Politicians at higher levels of government are perceived as more corrupt

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Abstract: The relationship between decentralization and corruption has been discussed extensively, but little is known about the variation of corruption across government levels. Using an original survey where French citizens were asked to assess corruption at all levels of government, we observe that corruption perceived at a government level is higher, the higher the government level in the government hierarchy. 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 relationship is robust to alternative specifications, controlling for a series of individual and regional characteristics, and to alternative definitions of the dependent variable. The finding is not reducible to geographic distance. We observe it in several other countries.

Keywords: Corruption, Levels of government, Decentralization, Federalism.

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1. INTRODUCTION

The impact of decentralization on corruption is *a priori* ambiguous (Fan et al., 2009; Diaby and Sylwester, 2014). If it increases the ability of citizens to monitor officials or encourages competition among governments to attract mobile resources, it may discipline public officials. Conversely, if decentralization exacerbates the incentives for uncoordinated officials at different levels of government to take bribes, it may result in increased corruption.

The evidence has also remained mixed so far. 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 (e.g., Goldsmith, 1999; Treisman, 2000; Kunicová and Rose-Ackerman, 2005; Fan et al., 2009; and 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 (e.g., Huther and Shah, 1998; Fisman and Gatti, 2002; Arikan, 2004; Fan et al., 2009; and Choudhury, 2015). Treisman (2007) concludes that the results pertaining to both types of corruption are not robust. Despite their differences, those studies are all cross-countries studies, comparing levels of corruption and levels of decentralization horizontally between countries.

In this paper, we instead take a vertical point of view and investigate the degree of perceived corruption at different levels of government. If lower levels are perceived as more corrupt, then more decentralization would result in more perceived corruption in the aggregate, as Prud'homme (1995) remarks. Conversely, if lower government levels are perceived as less corrupt, then decentralization would decrease aggregate perceived corruption. We thus complement the empirical quantitative literature on the link between the quality of institutions and corruption (see e.g., Heidenheimer and Johnston, 2001, for an overview). That literature moved from comparing corruption across nations (Goldsmith, 1999; Treisman, 2000; Paldam, 2002; Fisman and Gatti, 2002; Kunicová and Rose-Ackerman, 2005; Fan et al., 2009) to

comparing corruption across government bodies (Stensöta et al., 2015), regions (Del Monte and Papagni, 2007; Becker et al., 2009; Charron and Lapuente, 2013; Charron, 2016, Borsky and Kalkschmied, 2019), or municipalities (Linde and Erlingsson, 2013; Erlingsson and Lundåsen, 2019). By contrast, we distinguish levels of government within a single nation.

Although we study several industrialized advanced democracies, our main dataset is a survey of French residents. That survey contains information about the perception of corruption at distinct levels of government, from local to national. We must emphasize that the survey measures perceived corruption and that we cannot claim to measure actual corruption. The survey nonetheless has several desirable features. First, the levels of government are identical for all respondents, which limits the heterogeneity in institutional contexts that confounds perceptions in cross-country studies. Second, the French institutional structure is characterized by an accumulation of government levels: three local governments, namely municipalities, departments, and regions, two legislative chambers, the National Assembly (the lower chamber) and the Senate (the upper chamber), a national cabinet, and the President of the Republic.[2] They correspond to administrative divisions that are rooted in history and can, therefore, be considered as exogenous to contemporary corruption. For instance, departments were designed during the French Revolution. Finally, there is corruption in France without it being a fundamental political or economic problem —France ranked 23rd in Transparency International's 2006 Corruption Perception Index (Transparency International, 2019)— and no event close to the time of the survey likely affected the answers of respondents.

Our study echoes Aidt et al.'s (2020), which reports that bribe taking by Chinese officials increases with positions at higher levels of official hierarchies. It however differs from it in three major ways. Firstly, it considers perceived corruption as opposed to convictions.

[2] 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". See appendix A1 for a summary of the features of French government levels.

Secondly, the units of observations are respondents assessing different levels of government instead of officials being convicted of corruption. Thirdly, and most importantly, we consider western democracies whereas Aidt et al. (2020) focus on China.

In all our specifications and for all the countries that we study, we observe the same stylized fact, specifically corruption perceived at a government level is higher the higher the government level in the government hierarchy. Importantly, the finding is independent from the impact of geographic distance to government levels. It is independent from respondents' stated political preferences and from their interest in politics, despite the latter being correlated with the level of corruption they perceive for all levels of government. It is also independent from their level of education, and from their gender.

2. WHAT SHAPES CORRUPTION AT DIFFERENT LEVELS OF GOVERNMENT: A SURVEY OF THE LITERATURE

We distinguish two classes of mechanisms suggesting that corruption should be larger for higher levels of government. If perceived corruption at least partly reflects actual corruption, then it should be affected in the same way by the same mechanisms. The first class emphasizes the incentives faced by politicians who run constituencies at different levels of government. The other stresses the role of citizens' information and their capacity to sanction misbehavior. Those arguments may however be overturned, making the question *a priori* ambiguous. One should also consider how perceptions may be affected, regardless of the underlying phenomenon.

2.1 THE INCENTIVES FACED BY POLITICIANS

The first mechanism that distinguishes 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 officials by comparing their performance to the performances of officials in other similar 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. Officials holding a mandate at a higher level of government should consequently face a lower incentive to behave. This mechanism implies that corruption should be higher at higher levels of government.

Career concerns complement yardstick competition. Since national careers are typically 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. The mechanism applies at every government level, but the prospect of upward mobility decreases as one moves up the hierarchy. One may also contend that mandates at higher levels of government are more valuable because they allow awarding more valuable favors. They would therefore give higher incentives to bribe officials at higher government levels, as Facchini (2004) suggests. One should, therefore, expect corruption to be smaller at lower government levels.

2.2 CITIZENS' INFORMATION AND ABILITY TO HOLD POLITICIANS ACCOUNTABLE

For the incentives discussed above to operate, voters must be able to acquire information about officials. Voters should have better information about local than national officials, simply because of their proximity to the former, as Aidt (2003) or Fan et al. (2009) point out. They should therefore be able to better monitor local politicians, prompting these politicians to be less corrupt.

Moreover, even if the levels of information on local and national politicians are similar, the voters' capacity to detect corrupt practices from that information may differ across levels of government, resulting in differences in the clarity of the responsibility of corruption. Tavits (2007) provides cross-country evidence that clearer responsibility correlates with lower corruption. Within countries, Tanzi (1996) 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 constituents use their vote to fire officials who have performed insufficiently. In the model, centralization 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) applies an argument similar to Seabright's (2006) to 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 hence less corrupt than central governments.

2.3 QUALIFICATIONS

The arguments put forward so far imply that corruption should be larger at higher levels of government. We must, however, acknowledge that these arguments might be qualified or overturned.

Firstly, the capacity of citizens to gather information about public officials depends on transparency regulations and media coverage (Cordis and Warren, 2014, Brunetti and Weder, 2003, and Snyder and Stromberg, 2010). A weaker attention of the media and watchdog groups may mitigate the effect of proximity, because the local press is either weaker or has less resources than the national one (Fan et al., 2009) or because prestige considerations give the press and watchdog groups a stronger incentive to scrutinize higher levels of government (Prud'homme, 1996). The efforts of citizens to control corruption would therefore be less effective (Themudo, 2013).

