Corporate Donations and Political Rhetoric: Evidence from a National Ban*

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April 4, 2022

Abstract

Do campaign finance regulations influence politicians? We study the effects of a French ban on corporate donations passed in 1995. We use a difference-in-differences approach and a novel dataset combining the campaign manifestos issued by every candidate running for a seat in the French parliament with detailed data on their campaign contributions. We show that banning corporate donations discourages candidates from advertising their local presence during the campaign, as well as economic issues. The ban also leads candidates from non-mainstream parties to use more polarized language. These findings suggest that private donors shape politicians' topics of interest, and that campaign finance reforms may affect the information made available to voters through their impact on candidates' rhetoric.

Keywords: Elections, Campaign finance, Corporate donations, Campaign manifestos, Political rhetoric, Text analysis
JEL No: D72, P48, H7

*This paper was previously circulated under the title "Money and Ideology: Evidence from Candidate Manifestos". We thank André Blais, Ernesto Dal Bó, Frederico Finan, Jean-François Godbout, Romain Lachat, Maria Petrova, Charles Louis-Sidois, Hye Young You, seminar participants at ETH Zurich, HEC Montréal, the LIEPP (Sciences Po Paris), the Montreal Methods Workshop, the Princeton Political Economy Workshop, the University of Montreal, the Nottingham Interdisciplinary Centre for Economic and Political Research, as well as conference participants at the 2020 APSA Meeting, the 2021 IEB Political Economy Workshop, the IGIER Conference on Political Economy of Power Relations, and the LACEA Annual Meeting for their very helpful comments and suggestions. Mathieu Dubois, Yann David, Marie Lecoeur, and Romane Surel provided outstanding research assistance. This research was generously supported by the Institute for New Economic Thinking (grant INO1800004), the Banque de France Sciences Po partnership, and the Research Office at HEC Montréal. All remaining errors are our own.

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1 Introduction

Do campaign finance regulations influence political discourse? In this paper, we investigate the impact of banning corporate donations on the content of candidates' campaign communication. While many papers investigate the link between campaign spending and electoral success (Levitt, 1994; Ansolabehere et al., 2003) and study the returns that firms can expect on their donations (Bombardini and Trebbi, 2011; Boas et al., 2014; Avis, 2020), the existing literature on special interest groups has overlooked the relationship between contributions and political speech. However, before political donations can influence the outcome of an election and the behavior of elected politicians, they are likely to affect the way in which candidates conduct their campaigns, the ideas they highlight during the electoral season and, consequently, the information that is provided to voters before they vote.

This article is the first to study the effects of a large campaign finance reform on political discourse. Its contribution is twofold. First, we combine a difference-in-differences approach with computational text analysis to investigate whether a national ban on corporate donations affects the content of candidates' communication with voters during the electoral season. The reform we study is an unanticipated ban on campaign contributions from legal entities (or "corporate donations") that was passed in France in 1995. Since a large share of corporate donations before the ban came from small firms with locally based activity, we shed new light on the influence of geographically-rooted donations on political rhetoric. Second, we contrast our empirical findings with existing theories of campaign finance and discuss the possible mechanisms behind politicians' rhetorical responses to donations.

To perform this analysis, we construct a novel dataset that combines data from several sources and compiles information from electoral campaigns both before and after the 1995 ban. First, we collect data on the amount and source of the donations received by every candidate running for a seat in the French parliament in 1993 and 1997. We use detailed information on candidate's campaign revenue from Bekkouche et al. (2022), including the amount of corporate donations received by the 5,000 candidates running in 1993: this was the last election held before the 1995 national ban. We merge these data with the content of campaign manifestos, which all individual candidates may issue before the election and which are then mailed to registered voters by the State. These two-page documents represent a systematic record of politicians' communication with voters, and surveys depict manifestos as a popular medium: in 2017, manifestos were cited as often as online media by respondents who were asked how they learned about their candidates (OpinionWay, 2017).[1] Importantly, they are distributed only a few days before the election, after most fundraising and campaign

[1] More precisely, 24% of citizens declared that they counted manifestos among the three most important ways of gathering information about candidates. One might expect these manifestos to be of even greater importance in the 1990s, before the democratization of the Internet.

spending has finished. For this paper, we use the manifestos issued before the 1993 election from Le Pennec (2020), and collect an entirely new corpus of manifestos issued before the 1997 election from paper archives. Our final dataset contains more than 10,000 manifestos. We complement this candidate-level dataset with data on electoral results, as well as the legislative activity of elected representatives. Specifically, these include the representatives' written questions issued to bring their constituents' concerns to the government's attention, and their interventions during legislative debates. Finally, we collect further information on each contributing corporate donor in 1993, including their identity, sector of activity, and donation patterns. More than 80% of the donors in our sample are "small" donors who make a single contribution. Among larger donors who give to multiple candidates, only 28% give to candidates endorsed by the same party, while others are non-partisan donors who give to multiple parties.

Next, we exploit the fact that before the ban candidates' reliance on corporate donations varied significantly. Since contributions are not randomly allocated across candidates, estimating the causal effect of eliminating corporate donations from a candidate's campaign accounts requires an identification strategy that handles their endogenous nature. In 1993, about one third of all candidates running for French legislative elections received at least one donation from a corporate entity. We adopt a difference-in-differences approach to estimate the average effect of losing these donations for those candidates who previously relied on corporate donations. We control for the candidate characteristics that predict corporate donations (such as gender and incumbency status), as well as candidate and party-year fixed effects to capture selection on unobservables. In particular, our within-candidate approach ensures that the estimated effect of losing corporate donations is not confounded by the "better" (time-invariant) communication skills of candidates who received a number of corporate donations before the ban, as compared to others. Further, we confirm our results with a nearest-neighbor matching estimator, thereby accounting for all observable differences between "treated" and "control" candidates.

We find that banning contributions from corporate donors leads the treated candidates to run a more national and, for some, a more partisan campaign. Our outcomes of interest are constructed using various methods of computational text analysis. In particular, we measure a candidate's propensity to focus on local issues as opposed to national one, the polarization of their rhetoric on the left-right scale, and the prevalence of different policy topics in their discourse. Each of these measures represents a dimension of language that individual politicians have control over and that may be adjusted in response to changes in campaign finance regulations. These adjustments, although measured in manifestos exclusively, are likely to reflect changes in candidates' overall rhetoric, including campaign messages sent through other media.

We show that candidates who lose more corporate donations as a result of the ban tend to de-emphasize their local presence in their campaign communication strategies. This effect is both statistically significant and economically meaningful: according to our estimates, a one-standard-deviation decrease in the amount of corporate donations received by a candidate decreases the relative prevalence of local references over national politics in their campaign manifesto by 16% of a standard deviation. The effect is mainly driven by a decrease in the frequency of local references (e.g., the names of municipalities in the district) but we also observe an increase in the frequency of national references (e.g., national party organizations or prominent politicians).

We further investigate heterogeneity across parties and find that the impact of banning corporate donations on the prevalence of local references is negative for the five main political parties.[2] However, it is particularly strong for candidates running as independents, and for candidates affiliated with "niche" and radical parties in our sample. Next, while we do not observe any significant effect on discourse polarization for mainstream parties, we show that losing corporate donations also pushes marginal candidates to adopt more extreme language on the left-right scale. Turning to the policy topics covered in the manifestos, we find evidence that losing donations pushes candidates to drop local economic issues from their communication strategies (such as construction and amenities or retail) in favor of social issues or foreign policy. Once again, these effects are stronger for independent candidates and candidates from niche parties. These heterogeneous effects suggest that small candidates with virtually no chance of winning the election are those who respond the most strongly to the ban on corporate donations.

We consider and discuss several mechanisms that could rationalize these empirical findings and argue that losing donations has an "electoral effect" on candidates. Fundraising activities increase the salience of donors' concerns and incentivize candidates to address those during the campaign in order to secure donors' support and their votes. Without corporate donations, candidates no longer have the nudge to address certain topics (such as local economic issues), and may resort to an easier communication strategy focused on national politics. This effect is particularly significant for marginal and radical candidates who are less likely to run a local and moderate campaign instead of advertising their strong ideological positions, unless they are nudged to do so.

We conduct a series of tests to examine whether alternative mechanisms could also be at play and find evidence against each of them. First, banning corporate donations could decrease the prevalence of local issues in electoral discourse because of a "resource effect": a decreased campaign revenue, no matter the origin of the loss, may prevent politicians from

[2]The Communist party, the Green party, the Socialist party, the right-wing conservative party ("Rassemblement pour la R´epublique"), and the far-right party ("Front National").

running a high-quality campaign focused on local issues and tailored to their local electorate. Yet, this interpretation is inconsistent with the observed heterogeneity across different types of donors: the negative impact of banning donations on the prevalence of local references is particularly strong for small and non-partisan donors, while it is positive and not significant for partisan donors who give to multiple candidates of the same party. We also show that although there is some substitution between corporate donations and other sources of funding (especially party contributions), our estimated impact captures the effect of losing corporate donations specifically, as opposed to the effect of receiving more contributions from other sources. We conclude that money is not neutral: the identity of the contributor matters.

Next, corporate donors may expect a return on their (service-induced) donations. If candidates "pay back" their campaign donors after the election, we expect the ban on corporate donations to primarily affect the discourse and legislative activity of the elected politicians in power. However, we do not find any significant impact of banning corporate donations on either the quantity or the content of questions to the government and debate interventions among elected representatives, and thus cannot conclude that politicians in office cease favoring their corporate donors once they can no longer donate.[3] Hence, while we cannot rule out the existence of some "quid-pro-quo effect" between corporate donors and politicians, such a mechanism is unlikely to drive *all* of the candidates' rhetorical responses to the ban on corporate donations. Instead, our results highlight the role of candidates' perceptions and the salience of different issues during the campaign season. The existence of such an "electoral effect" has been overlooked in the existing literature and suggests that connections with private donors may affect politicians' behavior, even when donors do not expect any particularized benefits.

Finally, we show that our results are robust to the use of a number of different specifications. In particular, we find that the magnitude and statistical significance of these results do not vary when we introduce district times year fixed effects or when we control for additional time-varying district-level factors (including measures of the state of the economy at the district level, such as the change in the unemployment rate). They are also robust to controlling for differential time trends across candidates with different characteristics (including the characteristics that predict different levels of donations). Despite our attempts to control for both many observable factors and for time-invariant unobserved factors, we acknowledge that our estimates might still be driven by time-varying unobserved covariates correlated with corporate donations received before the ban. But even though we cannot ultimately separate the effect of the ban from other confounding factors, a causal interpretation of the results is plausible. Importantly, although testing for our identification assumption based on parallel trends

[3]Note that French MPs are supposed to represent the *general* interest and not the *specific* interest of their constituency, perhaps limiting the scope of any quid-pro-quo effect in the context of our study.

is challenging, due to the timing of campaign finance reforms and limited data availability, we provide suggestive evidence that corporate donations received in 1993 are uncorrelated with past trends in local prevalence.

Literature review This paper contributes to various strands of the literature. First, we contribute to the campaign finance literature that studies the impact of political donations. This literature has mostly focused on the effect of contributions and campaign spending on electoral results (see among others Jacobson, 1978, 2006; Abramowitz, 1988; Green and Krasno, 1988; Gerber, 1998; Erikson and Palfrey, 1998; Cagé and Dewitte, 2021).[4] In the French context, Bekkouche et al. (2022) first used the 1995 ban on corporate donations to isolate the causal effect of political giving on vote shares.[5] Another strand of this literature studies the quid-pro-quo effects of campaign contributions. A common view is that firms are willing to influence political decisions by financing candidates' campaigns. Recent papers have found that donations facilitate access to elected officials (Kalla and Broockman, 2016), and that banning donations influences the allocation of public procurement contracts (Titl and Geys, 2019; Baltrunaite, 2020; Gulzar et al., 2021).[6] Others suggest that, on the contrary, campaign contributions do not buy significant political favors (Fowler et al., 2020). These studies – and, to a smaller extent, our own paper – relate to a wider literature on the value of lobbying and political connections (Fisman, 2001). In France, Bertrand et al. (2018) have shown that politically connected CEOs tend to alter corporate employment decisions to help regional politicians in their reelection efforts, while Delatte et al. (2020) provide evidence that national representatives may exert influence in their local district to favor the private banks that helped their reelection by bailing out local firms. To the best of our knowledge, we are the first to investigate whether banning donations affects campaign communication content and political rhetoric before the election, not only among elected politicians, but among *all* candidates. Interestingly, we find that marginal candidates who never get elected are in fact those whose electoral discourse is most affected by changes in contributions.

We also investigate the determinants of corporate donations, both at the candidate and at the district level. By doing so, we contribute to a very large empirical literature on the determinants of political donations (Gimpel et al., 2006; Gordon et al., 2007; Chamon and Kaplan, 2013; Bonica, 2014; Powell and Grimmer, 2016; Barber, 2016; McCarty et al., 2016; Rhodes et al., 2018; Fouirnaies and Hall, 2018; Teso, 2020; Cagé and Guillot, 2021), including a narrower set of studies in the French context (François and Sauger, 2006; François and

[4] See also Avis et al. (2021) who study the effects of campaign spending limits on political competition and incumbency advantage in Brazil.

[5] On campaign finance in the French context, see also Palda and Palda (1998); Foucault and François (2005); François et al. (2016).

[6] Beyond political giving, Bertrand et al. (2021) find that charitable giving to non-profit organizations also buys corporate influence over policy-making.

Phélippeau, 2015). While the existing literature has mainly focused on large donors, we investigate the heterogeneity of the effects depending on the size of corporate donors, and highlight the role played by small and local donors. We also question the role of quid-pro-quo motivations and conclude that electoral discourse may be affected by another mechanism. More precisely, expressive donations from donors who wish to support the candidates they like (Bouton et al., 2018) may affect politicians' rhetoric through changes in their perceptions of which issues are most important.

Finally, our paper contributes to the literature on campaign communication strategies and political manifestos. While campaign messages have been shown to matter in voter decisions (Feltovich and Giovannoni, 2015; Kendall et al., 2015; Cruz et al., 2018), less is known about the determinants of their content, especially in the context of parliamentary systems in which the policy positions of individual candidates are tied to their national party platform.[7] Le Pennec (2020) uses the candidate manifestos that we also exploit in this paper to more broadly document the topics that individual politicians choose to advertise during their campaign. This study shows that candidates constrained by their party affiliation may strategically switch from promoting their party's policy platform to advertising neutral non-policy issues in order to persuade voters. Our paper studies a more specific (and overlooked) determinant of campaign messages: the donations received by candidates. Our findings suggest that the regulation of campaign contributions – or lack thereof – could alter the information that is provided to voters before they cast their vote, as it influences what candidates choose to advertise during the electoral season.

Overall, by taking a step back and investigating the impact of banning private contributions on political discourse at the campaign stage, we shed new light on the channels through which money may influence voters, electoral outcomes and representation. Beyond the specific context that we study (i.e., France in the early 1990s), our findings provide relevant lessons for campaign finance regulations today and for other democracies.

The rest of the paper is organized as follows. In Section 2, we provide background on campaign finance laws in France, introduce the new dataset built for this study, and provide descriptive statistics. Section 3 discusses the determinants of corporate donations and presents our empirical strategy. We report the estimated impact of corporate donations on the content of candidate manifestos in Section 4, and discuss possible mechanisms in Section 5. Finally, Section 6 concludes.

[7] For an extensive review of the literature on policy positioning in party manifestos (not candidates), see Adams (2012). For a candidate-level analysis of positioning under different electoral systems, see Catalinac (2018).

2 Background, data and descriptive statistics

The French legislative elections are held every five years in all 577 constituencies (single-member districts) to elect members of the National Assembly, which is the lower house of the French parliament. In this article, we focus on the 555 districts that are in metropolitan France, excluding the French overseas territories. In each of these districts, an average of 10 candidates compete for one seat.[8] In the 1990s' period that we consider, about half of all running candidates were affiliated with one of the five main political parties: the Communist party, the Green party, the Socialist party, the right-wing conservative party (*"Rassemblement pour la République"*), and the far-right party (*"Front National"*). Candidates could also run for smaller issue-specific or regional parties, and about 30% of candidates chose to run as independents, without the endorsement of any party.[9]

2.1 Campaign finance in France

French legislation on campaign and party financing changed quite dramatically throughout the 1980s and 1990s, with the introduction of: (i) the public funding of campaigns (through the reimbursement of campaign costs), (ii) the public funding of political parties, (iii) the regulation of the donations to candidates and political parties, and (iv) campaign spending caps.

Laws passed in 1988 introduced the direct public funding of parties, as well as the public reimbursement of candidates' campaign costs.[10] Candidates were then allowed to make personal contributions to their own campaign, to use contributions from their party, and to receive private donations – up to a cap. The 1990 law created the *"Commission Nationale des Comptes de Campagne et des Financements Politiques"* (CNCCFP), which has been checking and approving the accounts of candidates' campaigns since then.[11] Every candidate running in legislative elections has to name a financial representative (*"mandataire financier"*), 12 months at most before the election date. These representatives handle the candidates' campaign finances – which, in practice, prevents politicians from fundraising too far in advance – and provide a detailed account of their spending and revenues to the CNCCFP within the six months following the election. However, candidates have no obligation to disclose their cam-

[8] Formally, the elections follow a uninominal plurality rule with a runoff. If a candidate obtains the absolute majority in the first round, as well as a minimum of 25% of all the registered voters, then they are elected. If no candidate obtains the absolute majority in the first round, there is a second round where the two most-voted for candidates and the candidates who obtained more than 12.5% of the registered voters can take part. The candidate who obtains the majority of the votes then wins.

[9] We identify candidates' party affiliations using information both from the Ministry of the Interior (the official publisher of elections' results) and the daily newspaper *Le Monde*.

[10] Laws no. 88-286 and no. 88-227 of 11 March 1988. Campaign costs are reimbursed by the State, up to 47.5% of the spending limit, if the candidate obtains more than 5% of the votes in the first election round.

[11] Law no. 90-55 of 15 January 1990.

paign revenue or the origin of any received contributions *before* the election.[12] Importantly, candidates may receive more donations than the amounts they actually spend, but if this is the case, they have to transfer the remaining funds to a political party or to general interest nonprofit organizations at the end of the campaign – the so-called *"dévolution"* – hence they cannot set funds aside for the next electoral campaign.[13] In other words, French candidates may only raise and spend money for a specific campaign, and under relatively tight scrutiny.

The 1995 ban on corporate donations The law passed in 1995 marked an important change in party and election financing, with the prohibition of donations from legal entities: since then, only "natural" persons (i.e., individuals) have been allowed to make political donations.[14]

Importantly, our own research through archived news articles from the national daily newspaper *Le Monde* indicates that this ban could not have been anticipated during the 1993 legislative elections campaign. In 1990, the Socialist majority passed a law regulating corporate donations only three years prior to 1993 and imposed new rules for greater transparency a few months before the election. These new rules required candidates to provide a detailed list of their corporate donors, along with the amount they received.[15] Discussions of a ban on corporate donations were initiated by the newly elected right-wing government in the Fall 1994,[16] in the wake of multiple scandals involving campaign financing and conflicts of interest that emerged after the 1993 elections, in spite of the new regulations. The first article in *Le Monde* that mentioned the possibility of such a ban was published on 30 November 1994.[17]

2.2 Campaign revenues

To study the effects of this ban, we construct a new dataset combining campaign donations and candidate manifestos for the French 1993 and 1997 legislative elections. We complement these data with information on the activity of elected politicians during the subsequent legislatures. We first collect very detailed data on candidates' campaign revenues and expenditures, and in particular data on corporate donations that include the identity of the donor.

