional distance may however correlate with geographic distance, which in turn may correlate with perceived corruption. In line with that contention, Brinkerhoff et al. (2018) have reported evidence that African leaders who are more distant geographically are assessed more favorably by survey respondents. Specifically, using the 2005 Afrobarometer, they observe that geographic distance to the nearest urban center correlates positively with trust in the local government. In France, the mayor of a municipality works in the same municipality as the respondent, while the president of the republic works in the country's capital city, Paris, and is therefore geographically more distant than the mayors of all the respondents who do not live in Paris. Our findings may therefore capture the impact on perceived corruption of the geographic distance between respondents and the levels government that they assess. We address this possibility in three ways: by distinguishing Paris and other municipalities, by distinguishing municipalities by size, and by controlling for geographic distance to the relevant level of government.

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[12] We also conditioned the effect of institutional distance on corruption on the gender of respondents. As the results were similar for both genders, we report those results in Appendix A.2.4.

Because France is a notoriously centralized country (see e.g. Le Galès and Pinson, 2009), the capital city of Paris concentrates all the national levels of government. Respondents from Paris are therefore close to both municipal and national levels of government, which may affect their perceptions of corruption. To make sure that the difference between Paris and the rest of France did not drive our results, we estimated separate regressions for Paris and the "Provinces", defined as the rest of France. The results of the two regressions are reported in the left-hand side of Table 4. Column 1 reports the result for Parisian respondents, while Column 2 reports the results for provincial ones.

*** Insert Table 4 around here ***

Both regressions confirm that both groups of respondents perceive higher levels of government as more corrupt, with the exception of the president of the republic, whom they perceive as less corrupt than the national cabinet. The key difference between the two groups of respondents is that Parisian respondents perceive no statistically significant difference between senators and municipal governments, and little difference between the president and deputies. In addition, the gradient of perceptions is steeper for provincial respondents than Parisian ones. Provincial respondents in general perceive more difference between levels of government than Parisian ones, despite their overall ranking being the same.

To make sure that our results were not driven by an urban-rural divide, we ran specific regressions by municipality size categories. Specifically, we ran a specific regression for each size of municipality from rural municipalities to Paris, following the same definitions as in Table 3.[13] Those regressions are reported in the middle panel of Table 4. They report the same ranking of perceived corruption for government levels across sizes of municipalities.

The final way to distinguish geographic and institutional distance is to directly control for geographic distance. We thus add to the set of explanatory variables 'crow-fly' distance in kilometers between the centroid of the home municipality of the respondent and the centroid of the municipality where the government seat is located.[14] The distance is by construction zero

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[13] We thus consider four town size categories: less than 2,000, from 2,000 to 20,000, from 20,000 to 100,000, and more than 100,000. Paris is excluded from the larger category.

[14] We compute distance as: $Distance_{ij} = \sqrt{\left(latitude_i - latitude_j\right)^2 + \left(longitude_i - longitude_j\right)^2}$, where i denotes the centroid of the municipality of the respondent and j the centroid of the municipality of the relevant government level.

for the municipal government. The distance to deputies, senators, the national cabinet, and the president is the distance to Paris of the respondent's municipality, as the national assembly, the senate, the government and the president are all located in Paris. For local governments, we calculate the distance between the municipality of each respondent and her.his departmental capital ("*préfecture*" in French). We control for the relevant distance for each respondent-government level dyad.

The new outcomes are detailed in the rightmost panel of Table 4. In the first regression, we only control for geographic distance, then control for both geographic distance and government level dummies.

Column 8 of Table 4 shows that geographic distance to a government level positively correlates with perceived corruption. The coefficient is moreover significant at the one-percent level. The farther the seat of a government level, the greater is perceived corruption.

The last column of Table 4 reports the outcome of regressing perceived corruption on both geographic and institutional distance. In that regression, geographic distance is no longer significant, but neither the significance nor the hierarchy of the coefficients of government level variables change. As in previous regressions, the coefficients increase with institutional distance, reaching a maximum for the national cabinet. Our baseline results are therefore not altered by taking into account the geographic distance to government levels. Furthermore, when governments levels and geographic distance are both controlled for in the same regression, geographic distance loses statistical significance, which suggests that its significant correlation with perceived corruption in Column 8 was driven by the fact that it captures institutional distance.

5.6. Other countries

As we have so far focused on France, one may wonder if our findings are specific to that country or can be generalized. We therefore used the data on perceived corruption available from the Making Electoral Democracy Work project (MEDW).[15] The main advantage of that dataset is that it provides comparable information on perceived corruption in several countries at different points in time. Its main drawback is that its geographic coverage is limited to only two regions in each country, and that it only considers three government levels. We therefore use it to complement the baseline findings obtained with the more detailed and exhaustive French dataset.

We could use data for Canada, Germany, Switzerland, in addition to France. Perceived corruption is available at the municipal, regional, and national levels. Specifically, the dataset reports data on municipalities, regions and the national government for France, on municipalities, provinces and the federal government for Canada, on municipalities, Länder and the federal government for Germany, and on municipalities, cantons and the federal government for Switzerland.[16] We defined government level dummies accordingly. We first estimated Model 1 on each country separately, then pooled all observations in a single regression with country fixed-effects. The results of those regressions are reported in Table 5.