Moreover, the greater proximity between officials and various groups at the local level may ease corruption by personalizing the relationship between citizens and officials (Tanzi, 1996) or result in the capture of local politicians by the local elite (Bardhan and Mookherjee, 2000). If the proximity between citizens and local officials prompts them to have a common interest, citizens may have an individual incentive not to fire corrupt local officials, in line with Lévêques's (2020) finding that the families of candidates who supported elected mayors receive more building permits in French municipalities. Also, more information on the corrupt behaviour of local politicians may decrease voter turnout and the support for the challenger party, as Chong et al. (2014) observe.

Likewise, the contention that local governments are easier to monitor must also be qualified because the prestige of holding an office at a higher level of government may give an extra incentive to aim for re-election compensating lower monitorability (Seabright, 1996, Tabellini, 2000). In addition, whether local officials must perform fewer tasks than officials at

higher levels of government is unclear (Fan et al., 2009). Finally, Aidt and Dutta (2017) argue that the impact of centralization on monitorability depends on the sign of externalities between subnational levels of government.

In addition, we must stress that perceptions may differ from actual levels of corruption. 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.

Arguably, perceptions may systematically differ across government levels, for instance if the greater proximity and familiarity with local politicians results in more positive assessments. Perceived corruption may therefore be larger for 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 suggests that there is no bias in the perception of honesty which systematically correlates with distance.

Another phenomenon that may increase the perception of corruption at the local level is the fact that respondents are more likely to hear a case of corruption at a given government level the more numerous are its members. To illustrate that idea, there is only one president of the republic in France but there are nearly 35,000 municipalities. The likelihood to hear that a mayor is corrupt is therefore large, simply because there are many mayors.[3]

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.[4]

In a nutshell, the theoretical literature leads to ambiguous predictions about how perceived corruption may differ across different government levels. The question therefore becomes an empirical matter that we address in the subsequent sections.

3. DATA AND EMPIRICAL STRATEGY

3.1 THE FRENCH SURVEY ABOUT CORRUPTION

Our main dataset comes from a survey carried out in France at the beginning of 2006 entitled "Probité (2006)".[5] A national representative survey-of more than 2,000 respondents- was conducted from 23th January to 18th February, based on face-to-face interviews at the respondents' homes (Lascoumes, 2010). The representativeness of the sample is based on the quota sampling method.[6]

[3] We thank an anonymous referee for that argument.
[4] Those arguments notwithstanding, we cannot compare perceived to actual corruption in the rest of the paper, as we found no measure of actual corruption at various government levels.
[5] In Section 6 we complement the analysis with more recent data on France and other countries spanning 2011-2015. Using that data, however, comes at the cost of less granularity and of a smaller number of regions in each surveyed country.
[6] After a first stratum consisting of territorial regions (level 1 of the EU Nomenclature of Territorial Units for Statistics) combined with the category of agglomeration, the quotas are defined by gender combined with age, profession, and educational level.

The survey was a single shot and specifically focused on the perception of corruption in France. To the best of our knowledge, it is the only one offering so much fineness on perceived corruption at various levels of government within a single nation with so many levels of government. Moreover, the survey was carried out during a period with no major scandal related to politicians' corruption. Moreover, 2006 was a quiet year from a political point of view, as no general election was held.[7] This limits the respondents' polarization and the possible influence of the coverage of corruption-related scandals (Le Moglie *et al.* 2019). Finally, corruption in France is likely less studied than in other countries. Existing studies essentially take a sociological perspective. For instance, Lascoumes (2010 and 2011) and Meny (1992) seek to explain the lack of electoral punishment for French politicians charged with corruption.

In addition to usual sociodemographic and political information, the survey asks a series of questions about corruption at a sequence of government levels. The questions are framed in the following way: "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?" As a result, respondents provided their perception of corruption at each government level. The question refers to corruption in general and therefore captures both "cheating" and "looting" as distinguished by (Nyblade and Reed, 2008).[8] One must bear in mind that the answers of respondents provide information on their perception of corruption. Therefore, they may or may not reflect actual levels of corruption. We accordingly refer to perceived corruption whenever commenting our results.

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[7] In particular, the survey was carried out four years after the latest presidential election that had taken place in 2002 and more than a year before the next. The campaign had therefore not started.

[8] Although corruption is a many-faceted phenomenon difficult to precisely define, it has to be distinguished from clientelism and favoritism. We define corruption in the context of our study as the use of an elected position for private gain, following Jain (2001). Accordingly, it does not encompass favoring a subset of citizens to whom one is connected, unless doing so results in a private personal gain. For parsimony's sake, we refer to corruption, but cannot rule out that the respondents assessed a mixed bag of corruption, clientelism, and favoritism.
One may also contend that respondents expressed a rejection of political elites when assessing corruption. Although we provide evidence in Section 6.3 that the ranking of government levels in terms of corruption is conditional neither on respondents' level of education nor on their level of income, and is therefore shared by the most educated and the best-off, who are therefore close to the elite, we cannot rule that possibility out.

Respondents were asked to grade the degree of corruption of six levels of French 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.[9] The municipal government, the local governments (*Conseils Généraux* and *Conseils Régionaux*)[10], the deputies and the president are directly elected. By contrast, the senators are elected by an electoral college of local politicians in departments. The perceived hierarchical 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.[11] Finally, the prime minister and the national cabinet are appointed by the president, who is directly elected in a two-round national election. The cabinet is the outcome of a negotiation within the coalition controlling the lower chamber.

As a result, 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.[12]

3.2 A FIRST LOOK AT THE DATA

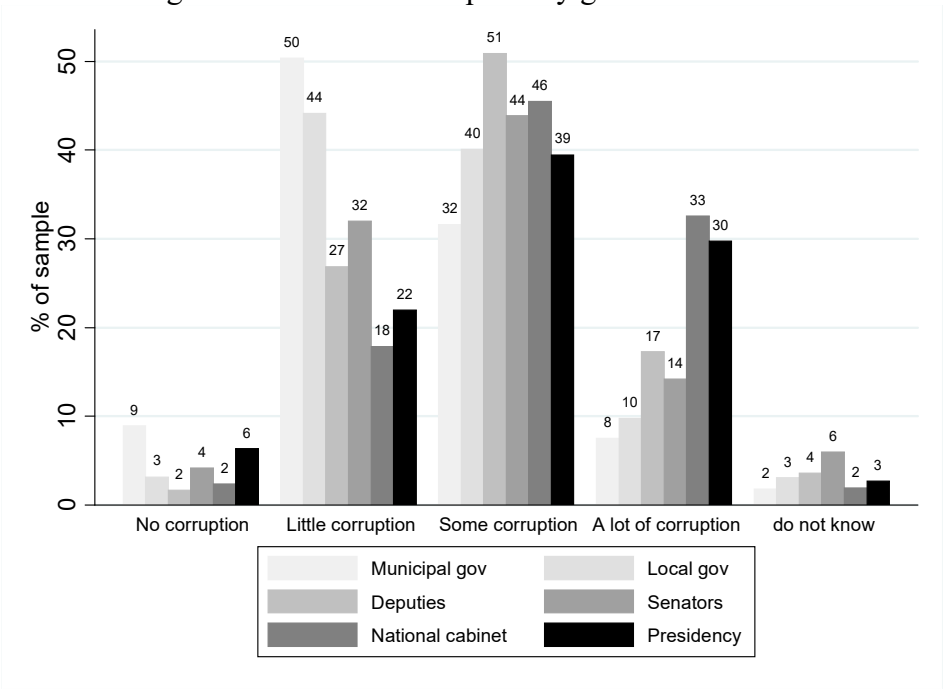
Figure 1 reports the percentage of respondents who consider that there is no, some, little, or a lot of corruption at each level of government, or who have no opinion. For each item, the