Total revenues For the 1993 and the 1997 legislative elections, we use data from Bekkouche et al. (2022) on each candidate's aggregate campaign expenditures, as well as their campaign

[12] A careful study of newspaper articles published at the time suggests that campaign contributors and corporate donors, in particular, were not commonly mentioned during the 1993 campaign that we study.

[13] Electoral law, articles L52-4 and L52-5.

[14] Law no. 95-65 of 19 January 1995.

[15] Law of 29 January 1993.

[16] The 1988 laws were passed by Jacques Chirac's right-wing government in March. The legislative elections of June 1988, following François Mitterand's reelection, brought a win for the Socialist party (Michel Rocard's government). The right returned to power in the 1993 legislative elections.

[17] *"M. Méhaignerie confirme le prochain dépôt d'un projet de loi sur le financement des partis politiques."*

Table 1: Summary statistics: campaign spending and revenues

	Spending (cst €)					
	Mean	Median	sd	Min	Max	N
Total spending per candidate						
1993	20,397	10,503	25,369	0	160,756	5,115
1997	14,607	2,257	18,646	0	72,122	5,977
Total revenues						
1993	22,923	10,583	33,326	0	784,482	5,134
1997	14,972	2,441	19,129	0	99,873	5,977
Share corporate donations						
1993	12.87	0.00	24.09	0	100	4,947
1997	0.00	0.00	0.00	0	0	5,026
Share individual donations						
1993	9.52	2.22	16.40	0	100	4,928
1997	13.81	0.05	25.47	0	100	5,001
Share personal contributions						
1993	35.78	15.97	39.49	0	100	4,926
1997	60.71	73.68	38.90	0	100	4,954
Share party contributions						
1993	37.81	20.56	40.06	0	100	4,924
1997	24.15	2.27	34.12	0	100	4,954

Notes: The table presents summary statistics on spending and revenues by candidates running in legislative elections. An observation is a candidate in 1993 or 1997. Revenues are measured in 2020 constant euros and shares in percentage points.

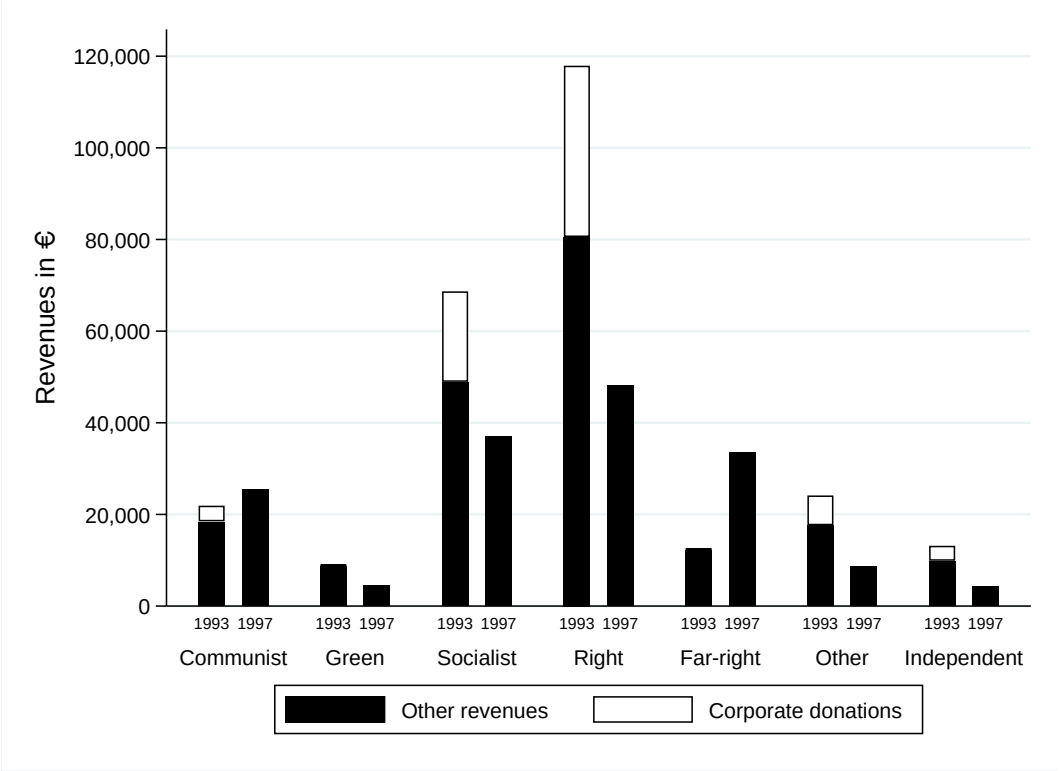
revenue and its main sources: corporate and individual donations, party contributions and personal contributions. Table 1 presents descriptive statistics for each election.

On average, candidates spent €20,397 in the 1993 legislative elections, compared to €14,607 in 1997.[18] The drop in total spending (and revenues) can be explained by the 1995 ban on corporate donations but also by a decrease in the spending limit,[19] and by the fact that the 1997 election was called only two months ahead of time (following the dissolution of the National Assembly by the President) which limited candidates' ability to raise money for their campaign.[20] Sources of revenues and aggregate amounts are heterogeneous across parties. As shown in Figure 1, candidates from the two mainstream parties – the Socialist Party and the conservative right-wing party – had higher revenues on average than candidates from other parties. In particular, they received on average more corporate donations in 1993, and the share of corporate donations in their total revenue is also higher.

[18] All amounts are measured in constant 2020 euros, unless specified otherwise.

[19] From 1991 to 1995, candidates were allowed to spend up to 500,000 francs (€121,000) per election, and only 400,000 francs (€88,000) for constituencies with fewer than 80,000 inhabitants. After 1995, candidates were allowed to spend up to 250,000 Francs (€52,403) per election, plus 1 franc (€0.15) per constituent. The change from a flat function of the population size to a linear relationship decreased the spending limit faced by all candidates. This change, which was concurrent to the ban on corporate donations, is expected to affect all candidates in the same way, whether they received or not corporate donations in 1993.

[20] Jacques Chirac called the dissolution on April 21, 1997 – hoping to secure a stronger majority in Parliament – and the first round of the election to renew the National Assembly was held on May 25.



Notes: The figure shows candidate average revenues from corporate donations and other sources, depending on their political parties during the 1993 and 1997 legislative electoral campaigns. The sample includes all candidates endorsed by one of the five main parties (Communist, Socialist, Green, right-wing and far-right), as well as candidates affiliated with smaller parties ("other") and independent candidates who are not affiliated with any party. Revenues are in 2020 constant euros. N= 11,372.

Figure 1: Total campaign revenues and corporate donations across parties

Corporate donations For the 1993 legislative election, which was the only election for which corporate donations were allowed *and* candidates had to disclose the amount they received from each corporate donor, we collect detailed information on the origin and amount of each of the donations made by corporations.[21] To do so, we digitize paper data from the official reports on election campaign costs and expenditures (*"Publication simplifiée des comptes de campagne"*) published by the CNCCFP. Appendix Figure D.1 provides an example of these data.

Table 2 displays summary statistics on the reported corporate donations. Approximately 33% of the candidates received at least one corporate donation (1,647 out of 5,141 candidates). The average number of donations received is equal to 3 when considering the whole sample of candidates (i.e., including those who received no corporate donation), and to 9 when we restrict the sample to candidates who received at least one corporate donation (see Appendix

[21] Donations were first allowed with the laws passed in March 1988, and candidates at the 1988 legislative elections that took place on June 5 and 12 were thus entitled to receive contributions both from individuals and corporations. However, they did not have to report their revenues or expenses to any centralized agency (such as the CNCCFP). See Appendix B for detailed information on the 1988 candidates' accounts.

Table E.1 for summary statistics using this restricted sample). On average, candidates received €8,075 from corporate donors, equivalent to €0.12 per voter, and the mean revenue from corporate donations for candidates who received at least one donation is €24,406, which accounts for 37% of their total revenue (see Appendix Table E.1).

The mean value of a donation is €2,061, with significant variations between large donations equal to the cap (50,000 francs, corresponding to €9,842) and very small contributions. In Appendix Table E.2, we provide summary statistics on the number of donations and the amount received across districts. The total number of corporate donations varies from 1 to 109 and heterogeneity spans the whole territory, as illustrated in Appendix Figure D.2.

With regards to the corporate donors themselves, we first clean the firms' names and match them with administrative records to identify the donors that appear under different names or spellings and generate unique donor identifiers (details about this procedure are presented in Appendix Section A.1.1). We are left with 14,483 donations made by 10,470 distinct donors. On average, donors gave a total amount of €2,857 to 1.38 different candidates, while 84% of donors only gave to one candidate (we refer to these donors as "small donors" in the rest of the analysis).[22] Other corporations gave to multiple candidates, possibly across many districts. These multiple-candidate donors (or "multiple donors", henceforth) contribute higher amounts on average: the mean donation of a small donor is equal to €1,469 while it is close to €3,000 among multiple donors. To illustrate, the public works company *COLAS* made 96 donations to candidates in 1993 with a total of €401,368 (140 times more than the average donor). In Appendix Table E.3, we list the 20 corporations that made the highest number of donations.

We further classify the multiple donors along different criteria. First, out of the 1,658 multiple donors, 83% are multi-district donors that gave to candidates across different districts while 17% are single-district donors that contribute to several campaigns within the same race. Second, 28% are single-party donors that gave to several candidates endorsed by the same party while 82% are multi-party donors that gave to candidates of different parties. Single-party donors are those most likely to be interested in pushing a specific partisan agenda, while multi-party donors are not particularly partisan. Overall, these descriptive facts suggest that a large majority of corporate donors in our sample target individual candidates rather than partisan organizations,[23] including candidates competing for the same seat.[24]

[22] A typical example of a small donor is a small local business such as *"Ets Bricchi Plomberie"* (a plumbing firm). More generally, a simple analysis of the donors' names reveals that an overwhelming majority of them are for-profit firms. For instance, we were able to find only eight trade unions (0.08%) and three political committees, such as the "Support Committee for Liberalism" (0.03%), out of all corporate donors.

[23] As additional evidence, we collect data on private donations to political parties (not individual candidates) from the paper-format reports of the CNCCFP and find that only 9% of corporate donors in our sample also contribute to a party.

[24] This behavior, described as "hedging", has been shown in the literature to be typical of favor-motivated donors (see e.g., Bouton et al., 2021). We further discuss donors' motivations in Sections 3 and 5.

Table 2: Summary statistics: corporate donations in 1993

	Mean	Median	p75	sd	N
A. Candidates					
Corp. Donations > 0 (%)	0.33	0.00	1	0.47	5,141
# Corp. Donations	2.91	0.00	2.00	6.85	5,141
Corp. Donations (€)	8,075	0	2,067	20,738	5,141
Corp. Donation (euros/voter)	0.12	0.00	0.03	0.32	5,141
B. Donors					
# Corp. Donations	1.38	1.00	1.00	2.26	10,470
Total Donations (€)	2,857	787	1,968	10,277	10,470
Small donor (%)	0.84	1.00	1.00	0.37	10,470
Multiple donor (%)	0.16	0.00	0.00	0.37	10,470
Single-district donor (%)	0.17	0.00	0.00	0.38	1,658
Multi-district donor (%)	0.83	1.00	1.00	0.38	1,658
Single-party donor (%)	0.28	0.00	1.00	0.45	1,611
Multi-party donor (%)	0.72	1.00	1.00	0.45	1,611
C. Donations					
Donation Value (€)	2,061	984	2,953	2,561	14,483
Donation Value from small donors (€)	1,469	591	1,968	2,175	8,811
Donation Value from multiple donors (€)	2,981	1,968	3,937	2,831	5,672

Notes: The table presents summary statistics on corporate donations received by candidates in 1993. An observation is a candidate (part A), a donor (part B), or a donation (part C). Small (resp. multiple) donors are donors who made a single donation (donations to multiple candidates) in 1993. Single-district donors (resp. multi-district) are donors who gave to multiple candidates running in the same district (in different districts). Single-party donors (resp. multi-party) are multiple donors who made all their donations to candidates endorsed by the same party (different parties), excluding donors who gave only to independent candidates. Donation values are in 2020 constant euros.

Last, we successfully retrieve donors' sectors of activity for half of the firms in our sample and label the others as "unknown sector" (see Appendix A.1.2 for details on the methodology). Summary statistics by sector are provided in Appendix Table E.4.

2.3 Campaign manifestos and information on candidates

During the official campaign period, individual candidates have the right to issue one campaign manifesto (*"profession de foi"* or *"circulaire"*), which is distinct from their national party communication. These two-page documents are mailed to all registered voters by the State a few days before an election. Importantly, manifestos are part of the official campaign spending that is fully reimbursed by the State, provided that the candidate obtains at least 5% of the votes in the first round of the election. Additional details can be found in Appendix A.2 and examples of candidate manifestos are provided in Appendix Figures D.3 to D.6.

Candidate manifestos issued before the 1993 legislative elections were digitized by the Archelec project (Gaultier-Voituriez, 2016), and assembled by Le Pennec (2020) (5,826 manifestos).[25] We gather 6,471 candidate manifestos issued before the 1997 elections from the

[25] We also use, in some specifications, the corpus of manifestos issued before the 1988, 1981, 1978, 1973, 1968 and 1967 elections, from the same sources.

National Archives,[26] digitize the paper documents and apply optical character recognition to convert their content into machine-readable text. In total, our dataset contains manifestos issued by 10,299 candidates across 1,097 races, which corresponds to 91% of the candidates running either in 1993 or 1997. We use fuzzy string matching on candidates' names to merge this corpus with data on campaign donations, as well as candidate-level electoral outcomes from Bekkouche et al. (2022). The latter dataset provides information on the number of votes obtained by each candidate in both election rounds, on their gender, political party, and other political mandates. Using their names, party labels and districts, we create a unique candidate identifier to follow candidates across elections.

2.4 Legislative activity

We collect information on the activity of the elected representatives from different sources. First, we collect the content of written questions to the government by scraping the National Assembly's website. These questions – which can be issued at any time even outside official legislative sessions – are directed to a single minister to express citizens' concerns on a specific topic.[27] We scrape the content of all the questions issued over the 9th, 10th and 11th legislatures, for a total of about 63,000 questions for the 1988-1993 period, 47,000 questions for 1993-1997, and 70,000 questions for 1997-2002.

Second, we scrape the content of representatives' interventions during public sessions. Unlike written questions, which are publicly available but remain relatively unknown to citizens, debate interventions have been broadcast on TV since the 1950s and may attract a large audience, as well as media attention. The National Assembly's website provides the full record of these debates starting from the middle of the 10th legislature (1993-1997). Debates follow an opening question from a representative to a specific member of the government, to which other representatives can also respond. We parse the content of these conversations to isolate each single intervention and assign all interventions to their corresponding representative. We identify about 7,000 unique interventions over the 1993-1997 period and 20,000 interventions over the 1997-2002 period.[28]

2.5 Using computational text analysis to analyze the manifestos

In Appendix A.2, we discuss a few examples that anecdotally illustrate how the content of campaign manifestos may differ across candidates, including across candidates of the same party, and depending on the amount of corporate donations they receive. We use computa-

[26] Classification numbers 19990140/32 to 19990140/36.

[27] General rules of the Parliament, Article 135.

[28] The content of debate interventions is not available for either the 9th legislature or the first years of the 10th legislature. Our sample of debate interventions starts on 1 June 1995, which explains why the number of interventions differs between the 10th and 11th legislatures.

tional text analysis to extract information from all candidate manifestos in a more systematic way. We start with standard text pre-processing, which is described in Appendix A.3.1. We then construct three types of measures, that we present and discuss as follows: first, the prevalence of local references over national ones; second, polarization on the left-right scale; and third, the prevalence of different policy topics in discourse.

Local vs. national references First, we construct a simple measure of the attention each candidate gives to local aspects as opposed to national politics during the campaign. As candidates to a national parliamentary mandate, we expect these politicians to campaign on the national issues at stake and the nationwide policy proposals that they would support or oppose once elected. However, as they are running for election in a specific district, we would also expect them to advertise their local presence and emphasize their ability to represent their constituents' interests in the National Assembly. They may, for instance, insist on the support they receive from mayors or other local elected officials. We expect that they would also demonstrate that they have a good knowledge of the local issues that concern voters, and would argue that, together, they share common experiences, values and preferences.

To test whether or not eliminating corporate donations from a candidate's funds affects the balance between national and local campaigning, we count the number of times a manifesto mentions the department in which the candidate is running and the number of times it mentions a municipality (*"commune"*) located in that department, relative to the overall number of words in the manifesto. The frequency of local references in one's manifesto is likely to reflect a candidate's local ties and to proxy for the salience of local representation in their campaign communication. We also count the number of references to national politics, including the names of parties, party leaders and members of government at the time of the election.[29] We define the local index of a manifesto as the log ratio of its local frequency over its national frequency,[30] which measures the prevalence of local references over national ones in the document.

Appendix Figure D.7 shows the kernel density of this local index for each of the five main parties in our sample. On average, this index is negative, indicating that the frequency of local references tends to be lower than the frequency of references to national politics in any manifesto. However, there is some heterogeneity across parties: there is a higher prevalence of local references for the Socialist, Green and right-wing parties, a slightly lower local index for the Communist party, and a much lower one for far-right candidates.

[29] We provide more details on our choice of dictionaries for local and national references in Appendix A.3.2.

[30] More precisely, the local index is defined as $ln\left(\frac{1+Local}{1+National}\right)$, to take into account the multiple zeros in the frequency of national references.

Left-right partisan score and extremeness Next, we project the content of each document onto the left-right space of language. While most candidates are endorsed by a party and are tied to the policy platform decided at the national party level,[31] they may decide to campaign on divisive partisan positions and issue a polarized manifesto, or to advertise consensus-based arguments and issue a more neutral manifesto instead. These decisions may be impacted by campaign contributions and their regulation.

We adopt a supervised approach to project all manifestos onto an ideological scale, leveraging the known party affiliation of candidates and the acknowledged ideological leaning of these parties from left to right. More precisely, we aggregate the content of manifestos issued by all candidates considered right-wing, as well as the content issued by all candidates considered to be left-wing.[32] Then we give an ideological score to each word in the vocabulary, which reflects how likely a right-wing candidate is to use that word compared to a left-wing candidate. To do so, we follow the multinomial inverse regression approach proposed by Taddy (2013) and Taddy (2015), and we use a penalized estimator to estimate the model as recommended by Taddy (2017) and Gentzkow et al. (2019). All technical details can be found in Appendix A.3.3. Appendix Table E.5 shows examples of words with large negative loadings and words with large positive loadings in both 1993 and 1997. Left-wing words tend to refer to social policy ("poverty", "benefits") and capitalism ("dividend", "capitalist"), while right-wing words refer to security issues ("terrorist", "criminal"), immigration ("deportation") and moral values ("decadence", "patriot").

The left-right partisan score of a manifesto is defined as the mean ideological score of the words it contains. Hence a document with a negative (positive) score is a document that relies primarily on words used by politicians from the left (right) and rarely by politicians from the right (left), while a document with a score close to zero uses either polarized words from both ideological sides or neutral words that are used by politicians from both sides indifferently. Appendix Figure D.8 shows the kernel density of partisan scores (divided by their overall standard deviation), for each of the five main parties in our sample. We observe more extreme scores for Communist candidates (on the left) and candidates from the far-right (on the right) than for candidates from the more centrist Socialist party and right-wing party. This suggests that candidates endorsed by more radical parties do indeed use more polarized language than others.