*** Insert Table 5 around here ***

The first column of Table 5 reports the result of estimating Model 1 using the MEDW dataset for France. In line with our baseline results, we observe that both dummies coding government levels are positive and statistically significant at the one-percent level. Both the regional and national levels of government are therefore perceived as more corrupt than municipal governments. One may remark that the coefficient of the national government is now smaller than that of the regional government, which contrasts with our baseline results. However, the two coefficients cannot be distinguished at standard levels of significance. The difference between this and previous results may also stem from the fact that the MEDW dataset only considers three levels of government, as opposed to our baseline dataset that considers six levels of government.

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[15] Information is available on the dedicated website: http://electoraldemocracy.com/. For a scientific exploitation of the survey, see Blais et al. (2015).

[16] The MEDW dataset also contains information about Spain. We could however not use it, because the question on perceived corruption of municipalities was asked to a too small fraction of respondents.

If we now turn to regressions specific to other countries or pooling all available countries together, we observe a pattern that is in line with our baseline results. Specifically, not only are the government-level dummy variables always positive and significant at the one-percent level, but the magnitude of the coefficient of the national government dummy is larger than that of the regional government level dummy.

Accordingly, in all three countries, perceived corruption is lowest at the municipal level, larger at the regional level than at the municipal level, and larger at the national level than at the regional level. The results are the same when we pool together the observations of the four countries.

Our main finding is therefore robust to considering other countries with different political systems and institutional framework, despite their degree of decentralization being different.[17] This is important, because it means that the ranking of perceived corruption is unrelated to the degree of decentralization. Accordingly, decentralizing would indeed reduce corruption.

6. Conclusion

When studying the answers of French citizens to a survey where they were asked to assess corruption at all levels of government, we observe that the perceived degree of corruption of a level of government is higher the higher the level of government is in the government hierarchy. Specifically, we find that municipal governments are perceived as the least corrupt, followed by local governments, senators, deputies, and the national cabinet. The president of the Republic is perceived as slightly less corrupt than the national cabinet, but more corrupt than other institutions.

The finding is not due to any specific estimation method or specification of the estimated relationship. Moreover, the effect of institutional distance is independent from the effect of geographic distance to each level of government. Although, geographic distance as such increases perceived corruption, controlling for geographic distance hardly affects the estimated impact of institutional distance on perceived corruption.

The finding moreover does not seem to be limited to France. Using an alternative dataset allowing to compare corruption at different government levels in four countries with different

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[17] Note that the results pertain to the comparison of perceived corruption at different government levels *within* countries, and not *between* countries. They are therefore not comparable to the results of the cross-country literature.

degrees of decentralization, we observe the same gradient of corruption across levels of government, although the dataset considers a more limited number of government levels.

Our results suggest that decentralization may reduce perceived corruption, by giving more power to the levels of government that are closer to citizens. In that respect, they are in line with earlier work observing that fiscal decentralization correlates with lower degrees of perceived corruption (Huther and Shah, 1998, Fisman and Gatti, 2002, Arikan, 2004, Fan et al., 2009, Choudhury, 2015). Our results complement those earlier findings, because we compare perceived corruption at different levels of government within the same country, instead of comparing perceived corruption across different countries with different degrees of decentralization.

One must nevertheless remain cautious before drawing policy implications from our results. Our results apply to perceived, as opposed to actual, corruption. Although perceived and actual corruption are likely in line in our sample, determining the relationship between perceived and actual corruption at different levels of government would require a measure of actual corruption at each level of government. That question paves the way for future research.

7. References

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Appendix

A.1. Stability of coefficients across government levels

*** Insert Table A1 around here ***

A.2. Detailed robustness checks

A.2.1. Alternative estimation methods

To estimate Model 1 with ordinary least squares (OLS), we treat the answers to the questions on corruption as cardinal variables ranging from 1, for "no corruption", to 4, for "a lot of corruption.". In the first OLS regression, we control for respondents' individual characteristics with respondents' fixed effects, like in the baseline regressions. We complement that regression by a regression where respondents' characteristics are controlled thanks to random effects. The results of those regressions are reported in Table A2.

*** Insert Table A2 around here ***

The first column of Table A2 reports the results of the OLS regression with respondents' fixed effects. The within R squared of 17 percent shows that the explanatory power of the dummy variables capturing government levels is substantial. Moreover, all the dummy variables are statistically significant at the one-percent level. Most of all, they display the same gradient as in the baseline regression.

The second column of Table A2 reports the results of the OLS regression with random effects. Both qualitatively and quantitatively, the results are quite close to those obtained with fixed effects. Again, the model displays the same gradient of perceived corruption across government levels. Our results are therefore robust to estimating and OLS model instead of an ordered probit model.

To test whether non-responses biased our results, we estimated an ordered probit model with selection.[18] In that model, a first step relates the probability to answer the question to the

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[18] See Greene and Hensher (2010) for a discussion of the model.

1

characteristics of respondents, and a second step relates the answers to government levels. Table A3 reports the results of that estimation.