[9] Appendix A1 summarizes the main information about the various levels.
[10] They match with, respectively, the NUTS1 and NUTS2 levels of the European nomenclature.
[11] More generally, a subset of deputies and senators were mayors and deputies or senators at the same time, which may blur the distinction between government levels, as restrictions on multiple mandates were only imposed after the survey. That blurring of differences between government levels would however result in a downward bias in the coefficients of the government level dummy variables, thereby running against our finding.
[12] Even though some deputies and senators may hold local mandates, we consider them to be more central than mayors and local governments for at least three reasons. First, their activity is national, as they vote the laws of the whole country and control the national cabinet and executive branch. Second, according to the French Constitution, deputies are representatives of "the nation" as a whole, as opposed to representing their constituencies. Third, and as a result, constituencies officially only matter to the extent that they are used to elect deputies and senators, rather than to design and implement local policies.

levels of government are reported by order of ascending position in the government hierarchy. Hence, Figure 1 first reports the assessment of corruption of municipalities and then goes up the hierarchy all the way up to the president.

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 cabinet branches.

Figure 1: Perceived corruption by government level



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

If one focuses on the items "little corruption" and "a lot of corruption", two clear opposite patterns appear. The share of respondents who perceive 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.

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, the 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 relationship 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. Deputies and senators 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. 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) lots of corruption in the following government bodies?”. We impute the value 1, 2, 3, and 4 to the items i), ii), iii), and iv), respectively. Survey “Probité (2006)”.

Table 1 also reports the standard deviation and coefficients of variation of the corruption score of each level of government. Unlike 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, since 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 coefficient at 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 government 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.[13]

3.3 ESTIMATION STRATEGY

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

$$Pr\big(Corruption_{i,j} = a\big) = F\big(a_0 + A_1.Level_i + C_j + u_{ij}\big),$$

where $Corruption_{ij}$ is the level of corruption that respondent j perceives at level i of government. 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

[13] In Section 4.2, we further address the role of the media by controlling for the availability of newspapers in a respondent's department.

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 members, deputies, senators, and local government officials. Vector A_1 therefore contains coefficients capturing the differences between the perceived corruption of each level of government and the lowest government level, namely municipal governments. C_j is a fixed respondent effect capturing respondent *j*'s characteristics, defined for each respondent over all government levels. We also report a set of estimations where we separately control for respondents' characteristics instead of fixed effect. 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 by respondent to take into account the possibility that the evaluations by the same respondent of different levels of government may not be independent.

Our sample consists of 11,772 observations, corresponding to 2,028 respondents living in the 21 regions of mainland France, and 82 departments out of 94. 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 questions times the 2,028 respondents, and precisely 396 answers are missing.[14] 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.

[14] 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 the online appendices. They show only minor differences across the government levels.

4. BASELINE RESULTS

4.1. ESTIMATION WITH FIXED RESPONDENT EFFECTS

The results of our baseline estimations are reported in Table 2. The first column reports the estimation of a specification that pools all respondents. The coefficients that code the levels of government are all positive and significant at the one-percent level. As the reference category is municipal governments, this means that respondents perceive all other levels of government as more corrupt than municipal governments. The absolute magnitude of the coefficients moreover increases almost monotonically as one considers higher levels of government. The only exception is the president, who is perceived as less corrupt than the cabinet.[15] Except for the national cabinet, each level of government is therefore perceived as less corrupt than the level that is just above it, as the Chi-squared of the Wald tests signal. Accordingly, perceived corruption increases with politicians' hierarchical distance to citizens. The finding echoes that of Aidt et al. (2020) who observe that Chinese officials at higher levels of official hierarchies take larger bribes. An optimistic interpretation of our result may therefore be that perceived corruption correlates with the size of bribes. Such an interpretation must, however, remain speculative, as the results of Aidt et al. (2020) pertain to a different country with wildly different institutions.

Hierarchical distance may correlate with geographic distance, which in turn may correlate with perceived corruption (Brinkerhoff et al. 2018). We address this possibility by controlling for geographic distance to the relevant level of government, defined as 'crow-fly' distance between the centroid of the home municipality of the respondent and the centroid of the municipality where the government seat is located. Distance to the municipal government is, by construction, zero. The distance to deputies, senators, the national cabinet, and the

[15] This may be surprising, as President Jacques Chirac had faced corruption charges a few years before the survey. One may hypothesize that respondents either forgot about those charges or discarded them due their evaluation of his personality.

president is the distance of the respondent's municipality to Paris. For local governments, we calculate the distance between the municipality of respondents and their departmental capital ("*préfecture*" in French).

Only controlling for geographic distance, Column 2 shows that its coefficient is positive and significant at the one-percent level. Accordingly, the farther from a respondent the seat of a government level, the greater is perceived corruption. Column 3 reports the outcome of regressing perceived corruption on both geographic and hierarchical distance. In that regression, geographic distance is no longer significant, but the significance and the ranking of the coefficients of government level variables remain the same as in Column 1.

Table 2. Impact of level of government on perceived corruption (French survey)

	1	2	3	4	5
	All	All	All	Paris	Provinces
President	2.06***		1.96***	0.87***	2.30***
	(0.086)		(0.11)	(0.22)	(0.093)
National cabinet	2.59***		2.49***	1.15***	2.88***
	(0.079)		(0.10)	(0.18)	(0.087)
Deputies	1.71***		1.61***	0.90***	1.88***
	(0.068)		(0.097)	(0.16)	(0.075)
Senators	1.22***		1.12***	0.26	1.42***
	(0.072)		(0.099)	(0.18)	(0.079)
Local governments	0.69***		0.69***	0.27*	0.78***
	(0.056)		(0.056)	(0.14)	(0.061)
Municipal governments		*Reference category*			
Distance to gov. (100 km)		0.32***	0.033		
		(0.015)	(0.023)		
$Chi^2(1)$ of Wald test for the equality of coefficients:					
President = national cabinet	86.37 ***	86.29 ***	86.29 ***	4.46 **	83.94 ***
National cabinet = deputies	232.40 ***	232.21 ***	232.21 ***	3.51 *	245.48 ***
Deputies = senators	84.81 ***	84.78 ***	84.78 ***	22.50 ***	63.94 ***
Senators = local governments	69.31 ***	23.40 ***	23.40 ***	0.00	83.31 ***
Observations	11,784	11,784	11,784	1,910	9,874
AIC	23,404.8	24,385.0	23,403.2	3,813.9	19,480.7
Log likelihood	-11,693.4	-12,187.5	-11,691.6	-1,897.9	-9,731.4