In addition to candidates' partisan leanings on the left-right scale, we define discourse extremeness as the absolute value of the partisan score, which measures the distance, either

[31] Previous research has shown that French legislative candidates do indeed tend to follow the national party line in their individual manifesto (Le Pennec, 2020).

[32] We determine whether a candidate's orientation is left- or right-wing using the political labels provided by the Ministry of the Interior, which assigns an ideological leaning to candidates endorsed by a party as well as independent candidates (e.g. *"Divers droite"* – miscellaneous right). More precisely, we use the same classification as in Granzier et al. (2019).

on the left or on the right, to a neutral manifesto.

Prevalence of different policy topics We adopt a similar strategy to measure the prevalence of specific policy topics in campaign manifestos, and determine whether banning corporate donations shifts electoral discourse toward some topics more than others. The challenge is twofold, as this exercise requires first identifying such topics, and second measuring their relative importance in a given document. We do not know *ex ante* which candidates are more likely to talk about a certain topic, so we cannot use the manifestos themselves to build a supervised classifier, as we do to scale manifestos from left to right. Instead, we use all written questions to the government issued in the 9th, 10th and 11th legislatures as a training set, and the ministries targeted by these questions as topic labels. More precisely, we assign each ministry to one of four broad categories that are constant across legislatures: (i) homeland security and administration, (ii) foreign policy, (iii) economy, and (iv) social issues – as well as a "non-classified" category. We perform a similar exercise with 17 narrower categories: (i) homeland security, (ii) education, (iii) environment, (iv) retail, (v) health, (vi) justice, (vii) economy, (viii) construction and amenities, (ix) public administration, (x) employment, (xi) agriculture, (xii) defense and military, (xiii) foreign policy, (xiv) industry, (xv) culture, (xvi) sport and entertainment, and (xvii) European policy.

This method allows us to map political discourse, as used by elected representatives once in office, with topics that are most relevant to policy work, since they represent the main government activities. Our sample contains more than 180,000 unique questions, allowing us to estimate the relationship between word usage and policy topics with high accuracy. Furthermore, using written questions is effective because the ministry that each of them is addressed to, and therefore its main topic of interest, is well-identified (e.g., Ministry of the Economy, Ministry of Defense, etc.). Once again, we follow the multinomial inverse regression approach proposed by Taddy (2013), the technical details of which are provided in Appendix A.3.3. Appendix Table E.6 shows examples of words with a high loading for each of the 17 narrow topics.[33] Each manifesto is then represented as a set of probabilities, indicating the likelihood that the manifesto focuses primarily on a given topic over the others. Appendix Table E.7 shows the mean and standard deviation of these predicted probabilities for each topic. The most prevalent topics are economy, employment, foreign policy and homeland security, with an average probability of dominating a candidate's discourse of 31 percentage points.[34] The prevalence of these topics can vary substantially across parties. As

[33]For instance, among the words most likely to be used in relation to homeland security, we find words referring to the organization of elections (for which the Ministry of the Interior is responsible), such as "vote by proxy" and "electoral", as well as words referring to order and security, such as "police", "firefighter" and "violation".

[34]This high number is partly explained by the fact that the Ministry of the Interior is responsible for organizing elections, and election logistics are frequently mentioned in campaign manifestos.

an illustration, Appendix Figure D.9 shows the distribution of homeland security prevalence in candidate manifestos for each of the five main parties in our sample. We note that candidates from the far-right tend to use vocabulary associated with this policy topic much more often than candidates from any other party. Conversely, candidates from the Green party focus less on homeland security than others.

3 Empirical strategy

In this section, we study the determinants of corporate donations and discuss how we address their endogenous allocation across candidates in order to estimate the causal impact of banning these donations on the content of candidates' communication.

3.1 What are the determinants of corporate donations?

First, we estimate the following model:

$$\text{Corporate Donations}_{ipd} = W_i'\lambda + Z_d'\gamma + \eta_p + u_{ipd} \tag{1}$$

where the dependent variable of interest, Corporate Donations$_{ipd}$, is alternatively the number of corporate donations or the amount of corporate donations (in euros per voter) received by candidate i from party p in district d in 1993. W_i is a vector of individual-level covariates and Z_d' is a vector of district-level controls.[35] We also include party fixed effects η_p and we cluster standard errors at the district level.[36]

Candidate-level determinants Figure 2 reports the candidate-level determinants of corporate donations in 1993. We find that candidates from the Socialist party and the conservative right-wing party receive on average more corporate donations than independent candidates, while candidates from the Green, Communist and far-right parties tend to receive fewer donations (all estimates are significant at the 1% level). In addition, men tend to receive more corporate donations than women, as do re-runners, incumbents, mayors and candidates who hold other electoral mandates more than the other candidates. For instance, being a mayor increases candidate revenues from corporate donations by €0.3 per voter (Figure 2b). This suggests that having a local presence, or better political connections, is an important determinant of candidates' connections to firms at the fundraising stage of the campaign.

[35] Detailed information about these district-level covariates is provided in Appendix A.4 and Appendix Table E.8.

[36] We put candidates from small parties in a common "Other" category and leave independent candidates (who are not affiliated with any party) as the omitted category.

Appendix Figure D.10 also shows a positive relationship between a candidate's left-right score measured at the previous election and the number of corporate donations received in 1993, while still controlling for party fixed effects. It suggests that within the same party, candidates who use more right-wing language are likely to receive more corporate donations.[37] However, turning to the amount of donations received, we find no relationship between the left-right score measured at the previous election and the amount of donations, suggesting that while party endorsement is a key determinant of donations' size, within-party ideological leaning is not.

Lastly, our candidate-level results are robust to a within-district analysis, in which we replace district-level covariates Z'_d in equation (1) by district fixed effects α_d (Appendix Figure D.11).

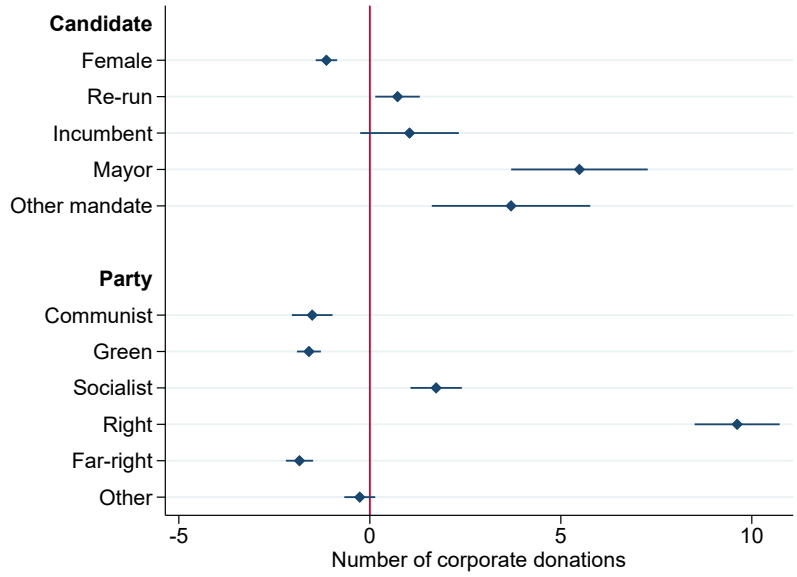
District-level determinants Appendix Figure D.12 suggests that district-level factors, such as demographic and occupational structure or economic activity, play a minimal role in determining the allocation of corporate donations across candidates, either at the extensive or at the intensive margin. In Appendix Figure D.13, we perform a similar analysis but consider the overall amount of corporate donations received at the district level (summed over all the candidates). The results point toward the absence of major district-level drivers of corporate donations as well. The degree of electoral competition in the previous election may matter for donors' decision-making, since candidates running in districts that did not hold a runoff in the previous election (i.e., districts that are not very competitive because the front-runner was strong enough to win in the first round) tend to receive fewer donations than candidates running in more competitive districts.[38]

These descriptive findings provide some insights that are worth noting. Our analysis of candidate-level determinants of donations (Figure 2) suggests that corporate donors favor politicians with better access to power (e.g., incumbents and mayors), however, the null results on district-level economic determinants provide a more nuanced picture. Specifically, corporate donors do not target politicians in places where their power would be most profitable to firms; for example, in districts where municipalities have higher operating revenues and where more money can be spent on public contracts. Hence the primary motive of corporate donors is unlikely to be the pursuit of particularized benefits and economic favors from politicians in exchange for their campaign contributions. Instead, the finding that more competitive districts attract more donations is consistent with donors contributing expressively

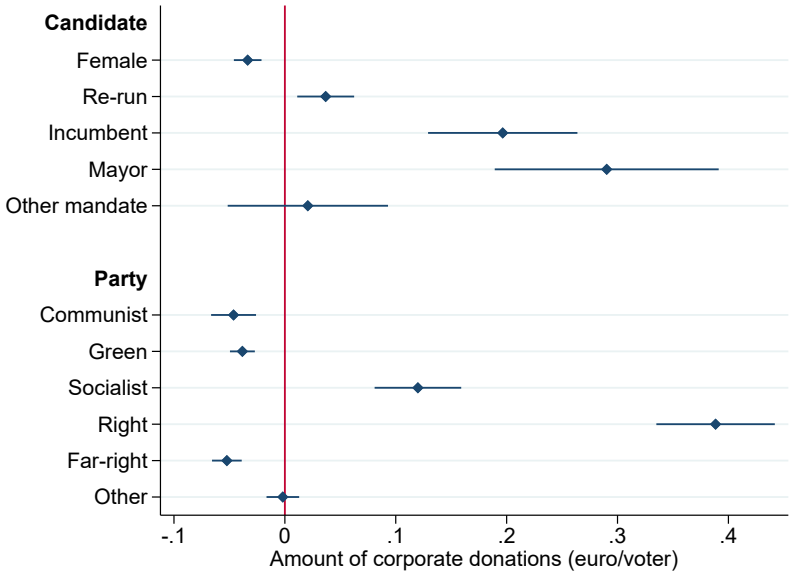
[37] In this specification, we focus on the subset of candidates who run both in 1988 and 1993. We also include the candidate's vote share in 1988: the coefficient is small and insignificant, suggesting that once we control for party affiliation and other measures of electoral success such as incumbency status, receiving more votes in the past does not predict more donations.

[38] The point estimate is relatively small (-0.03 euro per voter) but significant at the 1% level, and is as large as the coefficients on the female and the re-run indicator variables.

(a) Number of corporate donations



(b) Amount of corporate donations



Notes: This figure shows the coefficients and their 95% confidence intervals from a regression of the number of corporate donations (Figure 2a) or the amount of corporate donations per voter (Figure 2b) received by each candidate on a set of party fixed effects (omitting independent candidates), candidate-level characteristics, and district-level characteristics (estimation of model (1)). We use one observation per candidate in 1993. Standard errors are clustered at the district level.

Figure 2: Candidate-level determinants of corporate donations in 1993

to their preferred candidates' campaigns, especially when the outcome of the race is uncertain and when their support may make a noticeable difference. We further discuss the relative importance of service-induced and expressive donations in Section 5.

3.2 Difference-in-differences approach

To estimate the impact of banning corporate donations, we estimate the following model:

$$Y_{ipdt} = \alpha_i + \eta_{pt} + \beta \text{Corporate Donations}_{ipdt} + W'_{it}\lambda + \epsilon_{ipdt} \quad (2)$$

where α_i are candidate fixed effects, η_{pt} are party times year fixed effects,[39] and $\text{Corporate Donations}_{ipdt}$ is the amount of corporate donations per voter received by candidate i affiliated with party p and running in district d in year t. By definition, given the 1995 ban, $\text{Corporate Donations}_{ipd97} = 0$ and $\text{Corporate Donations}_{ipd93} \geq 0$. Finally, Y_{ipdt} is alternatively each of the text-based outcomes described in Section 2.5, and W'_{it} is a vector of time-varying candidate characteristics that correlate with that of corporate donations: indicator variables for having run for election before, being the incumbent, being a mayor and holding other electoral mandates. We cluster standard errors at the district level. Our sample includes all candidates who ran both in 1993 and 1997.[40]

To interpret the coefficient β as the effect of losing corporate donations after the ban, we multiply $\text{Corporate Donations}_{ipdt}$ by -1. This coefficient represents the average effect of the "treatment" (i.e., the loss of corporate donations) on the "treated" (i.e., those who benefited from corporate donations before the ban).[41] In addition to controlling for the selection of candidates on observed characteristics, with the inclusion of candidate fixed effects, we control for the fact that firms donated more often to individual politicians with specific time-invariant unobserved attributes, such as better communication skills. Including party-year fixed effects controls for party-specific time trends. Our identification assumption is that potential trends in campaign communication between 1993 and 1997 are uncorrelated with the 1993 allocation of corporate donations among candidates of the same party, conditional on controlling for the time-varying candidate characteristics listed above. This is plausibly satisfied in our context. First, the 1995 ban was unexpected, preventing candidates with specific attributes from preemptively adapting their electoral discourse in 1993 *and* raising more funds in anticipation of their future loss in campaign revenue. Furthermore, as explained in Section 2.1, the French campaign finance rules prevent candidates from stockpiling funds for future campaigns once

[39] We include a separate fixed effect for each party organization, including smaller ones that are not among the five main party organizations, and a common fixed effect for independent candidates.

[40] Note that this sample of repeating candidates is a selected sample, an issue that we cover in Appendix C. As shown in Appendix Table E.9, 46% of these re-runners received at least one corporate donation in 1993, resulting in an average number of five donations and an average amount of €0.22 per voter in this sample.

[41] More precisely, given the continuous definition of our treatment variable, β is the average causal response of a one-standard-deviation loss in corporate donations for those who experience this change.

the election is over. Second, the inclusion of time-varying controls in equation (2) captures any potential differences in rhetorical trends confounded by changes in the observed determinants of donations.

A classical approach to further test for the validity of our empirical strategy is to show that trends in outcomes were parallel before the policy change. In our context, this exercise is compromised by the series of campaign finance reforms that preceded the ban on corporate donations as well as redistricting issues. We provide more details and explain how we circumvent this limitation in Section 4.3.

4 Impact of banning corporate donations on campaign communication

4.1 Main results

We first estimate equation (2) using the local index of each candidate manifesto, which measures the prevalence of local references over national ones, as the dependent variable.[42] As shown in column 1 of Table 3, a one-standard-deviation loss in corporate donations decreases the local index by 15.8% of a standard deviation, an estimate that is significant at the 1% level.

Columns 2 and 3 show that this effect is driven both by a significant decrease in the frequency of local references in manifestos (a 25-percentage-point decrease that corresponds to about 18% of the mean local frequency before the ban), and an increase in the frequency of national references (a 13-percentage-point increase that corresponds to about 4% of the mean national frequency before the ban).[43] Overall, these results suggest that losing corporate donations encourages candidates to advertise their local presence (e.g., their local mandates or their knowledge of local issues) less often, and to make more references to national politics instead.[44]

Second, we test for the impact of banning corporate donations on partisan leaning in campaign discourse. Columns 4 and 5 of Table 3 show no significant impact of losing donations on either the left-right score of candidate manifestos, or their extremeness – defined as the

[42] In this specification and all that follow, the local index is divided by its (yearly) standard deviation. We use the standardized aggregate amount of corporate donations as our main explanatory variable and restrict the sample to observations for which both the aggregate amount and the detailed breakdown of corporate donations – which come from different sources (see Section 2.2 for details) – are available. In Appendix Table E.10, we show that our results are robust to including all candidates for whom the aggregate amount of corporate donations is known, or to observations for which the reported aggregate amount of corporate donations is exactly equal to the sum of single donations.

[43] Note that these opposite effects are not mechanical: a candidate could increase both the number of local references *and* the number of national references in their manifesto – at the expense of any word that is neither a local keyword nor a national keyword.

[44] Consistent with these results, we find an overall decrease, among *all* running candidates, in the local index (13% of a standard deviation) and the frequency of local references (23 percentage points) after the ban.

absolute value of the left-right score. It suggests that banning corporate donations does not systematically shift electoral discourse toward one ideological side or the other, nor does it increase or decrease polarization. However, without necessarily adopting more divisive or consensus-based language, corporate donations may affect the policy topics covered by candidates.

In Table 4, we show that a one-standard-deviation decrease in corporate donations reduces the probability of focusing on economic issues by 1.4 percentage points; an estimate that is significant at the 1% level and corresponds to a 6% decrease relative to the mean prevalence of economic issues before the ban (column 1). Conversely, column 2 shows a symmetrically positive effect on social issues (1.4 percentage points), significant at the 1% level as well. We also obtain a negative effect on homeland security and administration (column 3) and a positive but smaller impact on foreign policy (column 4). In Appendix Figure D.14, we report the point estimates and their 95% confidence intervals for the effect of banning corporate donations on the prevalence of the 17 narrower topics. While few coefficients are statistically significant, the results suggest that the negative impact on economic issues is mostly driven by a decrease in the prevalence of construction and amenities (with an estimated effect corresponding to 14% of a standard deviation, significant at the 5% level) and, to a smaller extent, by a decrease in the prevalence of retail and environmental issues. Interestingly, the effects are not driven by *any* economic question, but by local issues such as construction and amenities.

Overall, these results suggest that losing corporate donations pushes candidates to devote less space in their campaign communication to local economic issues, and to focus on broader topics like social issues and foreign policy.[45]

4.2 Heterogeneity of the effects

Depending on the political parties We now investigate whether the impact of banning corporate donations differs across parties. Table 5 shows the results from interacting Corporate Donations$_{ipdt}$ (multiplied by -1) with seven indicator variables, each indicating which party endorses candidate i.

As shown in column 1, the impact on the prevalence of local references over national ones is negative for the five main parties. The estimated impact of losing donations on the local index is particularly large for parties that are newer on the political scene: a one-standard-deviation decrease in corporate donations per voter is estimated to reduce the local index by 3.5 standard deviations among Green party candidates (a large effect that is significant at the 1% level) and by 48% of a standard deviation among far-right candidates (although it is not significant). As shown in columns 2 and 3, this effect is driven by a very large increase in the

[45] We note here that the "employment" topic in Appendix Figure D.14 refers mostly to issues related to unemployment benefits, rather than job creation. Hence, we treat it as a social issue and not an economic one.

Table 3: Impact of corporate donations on campaign communication

	Local index	Local references	National references	Left-right score	Extremeness
	(1)	(2)	(3)	(4)	(5)
Corporate donations (loss)	-0.158***	-0.253***	0.133**	-0.007	0.007
	(0.030)	(0.054)	(0.053)	(0.005)	(0.004)
Observations	2602	2602	2602	2602	2602
Mean outcome before ban	-0.652	1.375	3.031	-0.037	0.861
R2-Within	0.031	0.024	0.008	0.005	0.007

Notes: Standard errors are clustered by district and shown in parentheses (***, **, * indicate significance at 1, 5, and 10 percent, respectively). We use one observation per candidate per year. The sample includes all candidates who run both in 1993 and 1997, whose manifesto is available, and for whom both the aggregate amount and the detailed breakdown of corporate donations are known. We control for candidate fixed effects and party×year fixed effects, as well as time-varying individual controls: indicator variables for having run in the past, for being the incumbent, and for holding other electoral mandates. The amount of corporate donations per voter is divided by its standard deviation in 1993 and multiplied by -1. The local index measures the prevalence of local references over national ones and is divided by its standard deviation (column 1). The normalized frequencies of local and national references in candidate manifestos (columns 2 and 3) are measured in percentage points. The left-right score (column 4) measures the prevalence of right-wing (positive score) vs. left-wing (negative score) language in candidate manifestos, and extremeness is defined as the absolute value of the left-right score (column 5).