*** Insert Table A3 around here ***

The right-hand side panel of Table A3 reports the results of the first-step of the model, that relates the probability to give an answer to respondents' characteristics. It shows that respondents living in cities larger than 20,000 inhabitants were more likely to give an answer than those living in rural municipalities. Conversely, respondents older than 49 years were less likely than those below 25 to answer the corruption questions. By the same token, respondents who did not answer the question on their income were also less likely to answer the corruption questions. Other characteristics display no statistically significant association with the probability to answer the corruption questions.

The left-hand side panel of the table reports the outcome of the second step of the model, specifically the model that estimates the relation between perceived corruption and government levels. The coefficients of the dummy variables coding government levels are all statistically significant at the one-percent level. Moreover, they display the same ranking as in baseline results. Specifically, they increase monotonically up to the government. The coefficient of the president dummy is smaller than that of the government dummy but larger than any other dummy. Accordingly, our baseline results are not driven by a selection bias due to non-responses.

A.2.2. Respondents' characteristics

There are four municipality size categories: less than 2,000, from 2,000 to 20,000, from 20,000 to 100,000, and more than 100,000. Municipalities smaller than 2,000 inhabitants are the reference category. There are five age-categories, and the 18-25 year old category is the reference category. There are four levels of education, no education being the reference category. We include a dummy variable indicating whether the respondent lives with someone. We control for the respondent's income with four income-category dummy variables. Less than 800 euros is the reference category. We also include a dummy variable set to one if the respondent refuses to declare her/his income, to avoid losing observations. Finally, we control for the respondent's professional status, classified as "employee of private company", which is

the reference group, "Employer", "Independent", "Civil servant", "Employee of public company", and "Inactive".

In some specifications, we moreover control for the respondent's political affiliation, by creating a dummy variable set to one if the respondent declares to be "Rather left-wing", "as left-right as right-wing", which is the as reference, or "Rather right-wing".

In some specifications, we also control for the respondent's interest in politics. Respondents were invited to declare if they were interested in politics "a lot', which is our reference category, "somewhat", "little", or "not".

The results of that estimation are reported in Table A4.

*** Insert Table A4 around here ***

The results that we obtain for control variables are stable across specifications and sketch a consistent picture of the correlates of perceived corruption. We thus observe that respondents living in cities of more than 100,000 inhabitants tend to perceive more corruption at all levels of government, as the coefficient on town size is positive and significant at the ten-percent level.

By the same token, the female dummy variable is positive and significant at the five-percent level, indicating that female respondents tend to perceive more corruption, in line with the cross-country evidence reported by Melgar et al. (2010).

The perception of corruption conversely seems to decrease with age, as the 50-65 year old and the 65 year old and more dummies are both statistically significant and the latter is twice larger than the former, with is reminiscent of the finding of Donchev and Ujhelyi (2014).

Since the dummies coding secondary and tertiary education are both negative statistically significant at the ten-percent level, more educated respondents perceive less corruption at all levels of government than respondents with no education. Conversely, respondents with only primary education are statistically indistinguishable from respondents with no education at all, as the primary education dummy, though negative, is statistically insignificant at standard levels in all specifications. The finding that education correlates with lower perceived corruption is in line with Melgar et al. (2010) but contrasts with Donchev and Ujhelyi (2014).

We find some evidence that professional status correlates with perceived corruption, insofar as civil servants perceive less and employees of public companies more corruption than

employees of private companies, who are the baseline category. Finally, we find no significant effect of income or of living with someone else.

In the Regressions 2 and 3, that control for political affiliation, we find that self-declared right-wing respondents tend to perceive less corruption than respondents who are neither left- or right-wing, as the right-wing dummy bears a negative coefficient significant at the five-percent level. Conversely, left-wing respondents cannot be distinguished from the baseline category. The finding that corruption perception is relatively larger among right-wing respondents than other respondents mirrors the finding of Smyth and Qian (2009) for China.

Finally, Regression 3 shows that respondents who are "somewhat" or "a little" interested in politics tend to perceive significantly less corruption than those who are interested "a lot" in politics, as both dummies bear a negative sign of the same order of magnitude and significant at the five-percent level. Surprisingly, the dummy coding respondents with "no" interest in politics is statistically insignificant, meaning that respondents who care a lot and those who do not care about politics are statistically indistinguishable.

A.2.3. Alternative dependent variables

We obtain the first two alternative dependent variables by scaling down the perceived corruption of each of the first four levels of government, from municipalities to the National Assembly, by the perceived corruption of the president then by the perceived corruption of the national cabinet. As perceived corruption scores range from 1 to 4, the corruption scores scaled down by the score of the president, or the cabinet, can take 11 different values ranging from 0.25 to 4.

The other two alternative variables are based on another question of the survey, gauging respondents' more general perception of corruption. The question is "From a general point of view, would you say that French elected officials are rather honest or rather corrupt?". Because respondents had to give a binary answer, we cannot use it to scale down perceived corruption like we used the perceived corruption of the president or the National Assembly. Instead, we rescale it by amplifying the responses of respondents who perceive a lot of corruption at a given government level but consider that elected officials are in general "rather honest". Conversely, we dampen the responses of respondents who perceive a lot of corruption but consider that elected officials are in general "rather corrupt". In practice, we add or subtract points to the responses on corruption at a given government level, depending on whether those responses are contrary to or in line with the respondents' view of corruption of politicians in general. As there

is no objective way to determine how many points to add or subtract, we experiment with two alternative rescaling, described in Table A5. The distinction between the two alternatives is that the second amplifies responses more than the first. Specifically, they rescale differently the items "no corruption" and "little corruption", on the one hand, and the items "some corruption" and "lot of corruption", on the other hand. As a result, the first index can take five values, whereas the second one can take seven.