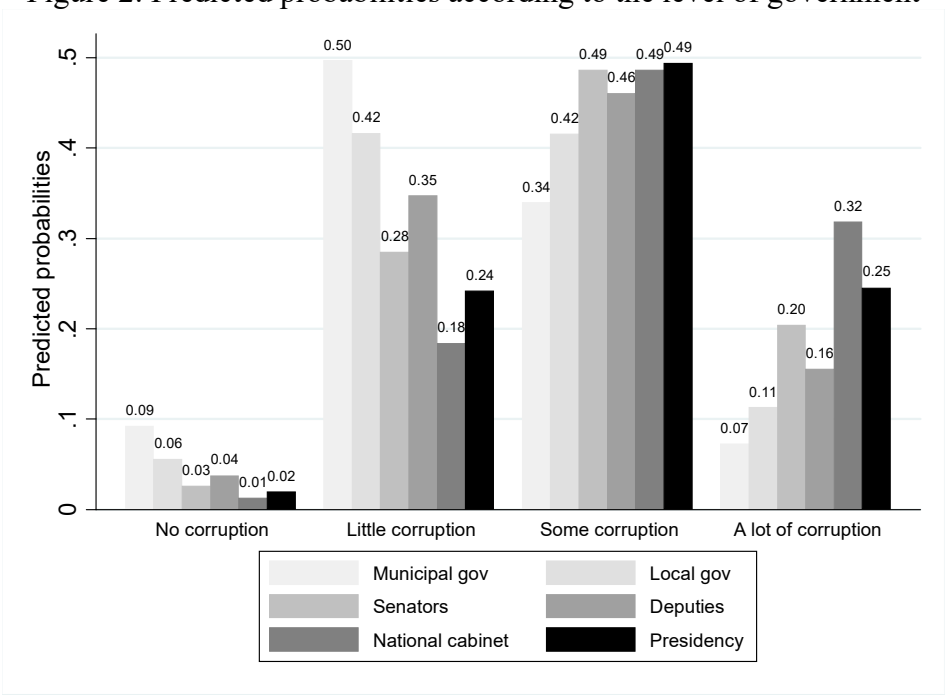
*The model is estimated as an ordered logit model with respondent fixed effect. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.*

Because Paris concentrates all the national levels of government, respondents from Paris are close to all levels of government. To make sure that this did not drive our results, we estimated separate regressions for Paris and the rest of France (Columns 4 and 5). Both regressions confirm that the two 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 is that Parisians perceive no statistically significant difference between senators and municipal governments, and little difference between the president and deputies. In addition, the gradient of perception

of corruption by level of government is steeper for provincial respondents. Although provincial respondents in general perceive more difference between levels of government, the overall rankings of levels of government by the two groups are the same.

To capture 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 of perceiving municipal governments as "a 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 levels of government. Municipal governments are the most likely to be perceived as "a little corrupt", followed by local governments, senators, deputies, and the president. The national cabinet is the least likely to be perceived as "a little corrupt".

Figure 2: Predicted probabilities according to the level of government



The probabilities are predicted at the mean values with Model 1 of Table 2.

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, 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.

4.2. ESTIMATION WITH RESPONDENTS CHARACTERISTICS

In previous estimations, we controlled for the characteristics of respondents using fixed respondent effects. This minimizes the risk of an omitted-variable bias but prevents observing the impact of specific characteristics on perceived corruption. To address this concern, we replaced fixed effects by a series of characteristics of respondents and of their municipality. We, thus, controlled for the size of the respondent's municipality of residence, the respondent's gender, age, educational level, income, professional status, political affiliation, and interest in politics. Finally, we controlled for the diffusion of the press in the department of the respondent.

There are four municipality population size categories: fewer than 2,000, from 2,000 to 20,000, from 20,000 to 100,000, and greater than 100,000. Municipalities smaller than 2,000 inhabitants are the reference category. There are five age-categories, the 18-25 year old category being the reference category. There are four levels of education, with no education being the reference category. We include a dummy variable indicating whether the respondent lives with someone else. 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. In addition, we control for the respondent's professional status, classified as "employee of private company", which is the reference category, "employer", "independent", "civil servant", "employee of public company", and "inactive".

Table 3. 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)	0.026	(0.093)
20,000 to 100,000 inhab.	0.066	(0.096)	0.071	(0.096)	0.066	(0.096)
Greater than 100,000 inhab.	0.19**	(0.078)	0.20**	(0.078)	0.20**	(0.078)
Female	0.14**	(0.062)	0.13**	(0.062)	0.14**	(0.062)
Age (« 18 – 25 » as reference):						
25 – 34 year old	0.019	(0.11)	0.036	(0.11)	0.030	(0.11)
35 – 49 year old	-0.069	(0.11)	-0.044	(0.11)	-0.062	(0.11)
50 – 64 year old	-0.22**	(0.11)	-0.18*	(0.11)	-0.21*	(0.11)
65 year old and more	-0.50***	(0.12)	-0.47***	(0.12)	-0.49***	(0.12)
Lives with someone	-0.088	(0.073)	-0.093	(0.073)	-0.086	(0.073)
Education level (« without » as reference)						
Primary	-0.069	(0.11)	-0.053	(0.11)	-0.015	(0.11)
Secondary (1st or 2nd degree)	-0.32***	(0.094)	-0.31***	(0.094)	-0.28***	(0.094)
Tertiary	-0.43***	(0.11)	-0.40***	(0.11)	-0.40***	(0.12)
Monthly income (« less than 800 € » as reference)						
800 – 1,500 €	0.037	(0.12)	0.038	(0.12)	0.043	(0.12)
1,500 – 3,000 €	0.051	(0.12)	0.066	(0.12)	0.074	(0.12)
Greater than 3,000 €	-0.051	(0.14)	-0.015	(0.14)	0.011	(0.14)
Do not know/ refuse	0.023	(0.14)	0.027	(0.14)	0.045	(0.14)
Professional status (« employee of private company » as reference)						
Employer	-0.14	(0.21)	-0.088	(0.22)	-0.078	(0.21)
Independent	-0.019	(0.18)	0.0047	(0.18)	-0.018	(0.18)
Civil servant	-0.26**	(0.12)	-0.27**	(0.12)	-0.26**	(0.12)
Employee of public company	0.26**	(0.13)	0.25**	(0.13)	0.25**	(0.13)
inactive	-0.11	(0.085)	-0.091	(0.085)	-0.088	(0.085)
Newspaper diffusion in department (per inhab.)	-1.80*	(1.02)	-1.83*	(1.03)	-1.92*	(1.03)
Political affiliation (« as left-right as right-wing » as reference)						
Rather left-wing			-0.034	(0.068)	-0.017	(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					-0.18**	(0.092)
No					0.042	(0.12)
$Chi^2(1)$ of Wald test for:						
President = national cabinet	62.89 ***		63.02 ***		62.99 ***	
National cabinet = deputies	225.81 ***		225.05 ***		224.28 ***	
Deputies = senators	81.83 ***		81.65 ***		81.99 ***	
Senators = local governments	64.44 ***		65.28 ***		64.71 ***	
Observations	11,772		11,772		11,772	
Pseudo R-squared	0.050		0.051		0.052	
AIC	26,566.8		26,543.8		26,517.5	
Log likelihood	-13,253.4		-13,239.9		-13,223.7	

*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.*

Finally, Sections 2.2 and 2.3. emphasize that the perception of corruption may be driven by the information available about elected officials. To capture that transmission channel, we control for the availability of local newspapers. Specifically, we control for the number of printed national and local daily newspapers sold in each department in the year the survey was carried out. This variable measures the diffusion of information around the respondent, notably political information.

In some specifications, we moreover control for the respondent's political affiliation, by creating a dummy variable set to one if the respondent identifies as "rather left-wing" and another set to one if he/she identifies as "rather right-wing", with respondents reporting to be "as left-right as right-wing" being the reference category. 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", "a little", or "not". The results of that estimation are reported in Table 3.