Table 4: Impact of corporate donations on broad policy topics

	Economy	Social	Homeland and administration	Foreign policy
	(1)	(2)	(3)	(4)
Corporate donations (loss)	-1.433***	1.433***	-0.960*	0.385***
	(0.526)	(0.540)	(0.542)	(0.141)
Observations	2602	2602	2602	2602
Mean outcome before ban	23.507	36.203	19.243	4.244
R2-Within	0.012	0.010	0.006	0.005

Notes: The outcome is the predicted probability, for each policy topic, that a candidate manifesto focuses primarily on that topic, based on the words it contains. It is measured in percentage points. Other notes as in Table 3.

frequency of national references for Green party candidates (7.4 percentage points), though the impact of donations on the frequency of local references remains strong (-0.8 percentage point) and significant at the 1% level. This effect on local references specifically is even larger for far-right candidates (-1.3 percentage points, also significant at the 1% level).

Interestingly, banning donations also affects the partisan leaning of discourse among candidates from these two parties (as shown in column 4). While the effect on the left-right score remains small and insignificant for the three historically dominant parties (right-wing, Socialist and Communist), Green party candidates move to the left of the language scale: a one-standard-deviation decrease in corporate donations reduces their left-right score by 53% of a standard deviation – an estimate that is significant at the 1% level. Conversely, far-right candidates move to the right (although the estimate is not significant). As a consequence, losing corporate donations results in more extreme campaign messages among both Green party candidates and, to a smaller extent, far-right candidates. This radicalization effect,

although lower in magnitude, is also significant at the 1% percent level for candidates of other smaller parties (column 5).[46] Our results suggest that campaign finance regulations influence the extent to which candidates follow a radical party line, and may contribute to polarization among politicians (Canen et al., 2020).

Overall, this heterogeneity exercise suggests that the rhetoric of marginal parties that are not yet part of governing coalitions responds more strongly to the ban on campaign contributions, as compared to well-established parties.[47] This is also true of independent candidates who are not endorsed by any party, with a negative effect of 0.7 percentage point on the frequency of local references (significant at the 1% level) and a small but noticeable radicalization effect (significant at the 5% level). Appendix Table E.11 corroborates this pattern: the negative effect of banning donations on the prevalence of economic issues and its positive effect on both social issues and foreign policy are also larger in size for niche and independent candidates than for mainstream parties (although not all estimates are significant).

Depending on the candidates' characteristics Finally, we explore heterogeneity across different types of candidates within the same party. Columns 1 through 3 of Appendix Table E.12 estimate a version of equation (2) where Corporate Donations$_{ipdt}$ (multiplied by -1) are interacted with each of the individual characteristics included in equation (1). These columns show that the negative impact of banning corporate donations on the prevalence of local references over national ones is stronger among candidates who were incumbents, mayors or held other electoral mandates at the time they received donations (although none of these coefficients is significant at any conventional level). The estimated effect on the frequency of local references is particularly strong for candidates with other mandates (column 2). This result is intuitive: experienced politicians who are already in power and have better local connections, as well as a record of local achievements, were more likely to advertise those key features before the ban. Thus, dropping local references in response to the ban makes a larger difference in their campaign communication.

4.3 Robustness checks

We now discuss the validity of our main result – the negative impact of corporate donations on the prevalence of local references over national ones – and provide a series of robustness checks.

[46] About half of these candidates are affiliated with radical parties, such as Trotskyist parties on the left and nationalist parties on the right.

[47] Seen from the 21st-century perspective, it may be surprising that we consider the Communist party to be a well-established party, while the Green party and the far-right party (*"Front National"*) are presented as outsiders. However, in France during the 1990s', the Communist party was still an important party, and Ministers from the Communist party were governing during François Mitterrand's presidency.

Table 5: Heterogeneity by party

	Local index	Local references	National references	Left-right score	Extremeness
	(1)	(2)	(3)	(4)	(5)
Communist*Corp.Don.	-0.208***	-0.337**	0.224***	-0.009	0.011
	(0.066)	(0.166)	(0.071)	(0.014)	(0.014)
Green*Corp.Don.	-3.438***	-0.828***	7.359***	-0.531***	0.524***
	(0.362)	(0.303)	(0.867)	(0.097)	(0.109)
Socialist*Corp.Don.	-0.167***	-0.227**	0.190**	-0.013	0.006
	(0.049)	(0.092)	(0.081)	(0.009)	(0.008)
Right*Corp.Don.	-0.129***	-0.215***	0.085	-0.004	0.001
	(0.039)	(0.064)	(0.081)	(0.007)	(0.006)
Far-right*Corp.Don.	-0.477	-1.306***	-0.112	0.449	0.489
	(0.614)	(0.309)	(1.484)	(0.539)	(0.539)
Other*Corp.Don.	0.844	1.002	-0.589**	-0.057**	0.260***
	(1.016)	(2.628)	(0.262)	(0.024)	(0.084)
Independent*Corp.Don.	-0.346**	-0.658***	0.211	-0.001	0.045**
	(0.138)	(0.176)	(0.295)	(0.022)	(0.019)
Observations	2602	2602	2602	2602	2602
Mean outcome	-0.652	1.375	3.031	-0.037	0.861
R2-Within	0.036	0.028	0.011	0.008	0.013

Notes: The amount of corporate donations per voter (divided by its standard deviation in 1993) is interacted with indicator variables indicating whether the candidate is endorsed by any of the five main parties, by another smaller party or if the candidate is running as an independent. Other notes as in Table 3.

Alternative specifications Columns 1 through 5 of Appendix Table E.13 show that the negative effect of losing corporate donations on the local index is robust to clustering standard errors at a broader geographical level, and to using different definitions of our treatment variable (i.e., loss in corporate donations), as described in Appendix C.

We also show that our results are robust to estimating the sample average treatment effect of corporate donations with a nearest-neighbor matching estimation (Abadie and Imbens, 2006). We match the 1993 candidates who received corporate donations with candidates who did not but who are "similar" on all other observable dimensions. Specifically, we match observations with replacement on political parties, other candidate-level controls (gender, re-running, incumbency status and holding other political mandates), and a set of district covariates, as described in Section 3. In all specifications, we estimate the bias-corrected treatment effect of Abadie and Imbens (2011).

Appendix Table E.14 presents our results. We show that receiving any corporate donation in 1993 is associated with a decrease in the prevalence of local references over national ones in

manifestos issued between the 1993 and 1997 legislative elections, as compared to manifestos published by otherwise similar candidates. Although the point estimates in columns 1 and 2 fall short of statistical significance, they are comparable in size to our main estimate from Table 3 (column 1), whether we match on candidate-level characteristics or both candidate- and district-level characteristics.[48] The estimated effect on the frequency of local references is significant at the 5% level when matching on all covariates (column 4).

Parallel trends Our difference-in-differences approach relies on the assumption that, among candidates who ran both before and after the ban, trends in campaign communication are similar across candidates who received different amounts of corporate donations before the ban. To ensure its validity, our main specification already controls both for the time-varying factors found to be associated with corporate donations in Section 3.1, and for any party-specific time trend in the prevalence of local references. Column 6 of Table E.13 shows that our estimated effect of losing corporate donations on the local index is robust to adding district times year fixed effects and thus controlling for district-specific time trends as well. Column 7 further shows that controlling for a full set of time-varying district-level controls, including economic indicators from firms and municipalities' finances, yields a similar result.[49] Finally, column 8 shows that the estimated impact of banning corporate donations on the local index is slightly smaller in size (13% of a standard deviation). Nevertheless, it is still negative and statistically significant at the 1% level when interacting candidate controls (both present and past) with the year fixed effects, hence controlling for any differential trends across candidates with different predicted levels of corporate donations, based on their observable characteristics.[50]

A further test for the validity of our identification strategy is to show that trends in the prevalence of local references were uncorrelated with corporate donations before they were banned. However, in our context, the series of campaign finance reforms preceding the 1993 election makes such a test unreliable. Indeed, corporate donations were legalized immediately prior to the 1988 election and, because the CNCCFP was only created in 1990, we do not systematically observe which candidates may have benefited from them and for which amount (see Appendix Section B). Hence, we cannot rule out that candidates receiving donations in 1993 had already experienced the "treatment effect" of receiving new corporate donations

[48] They are also comparable in size to the estimate in column 3 of Appendix Table E.13, in which we estimate equation (2) using an indicator variable equal to one if the candidate received any corporate donation in 1993 as treatment variable : this is a difference-in-differences approach with binary treatment status that is closer in spirit to the matching exercise.

[49] This specification also controls for district-level characteristics of candidates, including the number of candidates from each party, the share of female candidates, incumbents, mayors, re-runners and candidates holding other electoral mandates. We also control for the number of registered voters and the district-level spending limit.

[50] Not all controls included in equation (2) are available for the 1988 elections, so our set of past controls includes indicator variables for being female and for being the incumbent. We also include categorical variables indicating if these past controls are missing, and their interaction with the year fixed effects.

between 1988 and 1993, if they did not receive any in 1988 but received some for the first time in 1993. Anecdotal evidence from departmental-level archival data collection suggests that 1988 donations were negligible compared to 1993: in the 15 departments from which we were able to collect detailed data on candidates' expenditures and revenues in 1988, the 143 candidates who ran both in 1988 and 1993 received an average amount of corporate donations seven times larger in 1993, as compared to 1988.[51] In column 9 of Appendix Table E.13, we estimate equation (2) when interacting the year fixed effects with party contributions, personal contributions, individual donations and corporate donations received in 1988, and a set of variables indicating whether these data are missing (among candidates who run both in 1988 and 1993). The point estimate remains negative and of similar size (14% of a standard deviation) when controlling for differential trends in local index across candidates receiving different amounts of contributions in 1988. This, therefore, controls for any treatment effect that may have affected candidates' communication before 1993, and may have caused trends in local prevalence to diverge after 1993, regardless of the 1995 ban.[52]

While trends in campaign communication between 1988 and 1993 are not necessarily parallel because of changes in campaign finance laws, we may reasonably expect them to be parallel prior to the 1988 reform. Unfortunately, we are not able to test for any correlation between corporate donations received in 1993, nor for any trends in communication before 1988. The 1986 election followed a different electoral rule with a list system at the department level, so there was no candidate-level manifesto issued in that electoral year. Moreover, the 1981 election was followed by a nationwide redistricting that prevents us from linking candidates in 1988 to past district-level outcomes in 1981. Therefore, we propose a less conventional approach to show that our "treatment" (i.e., the amount of corporate donations lost after the ban) is uncorrelated with pre-trends in outcome: we construct mean trends in manifestos' local index at the party times department level, over elections that were held since 1967. We restrict the analysis to candidates from the Communist, Socialist and right-wing parties, which span the whole period. Appendix Figure D.15 shows that, once controlling for the determinants described in Section 3 and included in equation (2), none of these pre-trends in local index is significantly correlated with the amount of corporate donations received in 1993. This suggests that candidates who benefited from corporate contributions in 1993 did *not* tend to run in departments where their party was already increasing the prevalence of local references in electoral discourse before the shocks on campaign financing occurred.

[51] More details can be found in Appendix B.

[52] The small sample of candidates running both in 1988 and 1993 and for whom data on campaign revenues are available does not allow us to replicate our difference-in-differences strategy between 1988 and 1993, and to test for the existence of a pre-ban treatment effect directly. Note that, even if feasible, such an estimation would not necessarily be reliable: unlike our 1993-1997 comparison, the absence of an exogenous shock between 1988 and 1993 does not preclude that effects observed between those years are driven by "reverse causality" and anticipation of future donations.

Finally, as our difference-in-differences approach relies on the inclusion of candidate fixed effects to control for the endogenous allocation of corporate donations among candidates, it mechanically restricts the sample to politicians who run both in 1993 and 1997. We discuss and discard the threat of sample selection bias in Appendix C.2. Overall, we are confident that our empirical strategy captures the causal impact of banning corporate donations on the campaign communication of candidates who benefited from such donations before the ban, as opposed to the effect of confounding trends or changes in sample composition.

5 Mechanisms

We have provided evidence so far that banning corporate donations affects politicians' campaign communication: losing donations pushes candidates to advertise national politics over their local presence, especially candidates from niche parties with radical or issue-specific platforms. These candidates are also found to use more extreme language in response to the ban. In addition, losing donations affects the policy topics candidates choose to emphasize and pushes them to advertise local economic issues less often.

We now discuss several possible mechanisms for these empirical results. Our preferred interpretation is that losing the fundraising connections with corporate donors reduces the salience of certain topics and changes candidates' perception of which issues matter the most to voters – an "electoral effect". We consider and discard several alternative hypotheses. First, a further examination of campaign revenues and heterogeneity across donors suggests that banning corporate donations does not affect electoral discourse through a simple "resource effect"; that is, a negative effect on total revenue that would limit candidates' ability to run a personalized campaign. Second, we look at elected politicians' rhetoric after the ban and do not find evidence of a "quid-pro-quo effect" that would lead politicians to "pay back" their donors and adapt their political agenda to serve their interests.

5.1 Campaign revenue and resource effect

Corporate donations are financial resources that may enable candidates to run a better campaign. In the literature, campaign expenditures are often considered as a means of increasing the amount of information that voters possess on candidates' policy positions and attributes (Baron, 1994; Coate, 2004b,a; Lenz, 2009; Peterson, 2009), through the organization of meetings, the distribution of leaflets or, in our context, the provision of more details in campaign manifestos.[53] Advertising local references may reflect a greater ability to run a targeted campaign, possibly through increased resources, better research and better communication staff,

[53] We do not have information on what candidates spend their electoral resources on, as this information is not available at the level of the candidate in the French context.

and losing the support from corporate donors may force candidates to run a more generic campaign focused on more widely-known national politics.

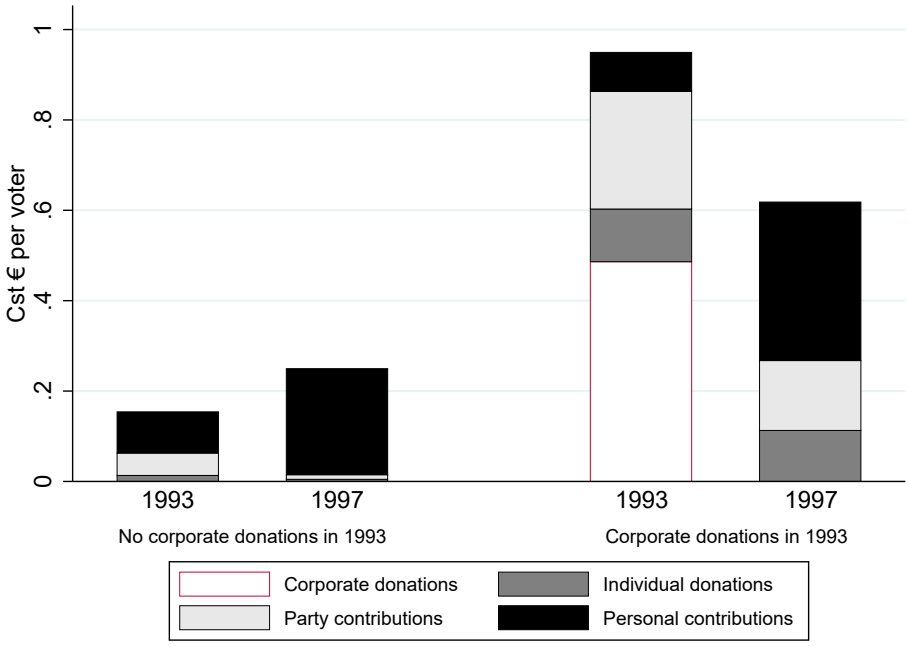
Impact on campaign revenue We first provide evidence that the ban on corporate donations caused candidates' total campaign revenue to fall. Figure 3 displays the composition of total revenue in 1993 and 1997 for candidates who received corporate donations in 1993 and for those who did not. Naturally, the amount of corporate donations drops to zero in 1997, leading to a substantial decrease in total revenues for candidates who received such donations in 1993. Note, however, that the drop in revenues for these candidates is not equal to the drop in corporate donations: while party contributions also decreased slightly between 1993 and 1997, individual donations remained roughly constant and personal contributions increased by a large amount. Party contributions also decreased, while personal contributions increased among candidates who did not receive any corporate donation in 1993, leading to an overall increase in revenues for these politicians.

To further investigate potential substitution effects between corporate donations and other sources of campaign funding (while controlling for overall time trends in campaign financing) we estimate equation (2) using total revenues as the outcome of interest, as well as each source of revenue separately. Appendix Table E.15 shows that a one-euro-per-voter increase in corporate donations increases total revenue by €0.74 per voter (column 1). Conversely, it decreases the amount of individual donations by €0.05 per voter (column 2), the amount of party contributions by €0.14 per voter (column 3) and the amount of personal contributions by €0.11 per voter (column 4). All estimates are significant at the 1% level. The same patterns are visible when estimating the impact of increasing the share of corporate donations in total revenue on the share of revenues coming from each of the other sources (Appendix Table E.16). These results confirm that the loss of corporate donations was partly compensated by substitution effects.

Interestingly, while we could have expected a larger substitution with individual donations – as firm owners and employees may have contributed to 1997 campaigns as individuals instead of legal entities – we find a larger effect for personal and party contributions. This suggests that candidates are able to mobilize their own resources to make up for lost revenue, and that parties act as a compensating mechanism when their candidates are hit by negative revenue shocks.[54]

Heterogeneity across donors Given that we do not observe a *full* substitution effect between corporate donations and other sources of revenue (Figure 3 and column 1 of Appendix

[54] Corporate donations to parties were also banned in 1995, alleviating the concern that firms may still funnel money to specific candidates through contributions to their endorsing party. We also note that the limited substitution effect with individual donations may be partly due to the fact that such donations are capped at a lower level than corporate ones.



Notes: The figure shows the composition of campaign revenue, in 2020 constant euros per voter, for the candidates who received corporate donations in 1993 and for those who did not, in 1993 and 1997 separately. The sample includes all candidates who run both in 1993 and 1997. N=2,832.

Figure 3: Campaign revenue composition in 1993 and 1997

Table E.15), we may expect the impact of banning corporate donations to reflect the effect of decreasing campaign revenue, and not the effect of banning contributions from *corporate* donors specifically. If this were the case, we should see similar relationships between campaign communication and any type of contributions, regardless of where the money comes from. To test for the latter hypothesis, we can only rely on correlations, since the 1995 ban applies exclusively to corporate donations. Importantly, other sources of revenue are endogenously determined by the amount of corporate donations a candidate loses after the ban. Nonetheless, column 1 of Table 6, in which we estimate equation (2) including other sources of revenue as explanatory variables, provides suggestive evidence that the negative and large impact on the local index is specific to the loss of corporate donations: holding corporate donations constant, the correlation with the amount of contributions from other sources (individuals, the candidate herself or their party) is not significant at any level. The estimated negative effect of a one-standard-deviation loss in corporate donations is even larger in size (18% of a standard deviation) when controlling for other contributions, suggesting that our estimates capture the impact of losing corporate donations, rather than the confounded effect of receiving more contributions from other sources as a result.[55]

[55] While contributions from other sources are "bad" controls, since they are endogenously determined by the change in corporate donations, this specification is informative of how the ban on corporate donations can affect campaign communication when controlling for possible substitution effects.