*** Insert Table A5 around here ***

Table A6 reports the results of regressions using the four alternative corruption scores as dependent variables. The models were estimated using an ordered logit model and the same specification as in the baseline results. The first two columns report estimations where the perceptions of corruption of the various government levels are respectively scaled down by the perceived corruption of the president (Column 1) and of the national cabinet (Column 2) while the last two columns report estimations where perceived corruption is scaled down by the general perception of corruption.

*** Insert Table A6 around here ***

A.2.4. Effects conditional on gender

Swamy et al. (2001) report micro- and cross-country evidence that women differ from men in that they engage less in corruption and condemn it more than men. Melgar et al. (2010) report that female respondents tend to perceive more corruption than male respondents. If a gender gap exists, it may also affect perceived corruption at different levels of government. We therefore estimated gender-specific regressions, which are reported in Table A7.

*** Insert Table A7 around here ***

The results obtained for the two genders differ little. Most of all, we observe the same ranking of government levels.

Additional reference

Greene, W.H., and D.A. Hensher. *Modeling ordered choices: A primer*. Cambridge University Press, 2010.

Tables

Table 1. Comparison of perceived corruption across government levels: Summary statistics

Government level	Number of valid observations	Mean	Confidence interval (5%)	Standard deviation	Confidence interval (5%)	Coefficient of variation
President	1,974	2.95	2.91; 2.99	0.89	0.86; 0.92	0.30
National cabinet	1,989	3.10	3.07; 3.14	0.77	0.75; 0.80	0.25
Deputies	1,956	2.87	2.83; 2.90	0.71	0.69; 0.73	0.25
Senators	1,907	2.72	2.69; 2.76	0.77	0.74; 0.79	0.28
Local governments	1,966	2.58	2.55; 2.61	0.71	0.69; 0.74	0.27
Municipal governments	1,992	2.38	2.35; 2.42	0.76	0.73; 0.78	0.32

Question: "In your opinion, is there i) no corruption; ii) little corruption; iii) some corruption or iv) a lot of corruption in the following government bodies?". We respectively impute the value 1, 2, 3, and 4 to the item i), ii), iii) and iv). Survey "Probité (2006)".

Table 2. Impact of government level on perceived corruption: Baseline estimates

	1		2		3	
	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)
President	2.06***	(0.086)	2.06***	(0.086)	2.06***	(0.086)
National cabinet	2.59***	(0.079)	2.59***	(0.079)	2.59***	(0.079)
Deputies	1.71***	(0.068)	1.71***	(0.068)	1.71***	(0.068)
Senators	1.22***	(0.072)	1.22***	(0.072)	1.22***	(0.072)
Local governments	0.69***	(0.056)	0.69***	(0.056)	0.69***	(0.056)
Municipal governments	*Reference category*					
Respondent fixed effects	yes		yes		yes	
Geographic fixed effects	no		Region (NUTS2)		Département (NUTS1)	
Chi²(1) of Wald test for:						
President = national cabinet	86.37 ***		86.38 ***		86.68 ***	
National cabinet = deputies	232.40 ***		232.69 ***		232.83 ***	
Deputies = senators	84.81 ***		84.86 ***		84.59 ***	
Senators = local governments	69.31 ***		69.15 ***		69.58 ***	
Observations	11,784		11,784		11,784	
AIC	23,404.8		23,409.9		23,453.2	
Log likelihood	-11,693.4		-11,675.9		-11637.6	

The model is estimated as an ordered logit model. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.

Table 3. Impact of government level on perceived corruption: Conditional on respondents' political characteristics

	Political preferences			Interest in politics			
	1	2	3	4	5	6	7
	LW	Neither	RW	No	Little	Some	A lot
President	2.33***	2.31***	1.13***	2.64***	2.26***	1.55***	1.66***
	(0.15)	(0.13)	(0.19)	(0.17)	(0.15)	(0.16)	(0.24)
National cabinet	2.64***	2.94***	1.80***	3.43***	2.88***	2.02***	1.62***
	(0.14)	(0.12)	(0.17)	(0.15)	(0.14)	(0.14)	(0.21)
Deputies	1.52***	2.05***	1.31***	2.26***	1.99***	1.28***	0.94***
	(0.12)	(0.10)	(0.14)	(0.14)	(0.12)	(0.12)	(0.20)
Senators	1.15***	1.58***	0.59***	1.78***	1.38***	0.88***	0.54***
	(0.13)	(0.11)	(0.15)	(0.14)	(0.13)	(0.13)	(0.20)
Local gov.	0.58***	0.80***	0.68***	1.01***	0.76***	0.43***	0.56***
	(0.095)	(0.084)	(0.13)	(0.12)	(0.099)	(0.099)	(0.15)
Municipal governments	*Reference category*						
Respondent fixed effect	yes	yes	yes	yes	yes	yes	yes
$Chi^2(1)$ of Wald test for:							
President = national cabinet	9.58 ***	59.23 ***	27.38 ***	41.87 ***	43.20 ***	19.20 ***	0.05
National cabinet = deputies	126.68 ***	111.25 ***	14.45 ***	104.09 ***	80.56 ***	47.66 ***	15.59 ***
Deputies = senators	16.04 ***	37.36 ***	38.27 ***	20.78 ***	47.20 ***	16.60 ***	5.39 **
Senators = local governments	25.42 ***	70.20 ***	0.45	35.61 ***	33.12 ***	15.49 ***	0.01
Observations	3,858	5,567	2,359	2,877	4,285	3,350	1,272
AIC	7,631.3	10,772.5	4,892.6	5,531.4	8,303.0	6,751.7	2,729.1
Log likelihood	-3,806.6	-5,377.2	-2,437.3	-2,756.7	-4,142.5	-3,366.9	-1,355.5