The results that we obtain for control variables are stable across specifications and sketch a consistent picture of the correlates of perceived corruption. We observe that respondents living in municipalities with more than 100,000 inhabitants tend to perceive more corruption at all levels of government, as the coefficient on municipality size is positive and significant at the 10-percent level.

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).

Since the dummies coding secondary and tertiary education are both negative and statistically significant at the 10-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 corruption and employees of public companies perceive 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.

The availability of local newspapers seems to reduce perceived corruption. Specifically, the number of printed national and local daily newspapers bears a negative coefficient. Although the coefficient is only statistically significant at the ten-percent level, it implies that more information in a respondent's department correlates with lower perceived corruption.

In Regressions 2 and 3, which 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.

Most of all, controlling for the respondents' characteristics instead of fixed effects only marginally affects the magnitude of the coefficients of our variables of interest, which all keep their sign and remain highly significant. Most importantly, the ranking of coefficients remains the same as in our baseline results. We observe the same gradient of perceived corruption over the government hierarchy. Again, the president stands out as an exception, as he is perceived as less corrupt than the national cabinet.

5. STATISTICAL DISCUSSION

5.1. ALTERNATIVE ESTIMATION METHODS

We have so far estimated our model 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.[16] 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 national cabinet 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 of the questions on corruption.[17] Although so few non-responses are unlikely to have biased our results, we considered an ordered probit model with selection to make sure that these non-responses did not impact our findings.[18] That model consists in a first equation relating the probability to answer all the six questions to respondents' characteristics and a second equation simply given by Model 1 and considering the answers as ordered

[16] We report those robustness checks and comment on them in the online appendices.
[17] Moreover, only 12 respondents failed to answer any questions on corruption at all.
[18] We report those robustness checks and comments on them in the online appendices.

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 either by the estimation method or non-responses.

5.2. ALTERNATIVE DEPENDENT VARIABLES

We have so far studied perceived corruption at each of government level without explicitly taking into account respondents' overall perception of corruption. Differences between respondents were only captured by respondent fixed effects or directly by respondent characteristics. Respondents may nevertheless differ in their sensitivity to corruption. Their assessment of corruption at different levels of government may correlate because of their general sensitivity to corruption.[19] In line with that contention, Pavão (2018) observes that a large share of Brazilian residents tends to consider corruption to be or to have become a natural feature of their country's political system. To address this possibility, we used four alternative definitions of the dependent variable, coding respondents' perception of corruption in different ways.

We obtained 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, first by the perceived corruption of the president, then by the perceived corruption of the national cabinet.[20]

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

[19] One reason may be that respondents experienced different levels of corruption abroad, for instance before migrating to France, resulting in different reference points.
[20] We describe, report, and comment on those robustness checks in online appendix.

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 cabinet. 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 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 "a 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.

5.3. TRUST AND PERCEIVED CORRUPTION

Perceived corruption and trust tend to correlate, which means that our dependent variable could suffer from a measurement issue. Linde and Erlingsson (2013) show that Swedish citizens who perceive politicians as more corrupt also tend to express discontent with the way the democratic system works. Likewise, Whiteley et al. (2015) observe that the perceived honesty of government by citizens reacts to their perception of economic conditions, which may affect the perception of both corruption and trustworthiness. One may therefore suspect our dependent variable to actually capture trust in the government, especially as statements in surveys are costless and therefore subject to expressive behavior as defined by Hillman (2010).

The dataset enables us to check that possibility. It features a series of questions assessing the respondents' trust in mayors, who are the executive heads of municipal government,

deputies, political parties in general, and public administration. The wording of the question is "To what extent, do you trust the following organization?". Respondents could reply by "completely", "somewhat", "a little", and "not at all". Even if we have a direct measure of trust for only two government levels, we can use them to check to what extend trust in politicians and political organizations correlates with perceived corruption and affects our main result.

First, we can note that the Spearman coefficients of correlation range from 0.12 to 0.29, which is small. One may also underline the consistence of the answers given by the respondents for trust and corruption.

Table 4. Simple correlation between perceived corruption and various measures of trust

Trust in Perceived corruption of	Political parties	Public administration	Mayor (municipal gov)	Deputies
President	-0.22	-0.16	-0.19	-0.24
National cabinet	-0.24	-0.20	-0.22	-0.29
Deputies	-0.20	-0.16	-0.19	-0.27
Senators	-0.16	-0.17	-0.22	-0.24
Local governments	-0.17	-0.12	-0.20	-0.17
Municipal governments	-0.12	-0.15	-0.27	-0.16

Trust is measured with the question "To what extent, do you trust the following organization?". Respondents could reply by "1. not at all", "2. a little", "3. somewhat", "4. completely". Given the ordered polynomial nature of the variables, the coefficient of correlation is the Spearman coefficient. All coefficients are significantly different from zero at 0.001% threshold.

Second, we successively complement the baseline regression by including dummy variables coding the answers to the question about trust in political parties, public administration, mayors, and deputies. They are reported in Columns 1 to 4 of Table 5. Finally, in Column 5, we simultaneously include the simple log transformation of each of the four variables into the specification.[21]

[21] The items take the following values: "trust completely" takes the value 4, "trust somewhat" the value 3, "trust a little" the value 2, and "does not trust at all" the value 1.

Table 5. Perceived corruption and trust

	(1)		(2)		(3)		(4)		(5)	
	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)	Coef.	(s.e.)
President	1.51***	(0.064)	1.50***	(0.064)	1.51***	(0.064)	1.52***	(0.065)	1.52***	(0.065)
National cabinet	1.84***	(0.058)	1.84***	(0.058)	1.85***	(0.059)	1.86***	(0.059)	1.87***	(0.059)
Deputies	1.22***	(0.050)	1.22***	(0.050)	1.23***	(0.050)	1.23***	(0.051)	1.24***	(0.051)
Senators	0.87***	(0.053)	0.87***	(0.052)	0.88***	(0.053)	0.88***	(0.053)	0.89***	(0.054)
Local governments	0.50***	(0.041)	0.50***	(0.041)	0.50***	(0.041)	0.50***	(0.042)	0.50***	(0.042)
Municipal governments	*Reference category*									
Trust level in	Political parties		Public administration		Mayor (municipal gov)		Deputies			
Completely	*Reference category*									
Somewhat	-0.53	(0.43)	0.042	(0.14)	0.16	(0.097)	-0.13	(0.29)		
A little	-0.21	(0.42)	0.42***	(0.14)	0.63***	(0.10)	0.33	(0.28)		
Not at all	0.42	(0.42)	0.98***	(0.16)	1.48***	(0.14)	1.05***	(0.29)		
Log trust in political parties									-0.43***	(0.16)
Log trust in public administration									-0.22**	(0.10)
Log trust in mayor									-0.55***	(0.086)
Log trust in deputies									-0.74***	(0.14)
$Chi^2(1)$ of Wald test for:										
President = national cabinet	62.88 ***		65.50 ***		64.90 ***		67.22 ***		66.89 ***	
National cabinet = deputies	227.35 ***		226.33 ***		223.79 ***		227.93 ***		227.55 ***	
Deputies = senators	80.73 ***		82.97 ***		82.92 ***		80.74 ***		81.20 ***	
Senators = local governments	64.90 ***		64.93 ***		67.10 ***		65.78 ***		66.90 ***	
Observations	11,772		11,772		11,772		11,772		11,772	
Pseudo R-squared	0.067		0.063		0.072		0.073		0.075	
AIC	26,118.5		26,224.1		25,978.7		25,940.6		25,874.7	
Log likelihood	-13,021.27		-13,074.06		-12,951.36		-12,932.29		-12,898.36	

*The model is estimated as an ordered logit model. The specification contains respondents' characteristics instead of fixed effects and is the third (with all the proposed variables) as detailed in Table 3 of the text. Standard errors are clustered by respondent. *, **, and *** indicate significance at a level of 10%, 5%, and 1%, respectively. Standard errors in parentheses.*

We observe no correlation between the level of trust in political parties and the perception of corruption in Column 1, as the dummy variables coding trust are all statistically significant. However, in line with the presumption that perceived corruption may be a symptom of a lack of trust in public officials, we observe that respondents who declare a lower trust in the administration, in mayors, and in deputies also report more perceived corruption in general, as the coefficient of the dummy variables coding lower trust (namely "trust a little" or "does not trust at all") are positive and statistically significant . The result obtained when the variables are transformed and included jointly into the specification are similar. The coefficients of all variables are also positive statistically significant at the one-percent level. Accordingly, an increase in trust is associated to a decrease in perceived corruption.