Table 6: Heterogeneity by sources of funding and type of donors

	Local index			
	(1)	(2)	(3)	(4)
Corporate donations (loss)	-0.180***			
	(0.033)			
Individual donations	0.002			
	(0.031)			
Personal contributions	0.027			
	(0.020)			
Party contributions	0.051			
	(0.035)			
Corp.Don from: small donors		-0.082**	-0.080**	-0.094**
		(0.037)	(0.037)	(0.037)
Corp.Don from: multiple donors		-0.045		
		(0.030)		
Corp.Don from: multi-district donors			-0.034	
			(0.029)	
Corp.Don from: single-district donors			-0.069**	
			(0.031)	
Corp.Don from: one-party donors				0.022
				(0.032)
Corp.Don from: multi-party donors				-0.046*
				(0.026)
Observations	2602	2602	2602	2602
Mean outcome before ban	-0.652	-0.652	-0.652	-0.652
R2-Within	0.033	0.023	0.026	0.023

Notes: In column 1, revenue from each source of campaign funding (per voter) is divided by its respective standard deviation in 1993 and the amount of corporate donations is multiplied by -1. In columns 2 through 4, the amount of corporate donations per voter received by each candidate is broken down into several categories depending on which type of donor they are from, and the sample is restricted to candidates for whom data on disaggregated donations is available. In column 2, small donors make one single donation and multiple donors make donations to multiple candidates. In column 3, donors having made more than one donation are split between multi-district (donations to candidates running in different districts) and single-district donors (donations to candidates running in the same district). In column 4, donors having made more than one donation are split between multi-party (donations to candidates endorsed by different parties) and single-party donors (donations to candidates endorsed by the same party). Other notes as in Table 3, column 1.

We also find evidence that, among corporate donors, the identity of the donor matters. In columns 2 to 4, we break down the amount of corporate donations into donations made by different types of donors, as described in Section 2.2. Column 2 suggests that the negative effect of losing corporate donations on the prevalence of local-vs.-national references is larger in size and only significant when donations are made by small donors (i.e, donors who make a single contribution) as opposed to multiple donors.[56] Column 3 of Table 6 further shows that the estimated impact on the local index is stronger both for these small donors and, among larger donors, for local donors who give to several candidates running in the same district, while the effect of donations from donors who give across districts is not significant. Next, we decompose the amount of donations made by donors who give to candidates endorsed by the same party, and non-partisan donors who make contributions across parties (column 4). Our results suggest that the prevalence of local references decreases with the loss of contributions from these non-partisan donors exclusively, while losing donations from single-party donors has a *positive* (although insignificant) impact on the local index.

Overall, these heterogeneous effects across different sources of funding and different types of corporate donor rule out a pure resource effect as the main mechanism behind our results: the negative impact of banning donations on candidates' propensity to advertise their local presence cannot be solely explained by the fact that eliminating corporate donations reduces their total campaign revenue.

5.2 Service-induced donations and quid-pro-quo effect

We now discuss whether our empirical findings are driven by the quid-pro-quo effect of service-induced contributions. Private firms may contribute to politicians' campaigns in exchange for economic favors or policy benefits, and these quid-pro-quo relationships may shape politicians' electoral discourse.[57]

Section 5.1 provides some evidence consistent with this hypothesis, since the effect of banning donations depends on the characteristics of the corporate donors. In particular, the negative effect on local references is driven by the lost support from small, local and non-partisan donors – who may have been hoping for local economic returns when they contributed – while the effect of losing support from large partisan donors is positive and insignificant (Table 6). We further investigate whether the impact of losing donations depends on the donor's sector

[56] Appendix Table E.17 shows that, although smaller in magnitude, this discrepancy remains when defining small donors as those making up to two or three donations (columns 1 and 2), and that it is particularly strong when defining small donors as those making up to five donations, while multiple donors are large donors who make more than five donations (column 3).

[57] François and Sauger (2006) argue that French corporate donors involved in the 1993 campaign donated in order to seek access to power and its associated benefits. The fact that a large share of donors in our sample give to candidates of different parties, and that experienced politicians receive more donations than others, is consistent with this hypothesis. However, our analysis of the district-level determinants of donations and the limited role of local economic activity calls this conclusion into question (see Section 3.1).

of activity. Appendix Table E.18 presents the results.[58] We find a more negative effect on the local index and even more so on the frequency of local references (column 2) for donations from the environmental sector. These companies typically specialize in water exploitation and distribution or waste management, activities that rely heavily on public contracts from local governments, such as departmental or municipal councils. Although representatives in the National Assembly cannot play a direct role in the allocation of such local contracts, advertising their local presence in their campaign communication may reflect candidates' intention to exert influence and exploit their local connections in favor of their corporate donors.[59] Similarly, Appendix Table E.19 suggests that the negative effect of banning corporate donations on the prevalence of economic topics is driven by the loss of donations from firms in the economic sector (with a point estimate of -0.9 percentage point that is significant at the 10% level), and, to a smaller extent, from firms in the environmental, construction, and industry sectors. These results suggest that banning corporate donations pushes candidates to stop advertising topics and issues that are likely of interest to their donors.

To further discuss whether our empirical findings are driven by a quid-pro-quo effect, we consider two possible types of connections between politicians and donors. First, candidates may use their manifesto *ex ante* to persuade donors to contribute to their campaign by promising particularized benefits in return. As manifestos are distributed at the very end of the electoral season, it is unlikely that candidates use their manifesto as a short-run fundraising tool.[60] Second, and more realistically, politicians may "pay back" their donors after the election – whilst also securing possible future campaign contributions from them – so that adjusting their campaign communication is the first step in a longer-term shift in a candidate's political agenda. Therefore, we expect donations to shape elected MPs' behavior and rhetoric once they are in office, and arguably more so than they shaped their campaign messages.

We test whether banning corporate donations, and removing politicians' pay-back obligation toward their donors, changes MPs' discourse once elected. To do so, we estimate equation (2) on the sub-sample of elected representatives.[61]

[58] Unsurprisingly, the estimated impact is much larger in size for corporate donors of an "unknown" sector (column 1), as these donors are typically small firms whose sector of activity was not identified and that also tend to be small donors.

[59] For a similar argument on political connections and French MPs' influence at the local level, see Delatte et al. (2020).

[60] Candidates who anticipate running in a second election round may still try to secure additional contributions for the few days of campaigning leading to the runoff, but given the short period of time between the first and second rounds, this seems unlikely. In addition, we do not find any significant impact of corporate donations on the number of references to campaign financing in candidate manifestos, ruling out a reverse causality interpretation in which candidates attract more corporate donations because they explicitly called for such donations in their campaign communication *ex ante*.

[61] Given our difference-in-differences strategy, our sample is restricted to representatives who were elected twice. In Appendix Table E.20, we estimate the effect of losing corporate donations on the prevalence of local references in the campaign communication strategies of this sub-sample of elected politicians. Despite the much lower number of observations, the estimates we obtain are consistent with those presented in Table 3, columns 1=3.

Legislative activity We first consider the overall number of written questions to the government issued by representatives during their mandate, which are typically used by politicians to voice their constituents' concerns.[62] Column 1 of Table 7, Panel (a), shows a positive (although insignificant) effect of banning corporate donations on this outcome, suggesting that elected politicians did not stop raising these local concerns in response to the ban. In column 2, we construct the local index described in Section 2.5 using the content of all written questions (aggregated at the representative level) and find that losing corporate donations has a significant and negative impact on the prevalence of local references over national ones (7% of a standard deviation). However, columns 3 and 4 show that this negative effect is driven by a large positive impact on the frequency of national references (0.5 percentage point), while the impact on the frequency of local references is also positive but smaller (0.2 percentage point). This pattern differs substantially from the estimated negative impact on local references in campaign manifestos (Table 3, columns 1 to 3) and suggests that banning corporate donations pushes candidates to make more references to national politics once they are in office, but does not divert their attention away from local issues.

In Table 7, Panel (b), we estimate the impact of banning corporate donations on representatives' debate interventions. None of the estimates are statistically significant (possibly due to smaller sample sizes) but their directions and magnitudes suggest an effect opposite to that observed during the campaign: losing donations tends to increase the frequency of local references while decreasing the frequency of national references. These legislative debates tend to examine key issues of national politics (unlike written questions), especially the most heated debates that are more visible to the public. In Appendix Table E.21, we decompose the overall effect from Table 7 between interventions made during low-visibility debates (proxied as debates with few interventions) vs. high-visibility debates (those with many interventions). Interestingly, estimates from Panel (a) suggest that the effect of losing corporate donations on low-visibility debates is similar to the effect on written questions, which is symmetrically opposed to the effect on high-visibility debates. It suggests that banning donations may influence elected politicians' discourse differently, depending on the likelihood of their words becoming public knowledge. However, this evidence is only suggestive, as none of the coefficients in Appendix Table E.21 are statistically significant.

Overall, we cannot conclude that the negative impact of banning corporate donations on candidates' local advertising in their campaign communication strategies persists in their communication once elected. Appendix Table E.22 yields similar conclusions about the prevalence of different policy topics: while losing corporate donations significantly decreases the prevalence of economic issues and increases the prevalence of social issues in campaign man-

[62] French MPs are supposed to represent voters' general interests, rather than defending the specific interests of their constituency; however, these written questions still allow them to engage with some local issues and show their responsiveness to their constituents' needs.

Table 7: Impact of corporate donations on legislative activity and discourse

(a) Written questions to the government

	Number of questions	Local index	Local references	National references
	(1)	(2)	(3)	(4)
Corporate donations (loss)	4.390	-0.070	0.017*	0.047**
	(6.413)	(0.045)	(0.010)	(0.023)
Observations	416	416	416	416
Mean outcome	113.731	-0.880	0.188	0.708
R2-Within	0.028	0.051	0.063	0.044

(b) Debate interventions

	Number of interventions	Local index	Local references	National references
	(1)	(2)	(3)	(4)
Corporate donations (loss)	-1.851	0.055	0.033	-0.070
	(3.379)	(0.049)	(0.025)	(0.097)
Observations	356	354	354	354
Mean outcome	27.674	-1.876	0.241	3.832
R2-Within	0.042	0.021	0.011	0.017

Notes: We use one observation per elected representative per year. The sample includes all representatives elected both in 1993 and 1997. It is further restricted to candidates who issued written questions during their mandate (Panel (a)), and those who intervened during legislative debates and whose intervention content is non-empty after text pre-processing (Panel (b)). Other notes as in Table 3.

ifestos (Table 4), it has no such significant effect on the prevalence of different policy topics in either written questions or debate interventions – and it even increases the prevalence of economic issues in debate interventions.

Non-elected candidates The results presented in Table 7 do not rule out *all* forms of political payback to corporate donors, such as the under-the-table influence politicians can exert on local politics, which we do not observe. In addition, this analysis is limited to elected politicians, while non-elected candidates may also adapt their longer-term political agenda to serve their donors' interests – especially if they hold other electoral mandates (Appendix Table E.12). The strong rhetorical response from non-mainstream candidates (Table 5) who have virtually no chance of winning is not consistent with this interpretation. Given that their influence is likely limited and that they cannot credibly provide particularized benefits to their donors in the first place, the effects of the ban on niche and independent candidates' discourse is unlikely to reflect the end of their quid-pro-quo relationships.

In conclusion, while we are confident that the impact of banning corporate donations on electoral discourse is not driven by a pure resource effect (Section 5.1), the evidence of a quid-pro-quo effect is mixed. We cannot rule out that service-induced donations play a role in

shaping campaign messages, and that the ban affected campaign communication by halting these relationships. Thus, we argue that a third mechanism is contributing to the effects we observe.

5.3 Expressive donations and electoral effect

Corporate donations may be driven by donors' preference for different politicians due to their policy positions or their attributes and their expressive support for their preferred candidates (Ensley, 2009; Bouton et al., 2018). Even though corporate donors do not expect any particularized benefits in return, fundraising activities may shift candidates' perceptions of which issues their supporters care about and incentivize them to address these issues during the campaign to secure votes (i.e., an electoral effect).

This interpretation is consistent with our different results. Banning donations from small and local corporate donors, as well as donors who rely on local public contracts such as the environmental sector, may lead candidates to decrease the prevalence of local references and economic issues in their campaign communication because they no longer feel the need to address these topics to please their supporters. For instance, receiving donations from a local water treatment plant may draw the candidate's attention to the need to modernize some local infrastructures and secure water quality. This pushes them to advertise their local presence during the campaign to show voters that they are aware of these issues and that they will represent their local interests in the National Assembly (even though they are not directly responsible for any local environmental or construction policy). By cutting this fundraising relationship between the plant and the politician, the ban on corporate donations may have decreased the salience of these local issues.[63] Candidates may still be aware of the local concerns of their constituents after the ban, but without any contribution from local corporate donors to serve as an extra nudge, they are less likely to engage with these concerns during the campaign and more likely to adopt an "easy" communication strategy focused on national politics instead.

Niche and independent candidates may be particularly responsive because it is more costly for them to advertise their local presence instead of their strong ideological positions, as compared to mainstream candidates. The ban on corporate donations cuts the incentive to address their local and non-partian donors' topics of interest, and encourages marginal candidates to focus on the policy proposals that they are most attached to instead, resulting in a more polarized discourse among radical and issue-specific candidates (Table 5, column

[63] Donations from private individuals could in principle have similar effects. However, they may be less influential than donations from corporate donors because they tend to be smaller in size (see Appendix B) and because politicians are unlikely to recognize the name of every constituent sending them a check, and to infer what they should campaign on to satisfy these core supporters. Candidates are more likely to know every firm among their contributors and to know which issues those firms, their owners and employees, would care about most.

5).

Based on the interpretation that corporate donations shape political discourse through an electoral effect, their minimal impact on discourse once a candidate is elected (Table 7) may reflect the existence of cheap talk: candidates adjust their campaign communication strategically to secure votes, but these adjustments do not necessarily reflect promises to be kept once in office. Voters may be myopic and, given the long time span between two legislative elections – which are typically held every five years – they may forget precisely what politicians advertised in their previous campaign when the next election comes around.[64] Therefore it is optimal for candidates to adopt the strategy that maximizes their expected vote share in the current election, anticipating that their future re-election will not depend on whether their legislative activity matched the content of their past campaign communication or not. Alternatively, politicians themselves may be myopic: they campaign on topics that they genuinely perceive as important during the campaign season, even though the office they are running for will not allow them to address these issues directly once elected, such as local economic issues for national MPs.

In either case, our findings suggest that the influence of corporate donors does not only determine the type of information provided to voters before they cast their vote, but also the quality and reliability of this information. Banning contributions from small and non-partisan corporate donors may disincentivize candidates from advertising local issues and push radical candidates to use a more polarized rhetoric, resulting in campaign messages that are more national and more extreme but also better-aligned with candidates' party platforms and with the national policy work that they would engage with if elected.

6 Conclusion

This paper uses a novel dataset that combines information on donations received by candidates running for parliamentary seats and the individual campaign manifestos issued prior to the elections to study the effects of banning corporate donations on political discourse. We use a difference-in-differences approach to estimate the causal impact of losing donations on the content of candidates' campaign communication.

We show that banning corporate donations encourages politicians who previously benefited from these donations to de-emphasize their local presence in their campaign communication, and to favor national politics instead. Losing contributions from small donors, as well as from non-partisan donors who give to candidates across different parties, is particularly impactful. The ban on corporate donations also decreases the prevalence of local economic issues

[64] Existing research has shown that voters only take into account the conditions over the year preceding the election, not the politicians' full term, when deciding whether or not to vote for the incumbent (e.g. Healy and Lenz, 2014).

in discourse, and pushes candidates to address other policy topics, such as social issues or foreign policy. It does not shift electoral discourse toward one ideological side or the other on average, but it does push candidates from niche parties to use more extreme rhetoric in their campaigning. We do not find similar effects of corporate donations on legislative activity and political discourse once a candidate is elected, suggesting that changes in campaign communication strategies do not reflect the end of long-term quid-pro-quo relationships between politicians and their donors. Instead, we argue that receiving donations from small and non-partisan corporate donors raises the salience of certain issues during the campaign and incentivizes politicians to address these issues in their communication with voters, without necessarily affecting their political agenda and the issues they work on once in office.

These findings shed new light on the influence of money in politics and the role of campaign finance regulations, providing evidence that campaign contributions and the identity of the donors affect what candidates focus on during the electoral season. While our findings draw from French data and a policy reform enacted in the 1990s, we argue that they are still of relevance today and hold lessons for other countries. First, in most democracies and parliamentary systems, politicians need to produce local-level communication when running for election, through manifestos or other advertising tools. In the French context, candidate manifestos are still a primary method of communication for politicians to address voters and for citizens to learn about the candidates. Hence, we expect candidates to respond to campaign contributions in the same way as they did in the 1990s. Moreover, while we study manifestos produced by individual candidates, political parties also issue manifestos and receive political donations. Our results may thus also have implications for the design of party-level communication strategies (Eder et al., 2017).

Second, bans on corporate donations have grown increasingly common over the last decade (e.g., Lithuania in 2012, Spain in 2014 and Brazil in 2015). While the focus of the campaign finance literature, both empirical and theoretical, has been mainly on large donors, we highlight the importance of considering small donors as well when evaluating campaign finance regulations. On the one hand, our results suggest that banning corporate donations (and thus preventing big corporations but also small and local donors from contributing) may shift electoral discourse away from local campaigning and encourage candidates outside the mainstream parties to use more polarized rhetoric. This may have longer-term consequences for the type of political discourse also found in the media. On the other hand, campaign contributions may push voters away from their pre-advertising dispositions; not necessarily because receiving more donations allows unpopular candidates to run *more* advertising and gain prestige in that way (Martin, 2014), but rather because receiving contributions from corporate donors influences the *content* of campaign advertising and the information made available to voters during the electoral season.

While there is a large body of empirical literature documenting the effects of campaign expenditures on electoral outcomes, the debate is ongoing as to *how* money influences voters. Our paper provides evidence that campaign contributions influence voters through their indirect effect on politicians: by affecting candidates' perceptions of voters' concerns and the salience of different issues, financial contributions shape the content of campaign advertising distributed during the electoral season and, ultimately, the information voters use to form their voting decisions.

References

Abadie, A. and Imbens, G. W. (2006). Large Sample Properties of Matching Estimators for Average Treatment Effects. *Econometrica*, 74(1):235–267.

Abadie, A. and Imbens, G. W. (2011). Bias-Corrected Matching Estimators for Average Treatment Effects. *Journal of Business & Economic Statistics*, 29(1):1–11.

Abramowitz, A. I. (1988). Explaining senate election outcomes. *American Political Science Review*, 82(2):385–403.

Adams, J. (2012). Causes and Electoral Consequences of Party Policy Shifts in Multiparty Elections: Theoretical Results and Empirical Evidence. *Annual Review of Political Science*, 15(1):401–419.

Ansolabehere, S., de Figueiredo, J. M., and Snyder, J. M. J. (2003). Why is There so Little Money in U.S. Politics? *Journal of Economic Perspectives*, 17(1):105–130.

Avis, E. (2020). Interest Groups, Campaign Finance and Policy Influence: Evidence from the U.S. Congress. Mimeo.

Avis, E., Ferraz, C., Finan, F., and Varjao, C. (2021). Money and politics: The effects of campaign spending limits on political entry and competition. *American Economic Journal: Applied Economics*, Forthcoming.

Baltrunaite, A. (2020). Political contributions and public procurement: evidence from lithuania. *Journal of the European Economic Association*, 18(2):541–582.

Barber, M. J. (2016). Ideological Donors, Contribution Limits, and the Polarization of American Legislatures. *The Journal of Politics*, 78(1):296–310.

Baron, D. P. (1994). Electoral Competition with Informed and Uniformed Voters. *The American Political Science Review*, 88(1):33–47.

Bekkouche, Y., Cagé, J., and Dewitte, E. (2022). The heterogeneous price of a vote: Evidence from multiparty systems, 1993–2017. *Journal of Public Economics*, 206:104559.