The model is estimated as an ordered logit model with respondent fixed effects. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.

Table 4. Impact of government level on perceived corruption: The role of geography

	Paris vs. Province		Effect by size of the municipality					Controlling for geographic distance	
	1	2	3	4	5	6	7	8	9
	Paris	Others	Less than 2,000)	From 2,000 to 20,000	From 20,000 to 100,000	More than 100,000	Paris		
President	0.87***	2.30***	2.80***	2.59***	1.79***	1.99***	0.87***		1.96***
	(0.22)	(0.093)	(0.16)	(0.22)	(0.23)	(0.16)	(0.22)		(0.11)
National cabinet	1.15***	2.88***	3.23***	3.31***	2.37***	2.63***	1.15***		2.49***
	(0.18)	(0.087)	(0.17)	(0.21)	(0.21)	(0.14)	(0.18)		(0.10)
Deputies	0.90***	1.88***	2.44***	2.22***	1.45***	1.44***	0.90***		1.61***
	(0.16)	(0.075)	(0.14)	(0.18)	(0.18)	(0.12)	(0.16)		(0.097)
Senators	0.26	1.42***	1.89***	1.94***	0.88***	0.99***	0.26		1.12***
	(0.18)	(0.079)	(0.14)	(0.19)	(0.19)	(0.13)	(0.18)		(0.099)
Local governments	0.27*	0.78***	1.33***	1.00***	0.35***	0.40***	0.27*		0.69***
	(0.14)	(0.061)	(0.12)	(0.14)	(0.13)	(0.10)	(0.14)		(0.056)
Municipal governments	Reference category								
Distance to gov. (100 km)								0.32***	0.033
								(0.015)	(0.023)
Respondent fixed effect	yes	yes	yes	yes	yes	yes	yes	yes	yes
Chi²(1) of Wald test for:									
President = national cabinet	4.46 **	83.94 ***	12.79 ***	27.12 ***	12.63 ***	35.54 ***	4.46 **		86.29 ***
National cabinet = deputies	3.51 *	245.48 ***	40.30 ***	55.54 ***	36.68 ***	122.29 ***	3.51 *		232.21 ***
Deputies = senators	22.50 ***	63.94 ***	26.22 ***	4.52 **	15.06 ***	21.01 ***	22.50 ***		84.78 ***
Senators = local governments	0.00	83.31 ***	20.44 ***	31.63 ***	10.32 ***	23.28 ***	0.00		23.40 ***
Observations	1,910	9,874	2,854	1,976	1,573	3,471	1,910	11,784	11,784
AIC	3,813.9	19,480.7	5,659.3	3,875.8	3,111.3	6,793.7	3,813.9	24,385.0	23,403.2
Log likelihood	-1,897.9	-9,731.4	-2,820.7	-1,928.9	-1,546.7	-3,387.9	-1,897.9	-12,187.5	-11,691.6

*The model is estimated as an ordered logit model with respondent fixed effect. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.*

Table 5. Impact of government level on perceived corruption: Other countries (Making Electoral Democracy Work project)

	1	2	3	4	5
	France	Canada	Germany	Switzerland	Overall
National government	0.77***	1.51***	2.54***	0.98***	1.77***
	(0.047)	(0.037)	(0.032)	(0.060)	(0.020)
Regional government	0.85***	1.29***	2.09***	0.55***	1.47***
	(0.033)	(0.032)	(0.027)	(0.042)	(0.016)
Municipal governments	*Reference category*				
Country dummies	no	no	no	no	yes
Date dummies	yes	yes	yes	yes	yes
Respondent fixed effect	yes	yes	yes	yes	yes
Chi²(1) of Wald test for: national government = local government	4.70 **	57.55 ***	564.00 ***	101.31 ***	479.38 ***
Observations	15,892	21,110	43,955	12,202	93,159
AIC	36,880.6	50,783.9	102,267.1	26,548.0	219,974.5
Log likelihood	-18,433.3	-25,384.0	-51,126.5	-13,268.0	-109,974.2

The model is estimated as an ordered logit model with respondent fixed effect. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.