However, regardless of the trust variables included and of their correlation with perceived corruption, our baseline finding is unaffected. Specifically, the coefficients of the dummy variables coding government levels all remain positive and statistically significant at the one-percent level and stay remarkably close to their baseline estimates. In other words, although it correlates with perceived corruption, controlling for trust does not affect the ranking of government levels in terms of perceived corruption.

5.4. CONDITIONING THE EFFECT ON POLITICAL PREFERENCES, INTEREST IN POLITICS, GENDER, AND EDUCATION

The perception of corruption may differ between left- and right-wing citizens. Anderson and Tverdova (2003) and 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.[22] In addition, they may read newspapers with different political-leanings displaying a bias towards reporting corruption scandals involving politicians of the parties that they do not endorse, as Puglisi and Snyder (2011) report. As, at the time of the survey, president Jacques Chirac, the national cabinet, led by Dominique de Villepin, the Senate, 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, as well

[22] As a result, corruption may be lower in more polarized constituencies, as Melki and Pickering (2020) observe for US states, because officials are scrutinized more minutely by their opponents.

as 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 6a.[23]

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, as well as 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 panel of Table 5a.

[23] Admittedly, this is only a second-best strategy. We would have preferred to measure the political affiliation of each mayor and the share of left- and right-wing members in each assembly. Doing so would, however, be difficult, not only because data collection would be resource-intensive but most of all because a large number of local politicians, mayors in particular, are officially affiliated to no political party and can accordingly not be placed on the political spectrum.

Table 6a. Impact of government level on perceived corruption: Conditional on respondents' political preferences and interest in politics

	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 gov.	*Reference category*						
Respondent fixed effect	yes	yes	yes	yes	yes	yes	Yes
$Chi^2(1)$ of Wald test for the equality of coefficients							
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. LW and RW stand respectively for Left-wing and Right-wing.*

Table 6b. Impact of government level on perceived corruption: Conditional on respondents' gender and education

	Gender		Education level			
	1	2	4	5	6	7
	Male	Female	No degree	Primary	Secondary	Higher
President	1.70***	2.42***	2.23***	2.52***	2.02***	1.71***
	(0.12)	(0.12)	(0.19)	(0.23)	(0.13)	(0.20)
National cabinet	2.19***	2.99***	2.87***	3.23***	2.60***	1.89***
	(0.11)	(0.11)	(0.17)	(0.22)	(0.12)	(0.18)
Deputies	1.54***	1.88***	2.02***	2.21***	1.70***	1.13***
	(0.096)	(0.097)	(0.16)	(0.19)	(0.100)	(0.14)
Senators	0.95***	1.50***	1.51***	1.57***	1.22***	0.75***
	(0.10)	(0.10)	(0.17)	(0.20)	(0.10)	(0.16)
Local gov.	0.69***	0.70***	1.00***	0.83***	0.56***	0.67***
	(0.081)	(0.078)	(0.15)	(0.15)	(0.078)	(0.12)
Municipal gov.			*Reference category*			
Respondent fixed effect	yes	yes	yes	yes	yes	yes
$Chi^2(1)$ of Wald test for the equality of coefficients						
President = national cabinet	34.54 ***	53.06 ***	22.29 ***	23.62 ***	48.22 ***	1.86
National cabinet = deputies	63.41 ***	183.14 ***	40.31 ***	46.76 ***	118.12 ***	29.17 ***
Deputies = senators	63.56 ***	25.58 ***	16.37 ***	21.56 ***	39.21 ***	10.20 ***
Senators = local governments	7.91 ***	79.18 ***	13.22 ***	19.08 ***	50.45 ***	0.30
Observations	5,563	6,221	2,111	1,845	5,591	2,225
AIC	11,444.2	11,894.3	4,289.9	3,494.2	11,110.6	4,434.8
Log likelihood	-5,713.1	-5,938.2	-2,135.9	-1,738.1	-5,546.3	-2,208.4

*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. LW and RW stand respectively for Left-wing and Right-wing.*

The table shows 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 political interest reported by 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.

Swamy et al. (2001) report micro- and cross-country evidence that women differ from men in that women less frequently engage in corruption and more frequently condemn it 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. Therefore, we estimated gender-specific regressions, which are reported in the left panel of Table 4b. The results obtained for the two genders differ little. Most importantly, we observe the same ranking of government levels.

Finally, the perception of corruption may differ for respondents with different levels of education, as Melgar et al. (2010) observe. Moreover, better educated respondents may have a clearer understanding of the prerogatives of each government level. The ranking of government levels may accordingly differ for respondents with different levels of education. We therefore estimate our main specification separately for respondents who report having no degree, those who have completed primary education, those who have completed secondary education, and those who hold a higher education degree (right panel of Table 6b).

For each of the four levels of education, we still observe the same result: perceived corruption increases with the position of a government level in the hierarchy. The only change is that respondents with the highest level of education seem to make no significant difference between the President and national cabinet, on the one hand, and between Senators and local

governments, on the other hand (Column 7 of Table 6b). This finding echoes the finding for respondents with the highest interest for politics.[24]

To sum up, our finding that perceived corruption is larger for higher levels of government is not conditional on respondents' characteristics.

6. AN EXTENSION TO OTHER COUNTRIES

In some ways, France could be a special case. At the time of the survey, in 2006, it ranked 19th on Transparency International's corruption perception index. As a Western country it was therefore considered moderately corrupt and ranked between Japan and Ireland and before the United States. Secondly, it is particularly centralized. Finally, it is paradoxical, as Bezes and Lascoumes (2005) point out, as its citizens are prone to consider their public officials as corrupt but nevertheless reelect them.

To see whether our findings apply to other countries, i.e. in other institutional, political and cultural contexts, we used the data from the Making Electoral Democracy Work project, which provides comparable information on perceived corruption in several countries around various elections between 2011 and 2015, which enables us to control for time fixed effects (Blais et al. 2015). It unfortunately only covers two regions in each country and only three government levels, which is why we only use it as a complement of the more detailed French dataset. We must also emphasize that this survey like the previous one also measures the perception of respondents but not actual corruption. We estimated Model 1 on each country separately, then pooled all observations in a single regression with country fixed effects.