Bertrand, M., Bombardini, M., Fisman, R., Hackinen, B., and Trebbi, F. (2021). Hall of Mirrors: Corporate Philanthropy and Strategic Advocacy. *The Quarterly Journal of Economics*, 136(4):2413–2465.

Bertrand, M., Kramarz, F., Schoar, A., and Thesmar, D. (2018). The Cost of Political Connections. *Review of Finance*, 22(3):849–876.

Boas, T. C., Hidalgo, F. D., and Richardson, N. P. (2014). The Spoils of Victory: Campaign Donations and Government Contracts in Brazil. *The Journal of Politics*, 76(2):415–429.

Bombardini, M. and Trebbi, F. (2011). Votes or money? Theory and evidence from the US Congress. *Journal of Public Economics*, 95(7–8):587–611.

Bonica, A. (2014). Mapping the Ideological Marketplace. *American Journal of Political Science*, 58(2):367–386.

Bouton, L., Cagé, J., Dewitte, E., and Pons, V. (2021). Small Campaign Contributions. Working paper.

Bouton, L., Castanheira, M., and Drazen, A. (2018). A Theory of Small Campaign Contributions. NBER Working Papers 24413, National Bureau of Economic Research, Inc.

Cagé, J. and Dewitte, E. (2021). It Takes Money to Make MPs : New Evidence from 150 Years of British Campaign Spending. CEPR Discussion Paper 16586, C.E.P.R. Discussion Papers.

Cagé, J. and Guillot, M. (2021). Is Charitable Giving Political? Evidence from Wealth and Income Tax Returns. Working paper, Sciences Po Paris.

Canen, N., Kendall, C., and Trebbi, F. (2020). Unbundling polarization. *Econometrica*, 88(3):1197–1233.

Catalinac, A. (2018). Positioning under alternative electoral systems: Evidence from japanese candidate election manifestos. *American Political Science Review*, 112(1):31–48.

Chamon, M. and Kaplan, E. (2013). The Iceberg Theory of Campaign Contributions: Political Threats and Interest Group Behavior. *American Economic Journal: Economic Policy*, 5(1):1–31.

Coate, S. (2004a). Pareto-Improving Campaign Finance Policy. *The American Economic Review*, 94(3):628–655.

Coate, S. (2004b). Political Competition with Campaign Contributions and Informative Advertising. *Journal of the European Economic Association*, 2(5):772–804.

Cruz, C., Keefer, P., Labonne, J., and Trebbi, F. (2018). Making Policies Matter: Voter Responses to Campaign Promises. Working Paper 24785, National Bureau of Economic Research.

Delatte, A. L., Matray, A., and Pinardon Touati, N. (2020). Private credit under political influence: Evidence from france.

Eder, N., Jenny, M., and Müller, W. C. (2017). Manifesto functions: How party candidates view and use their party's central policy document. *Electoral Studies*, 45:75–87.

Ensley, M. J. (2009). Individual Campaign Contributions and Candidate Ideology. *Public Choice*, 138(1/2):221–238.

Erikson, R. S. and Palfrey, T. R. (1998). Campaign Spending and Incumbency: An Alternative Simultaneous Equations Approach. *The Journal of Politics*, 60(2):355–373.

Feltovich, N. and Giovannoni, F. (2015). Selection vs. accountability: An experimental investigation of campaign promises in a moral-hazard environment. *Journal of Public Economics*, 126:39–51.

Fisman, R. (2001). Estimating the Value of Political Connections. *The American Economic Review*, 91(4):1095–1102.

Foucault, M. and François, A. (2005). Le rendement des dépenses électorales en France. Le cas des élections législatives de 1997. *Revue économique*, 56(5):1125–1143.

Fouirnaies, A. and Hall, A. B. (2018). How Do Interest Groups Seek Access to Committees? *American Journal of Political Science*, 62(1):132–147.

Fowler, A., Garro, H., and Spenkuch, J. L. (2020). Quid pro quo? corporate returns to campaign contributions. *The Journal of Politics*, 82(3):844–858.

François, A. and Phélippeau, É. (2015). *Le financement de la vie politique: Réglementations, pratiques et effets politiques*. Armand Colin.

François, A. and Sauger, N. (2006). Groupes d'intérêt et financement de la vie politique en france. *Revue française de science politique*, 56(2):227–254.

François, A., Visser, M., and Wilner, L. (2016). Using Political Financing Reforms to Measure Campaign Spending Effects on Electoral Outcomes. CESifo Working Paper 6232.

Gaultier-Voituriez, O. (2016). Archelec, les archives électorales de la ve république, du papier au numérique. *Histoire@ Politique*, (3):213–220.

Gentzkow, M., Shapiro, J. M., and Taddy, M. (2019). Measuring Group Differences in High-Dimensional Choices: Method and Application to Congressional Speech. *Econometrica*, 87(4):1307–1340.

Gerber, A. (1998). Estimating the Effect of Campaign Spending on Senate Election Outcomes Using Instrumental Variables. *The American Political Science Review*, 92(2):401–411.

Gimpel, J. G., Lee, F. E., and Kaminski, J. (2006). The Political Geography of Campaign Contributions in American Politics. *The Journal of Politics*, 68(3):626–639.

Gordon, S. C., Hafer, C., and Landa, D. (2007). Consumption or Investment? On Motivations for Political Giving. *The Journal of Politics*, 69(4):1057–1072.

Granzier, R., Pons, V., and Tricaud, C. (2019). The large effects of a small win: How past rankings shape the behavior of voters and candidates. Technical report, National Bureau of Economic Research.

Green, D. P. and Krasno, J. S. (1988). Salvation for the Spendthrift Incumbent: Reestimating the Effects of Campaign Spending in House Elections. *American Journal of Political Science*, 32(4):884–907.

Gulzar, S., Rueda, M. R., and Ruiz, N. A. (2021). Do campaign contribution limits curb the

influence of money in politics? *American Journal of Political Science*.

Healy, A. and Lenz, G. S. (2014). Substituting the end for the whole: Why voters respond primarily to the election-year economy. *American Journal of Political Science*, 58(1):31–47.

Jacobson, G. C. (1978). The Effects of Campaign Spending in Congressional Elections. *The American Political Science Review*, 72(2):469–491.

Jacobson, G. C. (2006). Campaign spending effects in U.S. Senate elections: Evidence from the National Annenberg Election Survey. *Electoral Studies*, 25(2):195–226.

Kalla, J. L. and Broockman, D. E. (2016). Campaign contributions facilitate access to congressional officials: A randomized field experiment. *American Journal of Political Science*, 60(3):545–558.

Kendall, C., Nannicini, T., and Trebbi, F. (2015). How Do Voters Respond to Information? Evidence from a Randomized Campaign. *American Economic Review*, 105(1):322–353.

Le Pennec, C. (2020). Strategic campaign communication: Evidence from 30,000 candidate manifestos. SoDa Laboratories Working Paper Series 2020-05, Monash University, SoDa Laboratories.

Lenz, G. S. (2009). Learning and Opinion Change, Not Priming: Reconsidering the Priming Hypothesis. *American Journal of Political Science*, 53(4):821–837.

Levitt, S. D. (1994). Using Repeat Challengers to Estimate the Effect of Campaign Spending on Election Outcomes in the U.S. House. *Journal of Political Economy*, 102(4):777–798.

Martin, G. J. (2014). The informational content of campaign advertising. *mimeographed, Emory*.

McCarty, N., Poole, K. T., and Rosenthal, H. (2016). *Polarized America: The Dance of Ideology and Unequal Riches*. Walras-Pareto Lectures. MIT Press.

Morton, R. and Cameron, C. (1992). Elections And The Theory Of Campaign Contributions: A Survey And Critical Analysis. *Economics and Politics*, 4(1):79–108.

OpinionWay (2017). Les Français et les programmes électoraux. Sondage OpinionWay pour Le Printemps de l'Economie.

Palda, F. and Palda, K. (1998). The Impact of Campaign Expenditures on Political Competition in the French Legislative Elections of 1993. *Public Choice*, 94(1/2):157–174.

Peterson, D. A. M. (2009). Campaign Learning and Vote Determinants. *American Journal of Political Science*, 53(2):445–460.

Powell, E. N. and Grimmer, J. (2016). Money in exile: Campaign contributions and committee access. *The Journal of Politics*, 78(4):974–988.

Rhodes, J. H., Schaffner, B. F., and Raja, R. J. L. (2018). Detecting and Understanding Donor Strategies in Midterm Elections. *Political Research Quarterly*, 71(3):503–516.

Taddy, M. (2013). Multinomial Inverse Regression for Text Analysis. *Journal of the American Statistical Association*, 108(503):755–770.

Taddy, M. (2015). Distributed multinomial regression. *The Annals of Applied Statistics*, 9(3):1394–1414.

Taddy, M. (2017). One-step estimator paths for concave regularization. *Journal of Computational and Graphical Statistics*, 26(3):525–536.

Teso, E. (2020). What drives US Corporate Elites' Campaign Contribution Behavior?". Working paper.

Titl, V. and Geys, B. (2019). Political donations and the allocation of public procurement contracts. *European Economic Review*, 111:443–458.

Online Appendix to the Paper: Corporate Donations and Political Rhetoric: Evidence from a National Ban

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March 31, 2022

Contents

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A Data

A.1 Corporate donations

Data on corporate donations to candidates in 1993 come from the reports published by the CNCCFP after the examination of candidates' account. For each candidate, we digitize the campaign accounts that include the comprehensive list of corporate donors and the amounts given. An example of the data is shown in Figure D.1. In total, 14,770 donations were received by 1,647 candidates (so around one third of the candidates). We show descriptive statistics on these corporate donations in Table 2.

A.1.1 Donor identification

The first step of the cleaning consisted in creating a unique donor identifier. We retrieve the list of all donors' name as they appear in the reports, remove stopwords, and homogenize numeric characters in plain words. For national companies where the local branch was specified in the donor name, we attribute a common donor code. For instance, the firm *COLAS* gave to candidates through its subsidiaries *COLAS MEDITERRANNEE* or *COLAS SUD OUEST*. To separate firms including a geographical attribute in its legal denomination from local branches, we use an algorithm to check on the website Societe.com whether the company was considered as the mother entity. Yet, a certain number of firms active in 1993 have ceased activity since then and their record is not available online. We conduct a second search using data from the INSEE (the French national statistical institute) database of French firms active in 1993. At the end of this procedure, we are left with 10,470 unique donors.

As a note of caution, we cannot exclude that a firm appearing with two different names and not matched with the INSEE dataset (for instance, an entity named both with an acronym and with the plain denomination) is not considered as two different donors. We conduct further manual checks to ensure that the scale of such measurement error is limited. Moreover, to avoid bias stemming from this type of error, we choose to distinguish between single and multiple donors rather than considering the number of donations of each donor in the empirical analysis performed in Section 5. This allows us to test for the robustness of our heterogeneity results when defining multiple donors as entities giving alternatively more than one, more than two, or more than five donations (see Section 5 and Table E.17).

A.1.2 Sectors of activity

To complement our donor dataset, we look at their sector of activity. Given that the raw data only provide the name of the donor, without any further information or firm identifier, and that the data date back to 1993, retrieving this sector is a challenging exercise. To do so, we first merge the donors with firm records from the INSEE or from societe.com. These

two datasets provide the company's economic sector, following the French economic sector nomenclature (the *Nomenclature d'Activité Francaise* – NAF).[1] We link the NAF code with a broader sector of activity, as a parallel to the topic classification performed on manifesto content (Section 2.5). Table A.1 shows the equivalences we propose.

Second, we take advantage of the fact that firms' names are sometimes explicit about the type of activity of the donor and therefore use those to manually classify corporations.[2] At the end of the procedure, we manage to identify the sector of activity of about half of the firms in our sample: Table E.4 shows summary statistics across sectors of activity: the most represented sectors are the construction and the retail sectors. Donations vary noticeably across sectors: as shown in Figure A.1, both the number of donations per donor and the average donation amount are higher among donors from the environment/energy and the construction sectors.

A.2 Campaign manifestos

Campaign manifestos are a key part of the French electoral campaigns, and represent one of the three main parts of official electoral propaganda (together with ballots and election posters). Candidates are responsible for the printing of these manifestos; this cost can be refunded by the state if they gather at least 5% of the votes during the first round of the election (Electoral law, articles R39 and L216). The format of the manifestos must follow certain criteria. More specifically, electoral manifestos must have a maximum size of 210x297 millimeters, and a weight ranging between 60 and 80 grams per square meter (Electoral law, article R29). Furthermore, they cannot combine the three colors of the French flag (blue, white and red, article R27 of the electoral law), except if they are part of a party's emblem. If these constraints are met, the manifestos are mailed to voters by an official local propaganda committee, together with ballots, maximum four days before the election (for the first round), and three days before the second round when there is a runoff (Electoral law, articles R34 and R38).

In a survey published before the 2017 Presidential election (OpinionWay, 2017), 24% of citizens declared that manifestos were among the three most important ways of getting information about the candidates. By comparison, television was mentioned by 64% of them, online media by 26%, paper news by 18% and radio by 15%. The fact that, in 2017, candidates' manifestos were mentioned about as often as online media suggests that they are not a negligible part of the heavy campaign communication voters receive during the few weeks leading to the election. In all likelihood, this number is a lower bound for the share of voters who learnt about their candidates thanks to the manifestos over our sample period, when

[1] For more details, see https://www.insee.fr/fr/information/2120875 (in French).

[2] Note that we use the set of firms that we successfully allocated to a sector of activity to refine the manual name cleaning strategy.

Table A.1: Correspondences between sector codes (NAF) and ministries

Agriculture
- Culture et production animale, chasse et services annexes (01) ; - Sylviculture et exploitation forestière (02) ; - Pêche et aquaculture (03) ; - Activités vétérinaires (75) ;

Construction
- Captage, traitement et distribution d'eau (36) ; - Collecte et traitement des eaux usées (37) ; - Collecte, traitement et élimination des déchets ; récupération (38) ; - Dépollution et autres services de gestion des déchets (39) ; - Construction de bâtiments (41) ; - Génie civil (42) ; - Travaux de construction spécialisés (43) ; - Transports terrestres et transport par conduites (49) ; - Transports par eau (50) ; - Transports aériens (51) ; - Entreposage et services auxiliaires des transports (52) ; - Activités d'architecture et d'ingénierie ; activités de contrôle et analyses techniques (71) ; - Services relatifs aux bâtiments et aménagement paysager (81)

Culture
- Édition (Édition) ; - Production de films cinématographiques, de vidéo et de programmes de télévision ; enregistrement sonore et édition musicale (59) ; - Programmation et diffusion (60) ; - Activités créatives, artistiques et de spectacle (90) ; - Bibliothèques, archives, musées et autres activités culturelles (91)

Defense
none

Economy
- Programmation, conseil et autres activités informatiques ; - Services d'information (62) ; - Activités des services financiers, hors assurance et caisses de retraite (64) ; - Assurance (65) ; - Activités auxiliaires de services financiers et d'assurance (66) ; - Activités immobilières (68) ; - Activités juridiques et comptables (69) ; - Activités des sièges sociaux ; conseil de gestion (70) ; - Recherche-développement scientifique (72) ; - Publicité et études de marché (73) ; - Autres activités spécialisées, scientifiques et techniques (74) ; - Activités des agences de voyage, voyagistes, services de réservation et activités connexes (79) ; - Activités administratives et autres activités de soutien aux entreprises (82) ; - Organisation de jeux de hasard et d'argent (92)

Education
- Enseignement (85) ; **Employment** ; - Activités liées à l'emploi (78) ; - Activités des ménages en tant qu'employeurs de personnel domestique (97) ; - Activités des organisations associatives (94) ; - Activités indifférenciées des ménages en tant que producteurs de biens et services pour usage propre (98)

Environment
- Captage, traitement et distribution d'eau (36) ; - Collecte et traitement des eaux usées (37) ; - Collecte, traitement et élimination des déchets ; récupération (38) ; - Dépollution et autres services de gestion des déchets (39) ; - Services relatifs aux bâtiments et aménagement paysager (81)

Europe
none

Foreign
- Activités des agences de voyage, voyagistes, services de réservation et activités connexes (79)

Health
- Activités vétérinaires (75) ; - Activités pour la santé humaine ; - Hébergement médico-social et social (86)

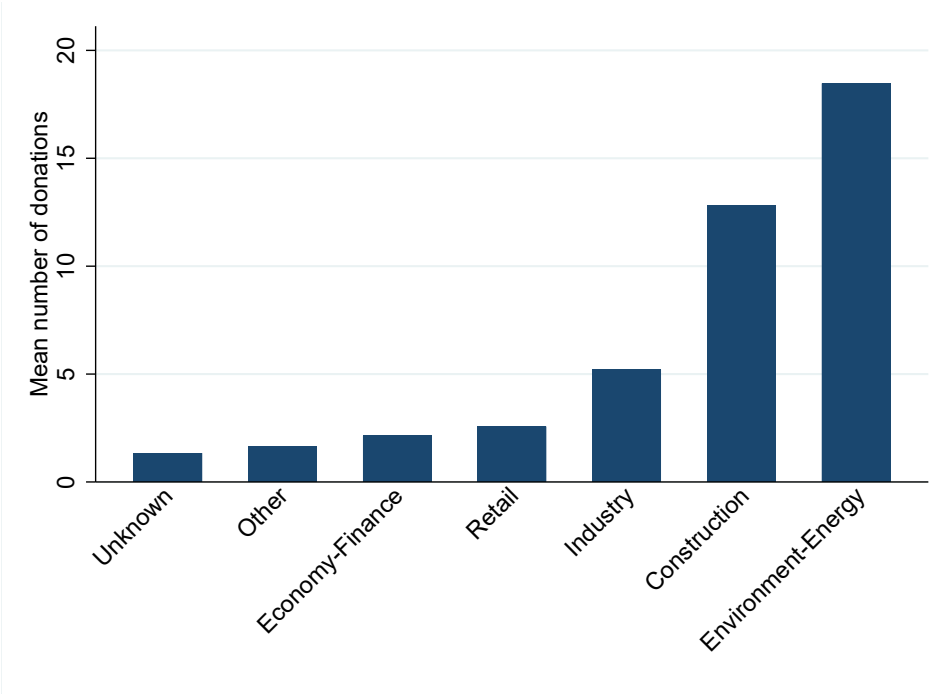
Industry
- Extraction de houille et de lignite (05) ; - Extraction d'hydrocarbures (06) ; - Extraction de minerais métalliques (07) ; - Autres industries extractives (08) ; - Services de soutien aux industries extractives (09) ; - Industries alimentaires (10) ; - Fabrication de boissons (11) ; - Fabrication de produits à base de tabac (12) ; - Fabrication de textiles (13) ; - Industrie de l'habillement (14) ; - Industrie du cuir et de la chaussure (15) ; - Travail du bois et fabrication d'articles en bois et en liège, à l'exception des meubles ; fabrication d'articles en vannerie et sparterie (16) ; - Industrie du papier et du carton (17) ; - Imprimerie et reproduction d'enregistrements (18) ; - Cokéfaction et raffinage (19) ; - Industrie chimique (20) ; - Industrie pharmaceutique (21) ; - Fabrication de produits en caoutchouc et en plastique (22) ; - Fabrication d'autres produits minéraux non métalliques (23) ; - Métallurgie (24) ; - Fabrication de produits métalliques, à l'exception des machines et des équipements (25) ; - Fabrication de produits informatiques, électroniques et optiques (26) ; - Fabrication d'équipements électriques (27) ; - Fabrication de machines et équipements n.c.a. (28) ; - Industrie automobile (29) ; - Fabrication d'autres matériels de transport (30) ; - Fabrication de meubles (31) ; - Autres industries manufacturières (32) ; - Réparation et installation de machines et d'équipements (33) ; - Production et distribution d'électricité, de gaz, de vapeur et d'air conditionné (35) ; - Activités de poste et de courrier (53) ; - Télécommunications (61)