Table A1. Determinants of perceived corruption by government level

	1	2	3	4	5	6
	Municipal gov.	Local gov.	Deputies	Senators	National cabinet	President
Town size (rural as reference)						
2,000 to 20,000 inhab.	0.26*	-0.044	-0.067	0.089	0.065	-0.10
	(0.14)	(0.13)	(0.14)	(0.14)	(0.13)	(0.13)
20,000 to 100,000 inhab.	0.70***	-0.018	-0.084	-0.094	-0.015	-0.062
	(0.14)	(0.14)	(0.14)	(0.15)	(0.14)	(0.14)
More than 100,000 inhab.	0.88***	0.15	0.027	-0.0044	0.049	-0.037
	(0.12)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Gender (1 if female)	0.058	-0.097	0.028	0.28***	0.27***	0.27***
	(0.090)	(0.089)	(0.090)	(0.091)	(0.088)	(0.087)
Age (« 18 – 25y » as reference)						
25 – 34 y old	0.14	0.21	0.031	-0.012	-0.079	-0.076
	(0.17)	(0.18)	(0.17)	(0.16)	(0.17)	(0.17)
35 – 49 y old	0.12	0.12	-0.11	-0.16	-0.16	-0.14
	(0.17)	(0.17)	(0.17)	(0.16)	(0.16)	(0.16)
50 – 64 y old	0.069	0.026	-0.34**	-0.46***	-0.31*	-0.25
	(0.17)	(0.17)	(0.17)	(0.16)	(0.16)	(0.16)
65 y old and more	-0.21	-0.29	-0.44**	-0.79***	-0.67***	-0.57***
	(0.19)	(0.19)	(0.18)	(0.18)	(0.18)	(0.18)
Lives with someone	-0.026	-0.14	-0.051	-0.16	-0.084	-0.022
	(0.10)	(0.10)	(0.10)	(0.11)	(0.10)	(0.10)
Education level (« without » as reference)						
Primary	-0.089	-0.23	0.015	0.084	0.087	0.027
	(0.17)	(0.16)	(0.16)	(0.16)	(0.15)	(0.16)
Secondary (1st or 2nd degree)	-0.15	-0.43***	-0.31**	-0.33**	-0.31**	-0.27**
	(0.14)	(0.13)	(0.13)	(0.14)	(0.13)	(0.14)
Tertiary	-0.22	-0.35**	-0.56***	-0.55***	-0.56***	-0.37**
	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Monthly income (« less than 800 € » as reference)						
800 – 1,500 €	0.097	0.13	-0.038	-0.059	0.11	0.070
	(0.17)	(0.17)	(0.17)	(0.16)	(0.16)	(0.16)
1,500 – 3,000 €	0.036	0.057	0.039	0.095	0.23	0.059
	(0.17)	(0.18)	(0.17)	(0.17)	(0.16)	(0.17)
More than 3,000 €	0.0099	0.18	-0.081	0.028	-0.088	0.12
	(0.19)	(0.21)	(0.20)	(0.20)	(0.19)	(0.20)
Do not know/ refuse	0.34*	0.10	-0.041	-0.11	-0.012	0.0033
	(0.20)	(0.20)	(0.20)	(0.19)	(0.19)	(0.20)
Profesional statut (« employee of private company » as reference)						
Employer	0.23	-0.032	-0.12	-0.079	-0.14	-0.50*

	(0.32)	(0.30)	(0.33)	(0.30)	(0.34)	(0.29)
Independent	-0.068	0.16	0.22	0.094	-0.26	-0.26
	(0.23)	(0.26)	(0.30)	(0.25)	(0.28)	(0.23)
Civil servant	-0.16	-0.0011	-0.22	-0.30*	-0.39**	-0.49***
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)
Employee of public company	0.14	-0.064	0.61***	0.25	0.28	0.29
	(0.18)	(0.19)	(0.19)	(0.20)	(0.20)	(0.18)
inactive	-0.13	0.052	0.10	-0.13	-0.19	-0.22*
	(0.13)	(0.13)	(0.13)	(0.13)	(0.12)	(0.12)
Political affiliation (« as left-right as right-wing » as reference)						
Rather left-wing	-0.11	-0.13	-0.20*	-0.14	0.15	0.22**
	(0.10)	(0.11)	(0.11)	(0.11)	(0.10)	(0.10)
Rather right-wing	0.031	0.060	-0.28**	-0.46***	-0.29**	-0.37***
	(0.13)	(0.13)	(0.13)	(0.13)	(0.12)	(0.12)
Interested in politics ("a lot" as reference)						
Somewhat	-0.038	-0.20*	-0.19	-0.23*	-0.35***	-0.24**
	(0.12)	(0.12)	(0.12)	(0.12)	(0.11)	(0.11)
Little	0.17	-0.16	-0.26*	-0.14	-0.45***	-0.28**
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
No	0.39**	0.17	-0.14	-0.031	-0.30*	0.093
	(0.18)	(0.18)	(0.18)	(0.19)	(0.18)	(0.18)
Observations	1,990	1,964	1,954	1,905	1,987	1,972
Pseudo R-squared	0.024	0.009	0.017	0.024	0.027	0.020
AIC	4417.3	4200.8	4164.8	4312.2	4394.8	4853.7

*The model is estimated as an ordered logit model. Standard errors are corrected with the White method. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.*