[24] We complemented the four sets of conditional regressions by another where we distinguish respondents according to their income level (see online appendix A5). Once again, the ranking of government levels is identical to the previous ones for all income groups. Together with the finding that the ranking is not conditional on education, it suggests that the main dependent variable does not capture a distrust or rejection of the elite, because it would imply differences in the ranking of government levels in terms of perceived corruption across respondents with different levels of education or income. Again, we cannot and do not claim that we can rule out that elite rejection affected answers, but that it was not substantial enough to overweigh the impact of institutional distance.

Table 7. Impact of government level on perceived corruption in other countries (Making Electoral Democracy Work project dataset)

	1	2	3	4	5
	France	Canada	Germany	Switzerland	Overall
National cabinet	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	no [§]	yes
Respondent fixed effect	yes	yes	yes	yes	yes
$Chi^2(1)$ of Wald test for the equality of coefficients:					
national cabinet = regional 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.*

[§] The specification for Switzerland does not include date dummies, because the data is available for one year only.

The data includes Canada in 2011, 2012, and 2015, Germany in 2013 and 2015, Switzerland in 2011, in addition to France in 2012 and 2014.[25] Perceived corruption is available at the municipal, regional, and national levels. Specifically, the dataset reports data on municipalities, regions, and the national cabinet 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.[26] We defined government level dummies accordingly. We first estimated Model 1 on each country separately, and we then pooled all observations in a single regression with country fixed effects. The results of those regressions are reported in Table 7.

[25] In 2012, Switzerland ranked 4th, Canada 10th, Germany 12th, and France 27th on Transparency International's corruption perception index. In 2015, France ranked 26th whereas the other three countries had kept their rank.

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

For France, we observe that both dummies coding government levels are positive and statistically significant at the one-percent level. The coefficient of the national cabinet is now smaller than that of the regional government, which contrasts with our baseline results. However, the two coefficients cannot be distinguished at the one-percent level of significance. The difference between this and previous results may stem from the fact that the MEDW dataset only considers three levels of government, instead of six, or only two regions, instead of 21. In other words, this slightly different result could be driven by regional specificities and contexts.

In regressions specific to other countries or pooling all countries together, we nonetheless again observe that the government-level dummies are always positive and statistically significant at the one-percent level, and that the magnitude of the coefficient of the national cabinet dummy is larger than that of the regional government level dummy. Accordingly, 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. Our main finding therefore applies to other countries.

This finding is important because, unlike France, Canada, Germany, and Switzerland are federal countries. Finding that they display a similar rankings of government levels in terms of perceived corruption as France implies that is not driven by France's very high level of centralization. On the contrary, the ranking of perceived corruption is unrelated to the degree of decentralization.

7. CONCLUSION

We observe that the perceived degree of corruption at a given level of government is higher the higher its rank in the government hierarchy. Specifically, when studying the answers of French citizens to a survey where they were asked to assess corruption at all levels of government, 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. It is independent from respondents' stated political preferences, from their level of education, from their gender, and from their interest in politics, despite the latter being correlated with the level of corruption they perceive for all levels of government. Moreover, the effect of institutional distance on perceived corruption is independent from the effect of geographic distance. Although, geographic distance to each level of government as such increases perceived corruption, controlling for it hardly affects the estimated impact of institutional distance on perceived corruption.

Our main conclusion is not limited to France. Using an alternative dataset, we compared corruption perceived at different government levels in four countries with different degrees of decentralization. We observed the same gradient of perceived corruption across levels of government, although the dataset has a more limited number of government levels to consider.

Our results may explain why fiscal decentralization correlates with lower degrees of perceived corruption (Huther and Shah, 1998; Fisman and Gatti, 2002; Arikan, 2004; Fan et al., 2009; and Choudhury, 2015): By giving more power to the levels of government that are perceived as less corrupt, decentralization may reduce aggregate perceived corruption. We reach that conclusion using a new methodological approach that compares perceived corruption at different levels of government within the same country, instead of comparing perceived corruption across different countries with different degrees of decentralization.

Our approach allows us to be more specific about the chances of decentralization affecting corruption in the desired way. Finding that lower levels of government are perceived as less corrupt implies that decentralization may reduce perceived corruption implying a drop in corruption if the perception of corruption reflects actual corruption. However, the levels of

government that can engineer decentralization, typically the higher levels, are also perceived as the most corrupt. They would therefore likely lose from decentralization and would avoid decentralizing, lest it reduces their capacity to obtain perks. Their reluctance to decentralize may thus contribute to the persistence of corruption. Our empirical findings accordingly suggest a new explanation of the persistence of political corruption.

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 may be in line in our sample, determining the relationship between them 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.

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Politicians at higher levels of government are perceived as more corrupt (Online appendix)

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In this appendix, we first present the French various government levels before reporting a series of robustness checks of our empirical results. Secondly, we use two alternative estimation methods: ordinary least squares and a model with selection that allows to take non-responses into account. Third, we use alternative definitions of the dependent variable to determine the extent to which our results are sensitive to the coding of perceived corruption. In the fourth section, we elaborate on the geographical dimension of institutional distance, while we distinguish respondents according to their income level in the last section.

A.1. THE FRENCH LEVELS OF GOVERNMENT

Each French government level corresponds to a distinct constituency, a distinct geographic area, and a distinct function, as summarized by table A1. The lowest government level is the municipal government. It consists in the municipal council which is elected in a two-round list vote. The "local governments" category in the survey question pools *Conseils Généraux* and *Conseils Régionaux*.[27] *Conseils Généraux* are the assemblies of departments whose members are elected through a FPTP two-round ballot in districts consisting of several municipalities named "cantons."[28] The members of *Conseils Régionaux* are elected in a two-round list vote in regions. At the time of the survey, there were 94 *Conseils Généraux* in mainland France (excluding the two Corsican departements), 82 of which are present in our

[27] They match with, respectively, the NUTS1 and NUTS2 levels of the European nomenclature.
[28] Except for large municipalities, which can contain several cantons.

sample. At the time of the survey, there were 21 *Conseils Régionaux* in mainland France (excluding the Corsica region), all of which are in our sample.[29]

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 constituencies in the national legislative body, but they 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. Senators are elected using a FPTP two-round election in departments with fewer than three senators and a proportional list system elsewhere. Deputies are elected in a FPTP two-round election.

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, since 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 perceived corruption and institutional distance.

The last two questions of the survey 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.

[29] Although Corsica is an island, it is officially considered a part of mainland France. We, however, do not count it in here because of its geographic and institutional specificities.

Table A1. Summary information about French government level

Government level in the survey	French name	Voting system	Electoral constituency	Ruling constituency	Number of gvt represented in our survey out of overall
President	*Président de la République*	Two-round FPTP	Nation	Nation	1 / 1
National cabinet	*Gouvernement national*	appointment	-	Nation	1 / 1
Deputies	*Députés*	Two-round FPTP	Legislative constituency (at least 2 by department)	Nation (lower house)	no information / 555
Senators	*Sénateurs*	Two-round FPTP and PR*	Local elected politicians by department	Nation (upper house)	no information / 331
Local governments	*Conseil Régional*	Two-round plurinominal voting	Region	Region (*Région*)	21 / 22**
	Conseil Général	Two-round FPTP	Canton (part of department)	Department (*Département*)	82 / 96
Municipal governments	*Conseil municipal*	Two-round plurinominal voting	City	City (*Commune*)	421 / 36,571

** : FPTP two-round election in departments with fewer than three senators and a proportional list system elsewhere*
*** : Corsica is not represented in our survey.*

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

A.2. ALTERNATIVE ESTIMATION METHODS

In our baseline specification, we estimate our empirical model using an ordered logit model. To make sure that our results were not driven by the estimation method, we first use ordinary least squares instead. We then estimate an ordered probit model with selection to take non-responses into account.