Homeland affairs
- Enquêtes et sécurité (80) ; - Administration publique et défense ; sécurité sociale obligatoire (84) ; - Action sociale sans hébergement (88)

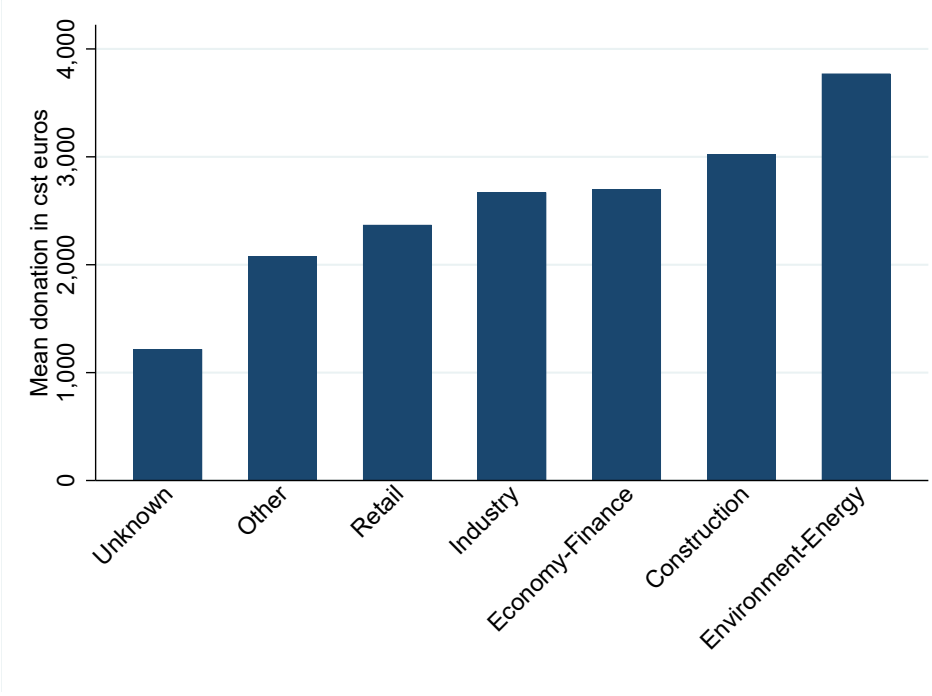
Justice
none

Small and medium business
- Commerce et réparation d'automobiles et de motocycles (45) ; - Commerce de gros, à l'exception des automobiles et des motocycles (46) ; - Commerce de détail, à l'exception des automobiles et des motocycles (47) ; - Hébergement (55) ; - Restauration (56) ; - Activités immobilières (68) ; - Activités de location et location-bail (77)

Public Sector
Activités des organisations et organismes extraterritoriaux (99)



(a) Mean number of donations



(b) Mean amount of donations

Notes: Figure A.1a displays the mean number of donations per donor, and Figure A.1b displays the mean donation in 2020 constant euros, by sector of activity. Sectors with less than 500 donations are grouped in the category "Other".

Figure A.1: Descriptive statistics on corporate donations, depending on the sector of activity

much fewer communication media were available to individual politicians. Of course, television was already an important medium of communication. TV shows, debates and ads are the prominent media for candidates who campaign at the national level, such as candidates to the presidential elections or party leaders who advertise their national platform before the legislative elections. However, it is unlikely that voters learn much about the individual candidates running in their district on TV. Conversely, individual manifestos are a prime method of communication for candidates to run their own campaign and tailor the message to the specific voters in their district.

Anecdotal evidence To illustrate the type of information that is provided in manifestos and how communicaton strategies may differ across candidates of the same party, depending on the amount of corporate donations they receive, we first provide and compare two concrete examples. Figures D.3 and D.4 show the campaign manifestos issued by two different Green candidates in 1993. Monique Mascret (Figure D.3) received more than €10,000 in corporate donations and issued a rather personal manifesto in which she highlights her family, her occupation and her local roots, emphasizing the fact that she has lived in the district for 18 years. She advertises the key policy positions of the Green party regarding waste management and pollution, with very concrete proposals such as subsidizing farmers who reforest their land. Interestingly, she also advocates for pro-business economic policies, including the reduction of corporate taxes and the support of construction projects to boost employment. Conversely, Sophie Bouchard (Figure D.4) did not receive any corporate donations in 1993 and issued a more generic manifesto that highlights the core values of the Green platform (productivism, pollution, redistribution) without any concrete proposal, and provides very little information about the candidate herself or her background.

Next, Figures D.5 and D.6 show the campaign manifestos issued by two different candidates endorsed by the far-right party. Jacques Peyrat (Figure D.5) received close to €16,000 in corporate donations in 1993 and issued a manifesto that mixes proposals from the national platform of the party (immigration, tax reduction and conservative moral values) and a local corruption scandal involving the misuse of public funds by a previous mayor. Conversely, Ferdinand Ginoux (Figure D.6) did not receive any corporate donations and used a manifesto template that was common to almost all far-right candidates that year, with very little personalization. This template describes the national party platform and its most controversial policy proposals, such as re-enacting the death penalty, and attacks all the other parties for their alleged political failures.

We use computational text analysis to construct quantitative measures associated with these different aspects of electoral discourse and estimate the causal impact of banning corporate donations on communication strategies.

A.3 Text as data

A.3.1 Text pre-processing

We turn the collected PDF versions of candidate manifestos issued in 1997 into machine-readable text using the Tesseract OCR engine: https://github.com/tesseract-ocr/tesseract. We then merge manifestos' content with electoral data using fuzzing string matching on candidate names. Candidate manifestos issued in previous elections were collected and digitized by the Cevipof, using the ABBYY FineReader OCR engine. The identification of each manifesto's author and the merge with electoral data for these earlier years was performed by Le Pennec (2020). Before running any analysis, we pre-process the content of each document following standard steps from the literature: we remove stopwords and special characters.

A.3.2 Local and national references

Our dictionary of local references includes the names of all 95 French departments. For departments whose name contains multiple words (e.g., Seine-Saint-Denis), we include all the possible versions found in pre-processed manifestos (e.g., "seine saint denis", "seinestdenis" or "seine stdenis"). This dictionary also includes the names of the 36,827 French municipalities. In a given manifesto, we count the number of times the candidate's department or a municipality in that specific department are mentioned.

Our dictionary of national references includes, for each election year in our sample: (a) the names of the main parties in the race; (b) the name of each party leader; (c) the names of the President and of each member of the incumbent government; (d) names referring to national institutions (e.g., "elysee" is the Presidential residence and refers to the Presidency more generally). Examples of these national references are presented in Table A.2. Note that we first search for the full name of each party leader or member of the government (e.g. "jacques chirac") and then for their last name only (e.g. "chirac") to increase the probability of identifying a national reference in case the first name is omitted or misspelled. We also search for parties' full names and for their abbreviations (e.g., "rassemblement republique" and "rpr").

We remove stopwords and special characters from both local and national references to match the pre-processing steps applied to the content of each manifesto.

A.3.3 Multinomial inverse regression

We describe here the framework introduced by Taddy (2013). The frequency of word w in document j, c_{wj}, is derived from a discrete choice model over the vocabulary of size W and is assumed to follow a multinomial distribution of the form $c_{wj} \sim MN(q_{wj}, m_j)$, where m_j is the number of words in document j. To construct a document's left-right score on the

Table A.2: Examples of national references

1993	1997
mouvement ecologie	jacques chaban delmas
pierre joxe	francoise panafieu
jean marie pen	alain poher
rpr	jacques toubon
jacques toubon	rassemblement republique
nicolas sarkozy	alain juppe
jacques chirac	noel mamere
charles pasqua	laurent fabius
matignon	louis mermaz
georges marchais	elysee

Notes: This table shows examples of names included in our dictionary of references to national politics – for 1993 and 1997 separately.

left-right scale, we define the probability that document j uses word w as:

$$q_{wj} = \frac{exp(\alpha_w + \phi_w D_j)}{\sum_{k=1}^{W} exp(\alpha_k + \phi_k D_j)}$$

where D_j is an indicator variable equal to one if j is issued by a right-wing candidate, as opposed to a left-wing one. Non-classified and centrist candidates are excluded. ϕ_w is a word *loading* that measures sensitivity to party affiliation; that is, the gain in utility from using this word for a right-wing candidate as compared to a left-wing candidate. A sufficient reduction (Cook and Others, 2007) for j's partisanship given the observed vector of word frequencies is the following projection:

$$Z_j = \sum_{w=1}^{W} \phi_w \cdot \frac{c_{wj}}{m_j}$$

where Z_j is the left-right partisan score of document j: a negative (positive) score means that document j uses a lot of words used by other left-(right-)wing candidates, and never by the other side. Conversely, a score close to zero means that document j uses either neutral words used by both sides indifferently or a mix of polarizing words from both sides.

The parameters of interest α_w and ϕ_w are estimated through distributed multinomial regression (Taddy, 2015), where a Poisson approximation for the distribution of c_{wj} allows for faster and more efficient distributed computing. The implied negative log-likelihood for each word is proportional to:

$$l(\alpha_w, \phi_w) = \sum_{j=1}^{N} [m_j exp(\alpha_w + \phi_w D_j) - c_{wj}(\alpha_w + \phi_w D_j)]$$

Following Gentzkow et al. (2019), we control bias through penalization. In particular, we

apply the gamma-lasso procedure described in Taddy (2017) so that the preferred estimator is:

$$\hat{\alpha_w}, \hat{\phi_w} = argmin[l(\alpha_w, \phi_w) + N\lambda\gamma^{-1}log(1 + \gamma|\phi_w|]$$

where N is the number of documents in the corpus, λ is a standard Lasso penalty, and γ is the penalty scale.[3] This penalized estimator shrinks noisy loadings to zero, resulting in a sparse solution that downweights the artificially high influence of rare words in the corpus.

We estimate this model with the textir library in R, for each election year separately. We restrict the vocabulary to words used by at least 0.5% and at most 50% of the manifestos, which leaves us with an average vocabulary of 5,000 words per year.

Policy topics We follow essentially the same strategy to project manifestos onto latent policy topics, using the sample of written questions to the government issued between 1988 an 1997 as a training set. More specifically, we define the probability of document j using word w as:

$$q_{wj} = \frac{exp(\alpha_w + \sum_{s=1}^{S} \phi_w^s D_j^s)}{\sum_{k=1}^{W} exp(\alpha_k + \sum_{s=1}^{S} \phi_k^s D_j^s)}$$

D_j^s is an indicator variable equal to one if question j is addressed to a minister about topic s. ϕ_w^s is a word *loading* that measures the lift in utility from using word w when issuing a question about topic s as opposed to targeting a non-classified ministry.[4] The sufficient reduction for the topic assignment of any document j, given the observed vector of word frequencies, is the following projection:

$$Z_j^s = \sum_{w=1}^{W} \phi_w^s \cdot \frac{c_{wj}}{m_j}$$

This quantity provides a continuous measure for the prevalence of topic s in document j. Intuitively, a document with a high positive Z^s is a document that uses many words whose loading – or predictive power – for topic s is also high. We can use the set of parameters ϕ_w^s estimated from written questions to the government to project manifestos onto each latent topic space and obtain a set of topic prevalence measures for each manifesto.

To further obtain measures of topic prevalence that are easily interpretable, we feed the set of continuous measures Z^s into a multinomial logistic regression of the form:

$$P(D_j = s) = \frac{exp(\alpha_s + \sum_{s'=1}^{S} \delta_s^{s'} Z_j^{s'})}{\sum_{s'=1}^{S} exp(\alpha_{s'} + \sum_{s'=1}^{S} \delta_{s'}^{s'} Z_j^{s'})}$$

[3] For details on the advantages of concave regularization and Gamma Lasso versus Lasso penalization, see Taddy (2017).

[4] The intercept of this model corresponds to the baseline utility of using word w when issuing a question to any non-classified minister.

where $P(D_j = s)$ is the probability that document j refers primarily to topic s. We fit the model on the sample of written questions to the government, using 80% of the observations (randomly chosen) as training set and the other 20% as a test set to evaluate the out-of-sample performance of the model. We obtain 86% accuracy with 17 topics and 87% accuracy with 4 broader topics. We then use the estimated set of δ_s coefficients, as well as the manifesto projections Z^s, to assign each manifesto to a set of estimated probabilities, each indicating the likelihood that the manifesto focuses primarily on a given topic over the others.

We estimate this model with the textir library in R as well, and we restrict the vocabulary to words used by at at most 50% and at least 0.1% of all written questions issued between 1988 and 1997, due to the large number of such questions (close to 200,000). This leaves us with a vocabulary size of about 6,500 words.

A.4 District-level controls

Finally, we collect time-varying district-level covariates. First, we use information on socio-demographic characteristics and unemployment from the French census. Second, we build a new dataset on the revenues and annual spending in infrastructure of the French municipalities with more than 10,000 inhabitants, from the paper-format archives of the Ministry of Finances covering the 1993-1997 time period. Third, we identify the annual number of firms, the annual number of employees, the total payroll, and the share of the employees who are part of the top 1% of the income distribution, from the *"Déclaration Annuelle de Données Sociales"* (DADS) – a detailed French database on wages.

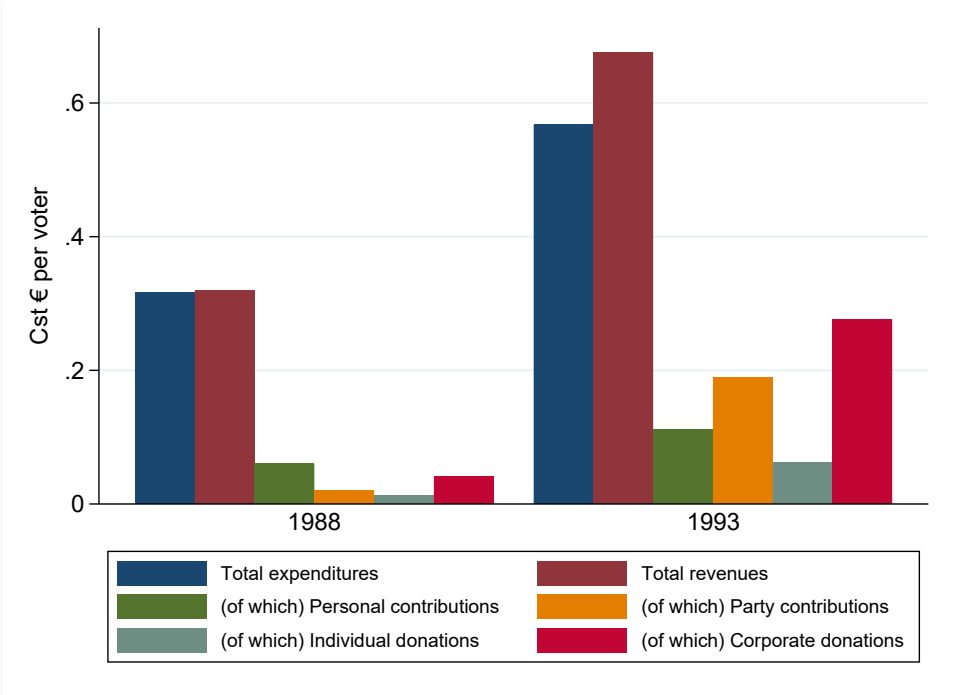
Other available district-level factors include the number of municipalities in the district, whether it is considered a rural or an urban district, and whether the capital of the region is located in the district. Summary statistics on these covariates are shown in Table E.8.

B The 1988 legislative elections

Private donations were first allowed with the laws passed in March 1988. Thus, candidates at the 1988 legislative elections that took place on June 5th and 12th were entitled to receive contributions both from individuals and corporations. Yet, the campaign accounts of the 1988 candidates have never been studied until now, including by historians. This is due to the fact that, in the absence of a centralized regulatory agency – the *"Commission Nationale des Comptes de Campagne et des Finances Politiques"* (the French equivalent of the US FEC) was only created in 1990 – these accounts have not been validated neither assembled in the National archives (or in the archives of the Commission). Following a careful reading of the administrative rules in place and numerous interactions with archivists, we contacted departmental archives. A number of these archives have stored the 1988 candidates' campaign accounts until today. However, because the identity of the individual donors has not been anonymized, the documents are still classified.

We have contacted separately the persons in charge of each of the departmental archives holding the accounts (96 departments in Metropolitan France), and asked officially for the declassification of the documents (given our approach is purely research driven). We were able to collect data for 15 departments: Ain, Aube, Calvados, Corrèze, Creuse, Dordogne, Eure, Indre, Loir et Cher, Maine-et-Loire, Moselle, Haute-Savoie, Seine Maritime, Haute-Vienne, and Yonne. While obviously incomplete, this dataset sheds some light on the structure of donations and expenditures at the 1988 legislative elections, for 74 electoral districts and 363 candidates – including 143 candidates who also ran in 1993. We compare their revenues and expenses during these two electoral years. Figure B.1 reports the results.

Candidates both received and spent much less in 1988, as compared to 1993. Specifically, the average amount of corporate donations received by a candidate was seven times higher in 1993 as compared to 1988. This is not surprising, given that the possibility of receiving donations was a new opportunity, offered to the candidates only three months before election day. We note that party contributions were much higher in 1993 as well, possibly because parties were not publicly funded before March 1988 and had scarce resources to spare on their candidates' campaigns before the 1988 elections in June.



Notes: The figure provides summary statistics on candidates' expenses and revenues at the 1988 and 1993 elections. All amounts are measured in 2020 constant euros per voter. The data cover the sub-sample of candidates who ran both in 1988 and in 1993 at the legislative elections in the 15 departments for which the 1988 data are available: Ain, Aube, Calvados, Corrèze, Creuse, Dordogne, Eure, Indre, Loir et Cher, Maine-et-Loire, Moselle, Haute-Savoie, Seine Maritime, Haute-Vienne, and Yonne.

Figure B.1: Candidates' accounts: 1988 and 1993, Anecdotal evidence from 15 departments

C Robustness checks

C.1 Alternative specifications

Clustering In our preferred difference-in-differences specification (equation (2)), we cluster the standard errors at the district level. The estimates remain significant when clustering standard errors at the department level instead (Appendix Table E.13, column 1).

Measuring corporate donations We test for the robustness of our estimates to alternative measures of corporate donations loss. Column 2 of Appendix Table E.13 shows that estimating equation (2) with the (standardized) log of corporate donations (multiplied by -1) as independent variable yields an estimated impact of donations on a manifesto's local index that is slightly larger in magnitude (-0.18) to the point estimate from column 1 of Table 3.[5] In column 3, we use an indicator variable for receiving any corporate donation (also multiplied by -1) as independent variable, which shows that the effect of banning corporate donations is even larger in size at the extensive margin, with an estimated negative effect corresponding to 23% of a standard deviation in the local index, significant at the 1% level.

Column 4 shows a less negative (-0.02) but significant estimate for the effect of the number of (distinct) corporate donations lost by each candidate. In column 5, we estimate a quadratic version of equation (2) (where both linear and quadratic terms are multiplied by -1) and find that the effect of losing corporate donations on the prevalence of local references over national ones follows a concave pattern, indicating that the negative impact wears off as candidates receive increasingly large amounts of donations. Interestingly, columns 4 and 5 suggest that losing few important donations – rather than many – is what affects campaign communication the most. This pattern is consistent with our preferred interpretation of the results, presented in Section 5: the support of a few committed corporate donors is likely to increase the salience of certain issues and push candidates to address these issues in their campaign communication. Receiving a large amount of contributions but from a wide array of different donors may not provide such a clear signal of which issues constituents care about, so banning them is less impactful.