Table A2. Alternative methods of estimation: Ordinary least squares

	1		2	
	Coef.	(s.e.)	Coef.	(s.e.)
President	0.57***	(0.023)	0.57***	(0.023)
National cabinet	0.72***	(0.021)	0.72***	(0.021)
Deputies	0.48***	(0.019)	0.48***	(0.019)
Senators	0.34***	(0.020)	0.34***	(0.020)
Local governments	0.19***	(0.016)	0.19***	(0.016)
Municipal governments	*Reference category*			
constant	2.39***	(0.013)	2.38***	(0.017)
Respondent effects	fixed		random	
Geographic fixed effects	no		no	
Observations	11,784		11,784	
R² within	0.17		0.17	
R² between	0.002		0.002	

*The model is estimated using OLS. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.*

Table A3. Alternative methods of estimation: Ordered probit with selection

	1		2	
	Probability of corruption		Probability of selection	
	Coef.	(s.e.)	Coef.	(s.e.)
President	0.82***	(0.037)		
National cabinet	1.04***	(0.034)		
Deputies	0.68***	(0.029)		
Senators	0.49***	(0.030)		
Local governments	0.28***	(0.023)		
Municipal governments	*Reference category*			
Town size (rural as reference)				
2,000 to 20,000 inhab.	0.0041	(0.057)	0.080	(0.12)
20,000 to 100,000 inhab.	0.0082	(0.060)	0.38***	(0.15)
More than 100,000 inhab.	0.079	(0.049)	0.24**	(0.098)
Female	0.100***	(0.038)	-0.031	(0.083)
Age (« 18 – 25 » as reference):				
25 – 34 year old	0.036	(0.068)	-0.19	(0.19)
35 – 49 year old	-0.016	(0.067)	-0.34**	(0.17)
50 – 64 year old	-0.11	(0.071)	-0.56***	(0.17)
65 year old and more	-0.27***	(0.081)	-0.65***	(0.18)
Lives with someone	-0.075*	(0.046)	0.17*	(0.096)
Education level (« without » as reference)				
Primary	-0.011	(0.071)	0.079	(0.14)
Secondary (1st or 2nd degree)	-0.17***	(0.057)	0.0053	(0.12)
Tertiary	-0.25***	(0.070)	-0.095	(0.15)
Monthly income (« less than 800 € » as reference)				
800 – 1,500 €	-0.00014	(0.072)	-0.00085	(0.15)
1,500 – 3,000 €	0.051	(0.073)	-0.024	(0.15)
More than 3,000 €	0.016	(0.085)	-0.13	(0.19)
Do not know/ refuse	0.015	(0.089)	-0.38**	(0.17)
Professional status (« employee of private company » as reference)				
Employer	-0.023	(0.12)	-0.048	(0.28)
Independent	-0.019	(0.11)	-0.065	(0.21)
Civil servant	-0.16**	(0.071)	0.075	(0.16)
Employee of public company	0.14*	(0.077)	-0.12	(0.17)
inactive	-0.050	(0.053)	-0.024	(0.12)
Political affiliation (« as left-right as right-wing » as reference)				
Rather left-wing	-0.036	(0.045)	0.090	(0.099)
Rather right-wing	-0.16***	(0.055)	0.064	(0.11)
Interested in politics ("a lot" as reference)				
Somewhat	-0.12**	(0.051)	0.10	(0.10)
Little	-0.12**	(0.057)	0.17	(0.11)
No	0.0041	(0.076)	0.20	(0.16)
Observations	Total = 12,156 ; censored = 1,104 ; uncensored = 11,052			
Log pseudo likelihood	-15,947			
Rho (s.e.)	0.015 (0.166)			
	Wald test of independent equation (rho=0) : Chi²(1) = 0.01 prob = 0.93			

The model is estimated using extension of Heckman selection model (see De Luca and Perotti, 2011). Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.

Table A4. Impact of government level on perceived corruption and respondents' characteristics