To estimate our model 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, as we did 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.

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 importantly, 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 an OLS model instead of an ordered *probit* model.

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	
R^2 within	0.17		0.17	
R^2 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.*

In our baseline estimations, we do not consider non-responses, because only 9% percent of respondents did not answer all of the questions on corruption.[30] Although so few non-responses are unlikely to have biased our results, we now consider an ordered probit model with selection to make sure that those non-responses did not impact our findings. The model consists in a first equation relating the probability to answer all six questions on corruption to respondents' characteristics and a second equation simply given by Model 1 and considering the answers as ordered variables conditional on the probability to give all the answers. Table A3 reports the results of that estimation.

[30] Moreover, only 12 respondents failed to answer any questions on corruption at all.

Table A3. Taking non-responses into account: 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)
Greater 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)
Greater 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) : $Chi^2(1) = 0.01$ 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.*

The right-hand side panel of table A3 reports the results of the first-step of the model, which relates the probability of providing 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 of answering 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 the baseline estimations. Specifically, they increase monotonically up to the national cabinet. The coefficient of the president dummy is smaller than that of the national cabinet dummy but larger than any other dummy.

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 affected neither by the estimation method or non-responses.

A. 3. ALTERNATIVE DEPENDENT VARIABLES

We have so far studied perceived corruption at each government level without explicitly taking into account respondents' overall perception of corruption. Differences between respondents were only captured by respondent fixed effects or by respondent characteristics. Respondents may nevertheless differ in their sensitivity to corruption and their assessment of corruption at different levels of government correlate because of their general sensitivity to corruption. In line with that contention, Pavão (2018) observes that a large share of Brazilian residents tends to consider corruption to be or to have become a natural feature of their country's political system. To address this possibility, we use four alternative definitions of the dependent variable, coding respondents' perception of corruption in different ways.

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, respectively 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 either the president or the cabinet can take 11 different values ranging from 0.25 to 4.

Table A4. Transformation of corruption scores

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

The other two alternative variables are based on another question of the survey designed to gauge respondents' more general perception of corruption: "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 (see Table A4). 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 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 methods, described in Table A4. 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.

Table A5 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 at the various government levels are 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.

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

Table A5. 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.*

A.4. GEOGRAPHIC VS. HIERARCHICAL DISTANCE

One of the key findings of our baseline estimations is that hierarchical distance does not conflate geographic distance. We show that controlling for geographic distance to the relevant government level and running specific regressions for Paris and the Provinces does not drive our results.

Table A6. Impact of government level on perceived corruption: conditional on municipality size

	By size of the municipality				
	1	2	3	4	5
	Fewer than 2,000	2,000 to 20,000	20,000 to 100,000	Greater than 100,000	Paris
President	2.80***	2.59***	1.79***	1.99***	0.87***
	(0.16)	(0.22)	(0.23)	(0.16)	(0.22)
National cabinet	3.23***	3.31***	2.37***	2.63***	1.15***
	(0.17)	(0.21)	(0.21)	(0.14)	(0.18)
Deputies	2.44***	2.22***	1.45***	1.44***	0.90***
	(0.14)	(0.18)	(0.18)	(0.12)	(0.16)
Senators	1.89***	1.94***	0.88***	0.99***	0.26
	(0.14)	(0.19)	(0.19)	(0.13)	(0.18)
Local governments	1.33***	1.00***	0.35***	0.40***	0.27*
	(0.12)	(0.14)	(0.13)	(0.10)	(0.14)
Municipal governments	*Reference category*				
Respondent fixed effect	yes	yes	yes	yes	yes
$Chi^2(1)$ of Wald test for the equality of coefficients					
President = national cabinet	12.79 ***	27.12 ***	12.63 ***	35.54 ***	4.46 **
National cabinet = deputies	40.30 ***	55.54 ***	36.68 ***	122.29 ***	3.51 *
Deputies = senators	26.22 ***	4.52 **	15.06 ***	21.01 ***	22.50 ***
Senators = local governments	20.44 ***	31.63 ***	10.32 ***	23.28 ***	0.00
Observations	2,854	1,976	1,573	3,471	1,910
AIC	5,659.3	3,875.8	3,111.3	6,793.7	3,813.9
Log likelihood	-2,820.7	-1,928.9	-1,546.7	-3,387.9	-1,897.9

*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.*

To make sure that our results were not driven by an urban-rural divide, we now run specific regressions by municipality size categories. Specifically, we ran a specific regression for each municipality size from rural municipalities to Paris, considering four population categories: fewer than 2,000, 2,000 to 20,000, 20,000 to 100,000, and greater than 100,000. Paris is excluded from the larger category.

Those regressions are reported in Table A6. They display the same ranking of perceived corruption for government levels across sizes of municipalities.

A.5. CONDITIONAL EFFECT OF RESPONDENT'S INCOME

One of the key findings of our baseline estimations is that our results are not conditional on respondents' political or socio-demographics characteristics. In addition to those results, we test here whether the findings may be conditional on respondents' income level. Table A7 displays the estimates of our baseline specification for the five income categories recorded by the survey.

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

	Respondent's income level				
	1	2	3	4	5
	Less than 800 €	Betw. 800 and 1500 €	Betw. 1500 and 3000 €	More than 3000 €	Refuse / do not know
President	2.11***	2.20***	2.15***	1.86***	1.66***
	(0.27)	(0.17)	(0.14)	(0.23)	(0.26)
National cabinet	2.66***	2.75***	2.86***	1.95***	2.20***
	(0.25)	(0.16)	(0.13)	(0.20)	(0.24)
Deputies	1.87***	1.82***	1.83***	1.31***	1.49***
	(0.21)	(0.14)	(0.11)	(0.17)	(0.20)
Senators	1.44***	1.29***	1.36***	0.95***	0.81***
	(0.23)	(0.14)	(0.12)	(0.18)	(0.20)
Local governments	0.71***	0.80***	0.68***	0.77***	0.40***
	(0.18)	(0.11)	(0.093)	(0.14)	(0.15)
Municipal governments	*Reference category*				
Respondent fixed effect	yes	yes	yes	yes	yes
$Chi^2(1)$ of Wald test for the equality of coefficients					
President = national cabinet	10.28 ***	22.78 ***	55.06 ***	0.32	10.75 ***
National cabinet = deputies	20.66 ***	71.24 ***	111.16 ***	17.40 ***	18.13 ***
Deputies = senators	8.64 ***	25.32 ***	26.68 ***	6.90 ***	23.93 ***
Senators = local governments	12.89 ***	15.83 ***	40.50 ***	1.22	5.75 **
Observations	1,257	3,122	4,307	1,710	1,388
AIC	2571.4	6,193.2	8,440.7	3,469.3	2,732.4
Log likelihood	-1,276.7	-3,087.6	-4,211.3	-1,725.6	-1,357.2

*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.*

We clearly observe no deep changes in our conclusion. Specifically, we still observe that perceived corruption increases with the position of a government level in the hierarchy of institutions regardless the level of income.

REFERENCES OF THE APPENDICES

De Luca, G., and Perotti, V. (2011). "Estimation of Ordered Response Models with Sample Selection", *The Stata Journal*, *11*(2), 213–239.

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