	1		2		3	
	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)
President	1.47***	(0.063)	1.48***	(0.063)	1.48***	(0.063)
National cabinet	1.80***	(0.057)	1.80***	(0.057)	1.80***	(0.057)
Deputies	1.19***	(0.049)	1.19***	(0.049)	1.20***	(0.049)
Senators	0.85***	(0.051)	0.85***	(0.051)	0.85***	(0.052)
Local governments	0.49***	(0.040)	0.49***	(0.040)	0.49***	(0.040)
Municipal governments			*Reference category*			
Town size (rural as reference)						
2,000 to 20,000 inhab.	0.036	(0.093)	0.025	(0.093)	0.027	(0.093)
20,000 to 100,000 inhab.	0.067	(0.096)	0.072	(0.096)	0.067	(0.096)
More than 100,000 inhab.	0.16**	(0.077)	0.17**	(0.077)	0.17**	(0.077)
Female	0.14**	(0.062)	0.13**	(0.062)	0.13**	(0.062)
Age (« 18 – 25 » as reference):						
25 – 34 year old	0.016	(0.11)	0.033	(0.11)	0.027	(0.11)
35 – 49 year old	-0.068	(0.11)	-0.043	(0.11)	-0.060	(0.11)
50 – 64 year old	-0.22**	(0.11)	-0.19*	(0.11)	-0.21*	(0.11)
65 year old and more	-0.51***	(0.12)	-0.47***	(0.12)	-0.49***	(0.12)
Lives with someone	-0.082	(0.073)	-0.086	(0.073)	-0.080	(0.073)
Education level (« without » as reference)						
Primary	-0.066	(0.11)	-0.050	(0.11)	-0.012	(0.11)
Secondary (1st or 2nd degree)	-0.33***	(0.094)	-0.31***	(0.094)	-0.29***	(0.094)
Tertiary	-0.46***	(0.11)	-0.43***	(0.11)	-0.42***	(0.11)
Monthly income (« less than 800 € » as reference)						
800 – 1,500 €	0.039	(0.12)	0.039	(0.12)	0.044	(0.12)
1,500 – 3,000 €	0.057	(0.12)	0.071	(0.12)	0.079	(0.12)
More than 3,000 €	-0.048	(0.14)	-0.013	(0.14)	0.014	(0.14)
Do not know/ refuse	0.020	(0.14)	0.023	(0.14)	0.040	(0.14)
Professional status (« employee of private company » as reference)						
Employer	-0.16	(0.22)	-0.12	(0.22)	-0.11	(0.22)
Independent	-0.036	(0.18)	-0.013	(0.18)	-0.036	(0.19)
Civil servant	-0.26**	(0.12)	-0.27**	(0.12)	-0.26**	(0.12)
Employee of public company	0.25**	(0.13)	0.25**	(0.13)	0.25*	(0.13)
inactive	-0.11	(0.085)	-0.096	(0.086)	-0.093	(0.086)
Political affiliation (« as left-right as right-wing » as reference)						
Rather left-wing			-0.043	(0.068)	-0.025	(0.073)
Rather right-wing			-0.25***	(0.090)	-0.22**	(0.092)
Interested in politics ("a lot" as reference)						
Somewhat					-0.21**	(0.082)
Little					-0.19**	(0.092)
No					0.030	(0.12)
Chi²(1) of Wald test for:						
President = national cabinet	63.03 ***		63.17 ***		63.16 ***	
National cabinet = deputies	225.78 ***		224.92 ***		224.12 ***	
Deputies = senators	81.72 ***		81.57 ***		81.89 ***	
Senators = local governments	64.47 ***		65.30 ***		64.71 ***	
Observations	11,772		11,772		11,772	
Pseudo R-squared	0.050		0.051		0.052	
AIC	26,575.2		26,552.5		26,527.2	
Log likelihood	-13,258.6		-13,245.3		-13,229.6	

*The model is estimated as an ordered logit model. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.*

Table A5: Transformation of corruption scores

General perception of elected officials Perception of corruption at government levels	Index 1		Index 2	
	Rather honest	Rather corrupt	Rather honest	Rather corrupt
No corruption	0	-2	0	-3
Little corruption	0	-1	+1	-2
Some corruption	+1	0	+2	-1
Lot of corruption	+2	0	+3	0

Table A6. Impact of government level on perceived corruption: Alternative measures of perceived corruption

	1		2		3		4	
	Compared to the perception of the president		Compared to the perception of the government		Compared to overall perception (5 items)		Compared to overall perception (7 items)	
	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)
President	-	-	2.14***	(0.092)	2.11***	(0.10)	1.89***	(0.082)
National cabinet	2.66***	(0.081)	-	-	2.71***	(0.096)	2.40***	(0.077)
Deputies	1.81***	(0.070)	1.79***	(0.069)	1.97***	(0.086)	1.57***	(0.066)
Senators	1.31***	(0.075)	1.30***	(0.073)	1.43***	(0.089)	1.14***	(0.070)
Local governments	0.75***	(0.058)	0.73***	(0.056)	0.80***	(0.070)	0.63***	(0.054)
Municipal governments				*Reference category*				
Respondent fixed effects	yes		yes		yes		yes	
$Chi^2(1)$ of Wald test for:								
President = national cabinet	-		President = deputies 20.58 ***		78.41 ***		89.29 ***	
National cabinet = deputies	211.66 ***		-		111.34 ***		218.56 ***	
Deputies = senators	82.84 ***		82.27 ***		64.33 ***		69.13 ***	
Senators = local governments	69.30 ***		73.65 ***		59.35 ***		66.26 ***	
Observations	9,664		9,678		12,168		12,168	
AIC	26,618		25,101		18,289		28,550	
Log likelihood	-13,294		-12,535		-9,135		-14,263	

The model is estimated as an ordered logit model with respondent fixed effects. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses. See the text for the definition of the relative measures of perceived corruption.

Table A7. Impact of government level on perceived corruption: Conditional on respondents' gender

	Male	Female
	1	2
President	1.70***	2.42***
	(0.12)	(0.12)
National cabinet	2.19***	2.99***
	(0.11)	(0.11)
Deputies	1.54***	1.88***
	(0.096)	(0.097)
Senators	0.95***	1.50***
	(0.10)	(0.10)
Local governments	0.69***	0.70***
	(0.081)	(0.078)
Municipal governments	Reference category	
Respondent fixed effect	yes	yes
Chi²(1) of Wald test for:		
President = national cabinet	34.54 ***	53.06 ***
National cabinet = deputies	63.41 ***	183.14 ***
Deputies = senators	63.56 ***	25.58 ***
Senators = local governments	7.91 ***	79.18 ***
Observations	5,563	6,221
AIC	11,444.2	11,894.3
Log likelihood	-5,713.1	-5,938.2

*The model is estimated as an ordered logit model with respondent fixed effects. Standard errors are corrected by cluster method associated to the respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.*