C.2 Sample selection

Our difference-in-differences approach relies on the inclusion of candidate fixed effects. While this strategy controls for the endogenous allocation of corporate donations among candidates with different unobserved attributes, which is arguably the greatest threat to causal identification, it mechanically restricts the sample to candidates who run both in 1993 and 1997.

[5] More precisely we use $ln(\text{Corporate Donations}_{ipdt} + 1)$ as independent variable to account for the many zeros in the data. We then divide this quantity by its standard deviation in 1993.

The subsample of re-runners differs significantly from the overall sample of candidates: as shown in Table C.1, among all candidates running in 1993, those who ran again in 1997 are more likely to be men, to have already run in the past, to have won the previous election, to hold another electoral mandate and to enjoy higher campaign revenues – including corporate donations. These systematic differences may threaten the validity of our results, if losing corporate donations deters candidates of a certain type, and with certain communication skills, from running again in the future.

In column 1 of Table C.2, we estimate a regression model of the form of equation (2), where the outcome is an indicator variable equal to 1 if the candidate runs again in the next election (1997 or 2002) and where we replace candidate fixed effects with district fixed effects. This specification includes all candidates who run either in 1993 or in 1997. We find that a one-standard-deviation loss in corporate donations reduces the probability that a candidate runs again in the next election by 1.7 percentage points – an estimate significant at the 10% level. To alleviate the concern of endogenous sample selection, we test for the robustness of our results to a less conservative approach, in which we replace candidate fixed effects with party times district fixed effects and include all candidates whose party is present in the same district twice – even if it was not the same candidate running in both years for this party. This specification excludes independent candidates. Column 10 of Appendix Table E.13 shows a negative estimate of corporate donations on the local index, significant at the 1% level. Interestingly, the point estimate is smaller in magnitude (9% of a standard deviation) as compared to column 1 of Table 3, suggesting that the within-party allocation of corporate donations in 1993 is biased toward individual politicians who, absent any reform, would be *less* likely to drop local references from their manifesto.

Column 2 of Table C.2 addresses a second possible source of endogenous selection: manifesto availability. Ressuringly, losing corporate donations does not affect the probability that a candidate manifesto was successfully collected and digitized.

Table C.1: Comparison of included and excluded observations

	Mean included	N included	Mean excluded	N excluded	Diff	p-value
Female	0.14	1,414	0.22	3,668	-0.08	0.00
Re-run	0.41	1,414	0.15	3,668	0.26	0.00
Incumbent	0.19	1,414	0.04	3,668	0.15	0.00
Mayor	0.07	1,414	0.02	3,668	0.05	0.00
Other mandates	0.04	1,414	0.02	3,668	0.02	0.00
Revenues (euro/voter)	0.54	1,414	0.27	3,668	0.28	0.00
Corp.Don. (euro/voter)	0.22	1,414	0.08	3,668	0.14	0.00
Indiv.Don. (euro/voter)	0.06	1,414	0.03	3,668	0.03	0.00
Personal.contrib. (euro/voter)	0.09	1,414	0.07	3,668	0.02	0.00
Party.contrib (euro/voter)	0.14	1,414	0.07	3,668	0.07	0.00

Notes: The table compares candidates included in our sample (i.e. candidates who ran both 1993 and 1997) to excluded ones. For each observed candidate characteristic and source of campaign revenue, we report mean values and number of non-missing observations for each group, the difference in mean values between the two groups and the *p-value* associated with the test that this difference is zero.

Table C.2: Impact of corporate donations on selection into sample

	Runs in next election	Manifesto available
	(1)	(2)
Corporate donations (loss)	-0.017*	0.000
	(0.010)	(0.005)
Observations	11308	2828
Mean outcome before ban	0.278	0.984
R2-Within	0.016	0.012
District FE	✓	
Candidate FE		✓
Controls		✓

Notes: Standard errors are clustered by district and shown in parentheses (***, **, * indicate significance at 1, 5, and 10 percent, respectively). We use one observation per candidate per year. In column 1 the outcome is an indicator variable indicating if the candidate ran again in the next election (in the same district and for the same party). We control for district fixed effects and party×year fixed effects, as well as individual controls: indicator variables for being a woman, having run in the past, for being the incumbent, and for holding other electoral mandates. In column 2 the outcome is an indicator variable indicating if the candidate has a first-round manifesto available and the sample includes candidates who ran both in 1993 and 1997. We control for candidate fixed effects and party×year fixed effects as well as time-varying individual controls.

D Additional figures

ÉLECTIONS LÉGISLATIVES GÉNÉRALES DES 21 MARS ET 28 MARS 1993

AISNE (1re circonscription)

Plafond de dépenses : 500 000 F — Décision C.C.F.P. du : 05-11-93 — Scrutin non contesté

DÉPENSES				RECETTES							NOMS DES CANDIDATS	Décisions C.C.F.P.
Total déclaré	Base R. 39	Réformations	Total retenu	Dons P.P.	Dons P.M.	Apport personnel net	Apport parti net	Autres	Réformations	Total retenu		
18 473	0	0	18 473	0	0	0	18 473	0	0	18 473	PERNELLE Jean-Loup	A
236 465	58 501	+40 852	218 816	34 200	77 750	49 695	40 852	19 614	0	222 111	DOSIERE René	AR
98 344	36 536	0	61 808	4 350	0	57 458	0	0	0	61 808	SALECK Michel	A
392 614	59 862	0	332 752	85 750	159 800	0	200 000	55 328	0	500 878	LAMANT Jean-Claude	A
53 567	16 395	0	37 172	0	0	26 131	10 041	1 000	0	37 172	DEGEMBE Patrick	A
74 570	26 131	0	48 439	1 000	0	47 439	0	0	0	48 439	LACOMBE Dominique	A
33 173	0	+ 300	33 473	0	0	0	33 173	0	+ 300	33 473	BERDAL Michelle	HD
0	0	0	0	0	0	0	0	0	0	0	JARNO Philippe	ND

Listes des dons de personnes morales versés à partir du 1er février 1993 (loi nº 93-122 du 29 janvier 1993)

AISNE (1re circonscription)

René DOSIERE

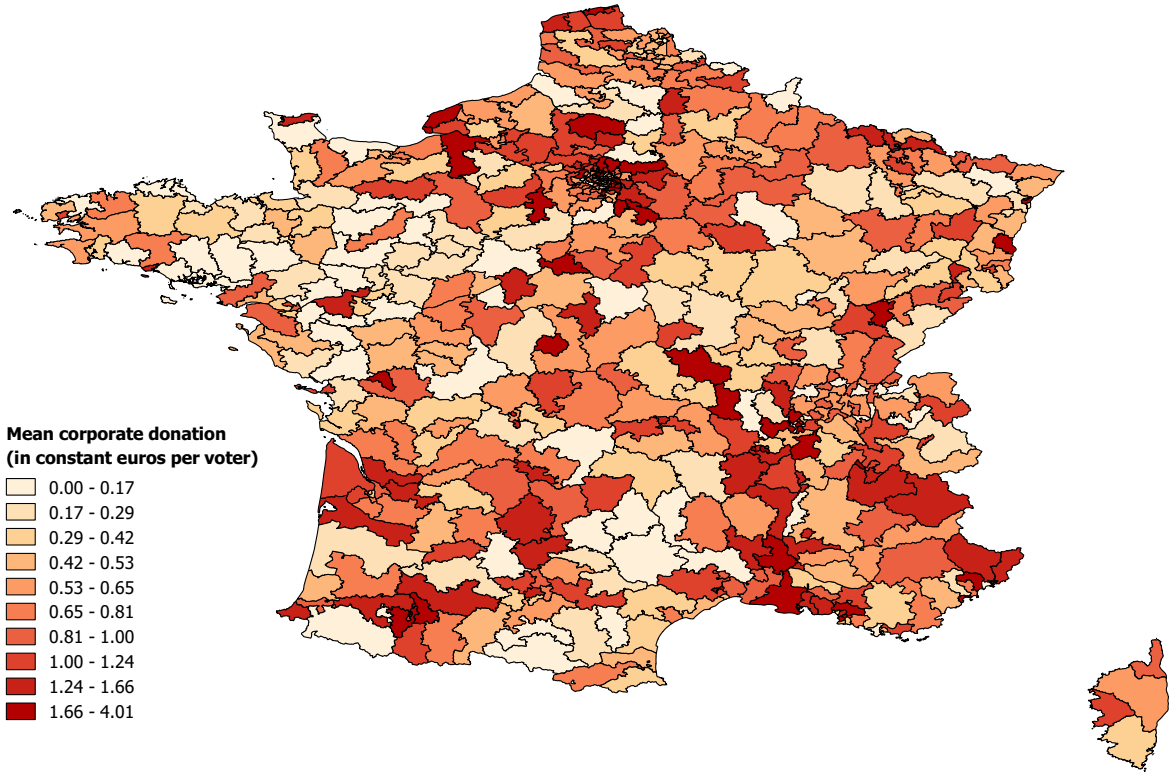
STE ANIZIENNE DE CONSTRUCTION	10 000 F
STE ANIZIENNE DE VIABILITE ET D'ASSAINISSEMENT	3 000 F
ENTREPRISE DE CONSTRUCTION DE LA THIERACHE	1 000 F
SARL SCOP CHAUFFAGE SANITAIRE	2 000 F
CAISSE MUTUELLE D'ASSURANCES	1 000 F
ARCHITECTES ASSOCIES BORDERIOUX DI LEGGE	7 000 F
SA BOUCARD	2 500 F
SA EUROP ALU	750 F

Jean-Claude LAMANT

ETS CAILLE SA	1 000 F
ENTREPRISE DRAPIER	8 000 F
SA DU PARC	3 000 F
SA LE BETON ARME FERRARI	5 000 F
SA BPF	2 000 F
SARL GARAGE LESOUDARD	1 000 F
SA CHAMBRY DISTRIBUTION	15 000 F
ENTREPRISE CHEMERY	1 500 F
ENTREPRISE CHEMERY	1 000 F
SAB ENTREPRISE BOUCARD	2 500 F
SARL VITRANT	5 000 F
GENERALE DE TRANSPORT ET D'INDUSTRIE	30 000 F
SA THOURAUD	5 000 F
S.G.S.T SAVE	10 000 F

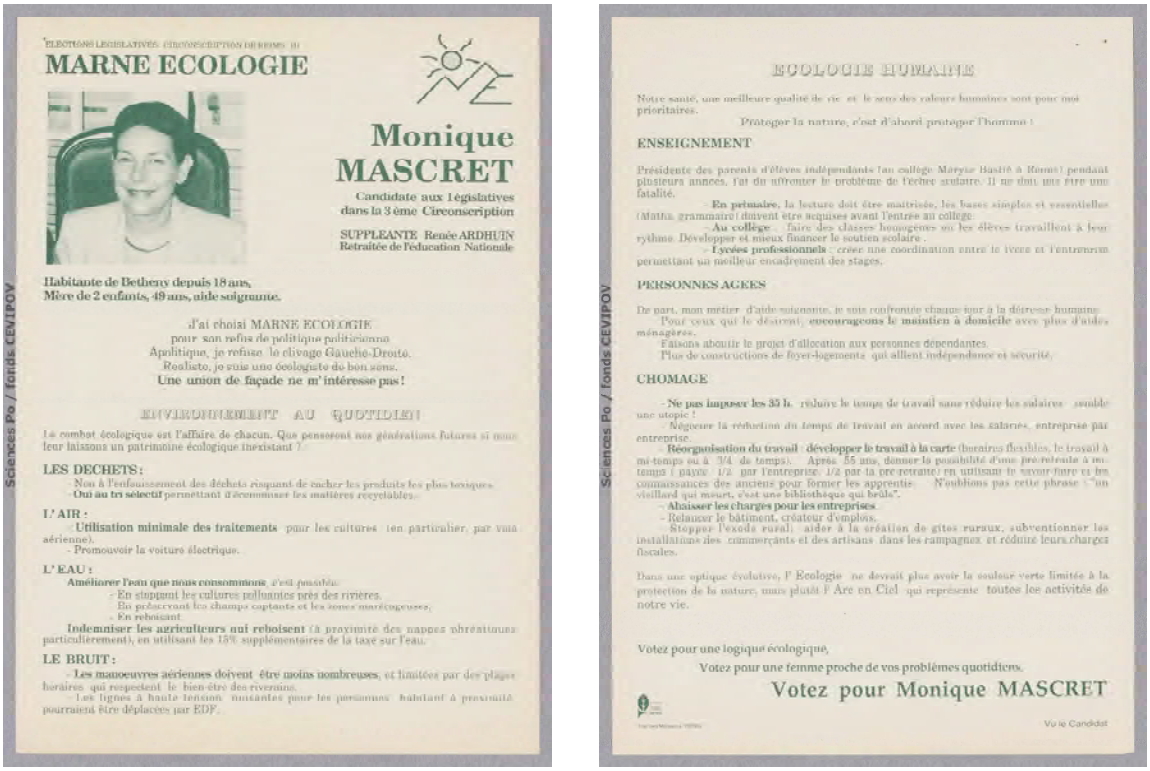
Notes: This figure provides an example of the CNCCFP's paper archives used to collect information on the corporate donations received by candidates running in in 1993, including the name of the corporate donors and the amount of their donation.

Figure D.1: Example of corporate donations data



Notes: The map shows the mean value of corporate donations, measured in 2020 constant euros per voter, received by candidates running in a given district in 1993. Districts are split in deciles: the lightest orange stands for the 10% districts with the lowest average amount of corporate donations (i.e., districts where candidates receive between 0 and 0.17 euro per voter, on average); the darkest red stands for the 10% districts with the largest average amount of corporate donations (i.e., districts where candidates receive between 1.66 and 4 euro per voter, on average). N=555.

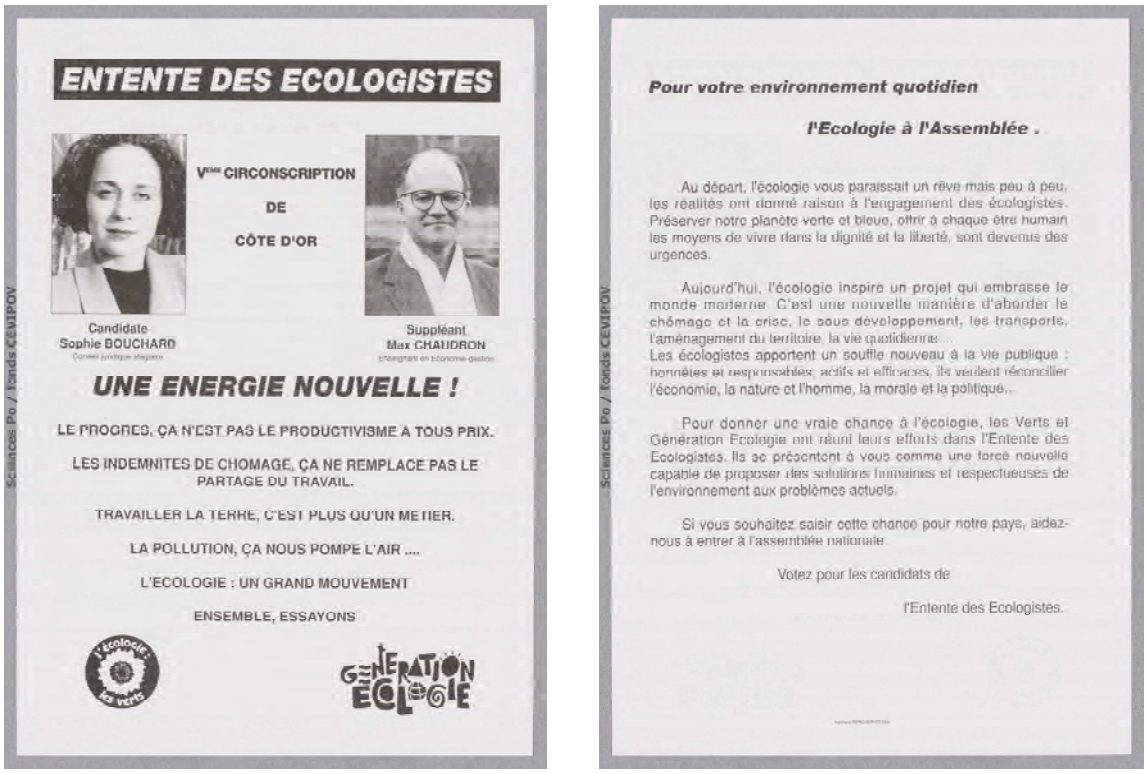
Figure D.2: Mean corporate donations in 1993



Source: Electoral archives of CEVIPOF SciencesPo, EL192L199303051031PFPdfmasterocr https://archive.org/details/archiveselectoralesducevipof

Translation: Legislative elections. Third constituency of Reims. Marne Ecology.
Monique Mascret. Candidate for the legislative elections in the third constituency of Reims.
Deputy: Renée Ardhuin. Retired from the National Education. Resident of Betheny for 18 years. Mother of 2 children, 49 years old, caregiver. I chose "Marne Ecology" for its refusal of party politics. Apolitical, I refuse the left-right division. Realistically, I am a commonsense environmentalist. I am not interested in a facade union.
DAILY ENVIRONMENT – The ecological fight is everyone's business. What will our future generations think if we leave them a non-existent ecological heritage?
WASTE: – No to the burial of waste that may hide the most toxic products. - Yes, to selective sorting to save recyclable materials.
AIR: – Minimal use of crop treatments (especially aerial). - Promoting the electric car.
WATER: – Improving water we consume is possible: o Stopping polluting crops near rivers. o Preserving catchment areas and wetlands. o By reforesting. Compensate farmers who reforest (especially near groundwater), using the extra 15% of the tax.
NOISE: – - Aerial maneuvers must be reduced in number and limited by time slots that respect the well-being of local residents. - High-voltage lines that are harmful to people living nearby could be moved by EDF.
HUMAN ECOLOGY – Our health, a better quality of life and a sense of human values are my priorities. Protecting nature is first and foremost protecting humans.
EDUCATION – As president of the independent parents' association (at the Maryse Bastié school in Reims) for several years, I had to deal with the problem of school failure. It should not be a fatality. - In primary school, reading must be mastered, the simple and essential basics (maths, grammar) must be acquired before entering secondary school. - In secondary schools: create homogeneous classes where pupils work at their own pace. Develop and better financing tutoring. - Vocational schools: Create a coordination between the school and the company allowing a better supervision of the internships.
ELDERLY – As a caregiver, I am confronted with human distress every day. For those who wish to do so, let's encourage home care with more household help. Let's make the project for an allowance for dependent persons a success. Let's build more residential homes that combine independence and security.
UNEMPLOYMENT – - Do not impose the 35-hour week: reducing working time without reducing wages seems utopian. - Negotiate the reduction of working time in agreement with the employees, company by company. - Reorganization of work: developing *à la carte* work (flexible working hours, part-time or three-quarters time work). After the age of 55, offer the possibility of part-time early retirement (paid half by the company, half by the early retirement scheme) using the know-how and knowledge of older workers to train apprentices. Let's not forget this sentence: "An old man who dies is a burning library". - Lowering the burden on business. - Relaunching the construction industry, which creates jobs. - Stop the rural exodus: help in the creation of rural lodging, subsidize the installation of traders and craftsmen in the countryside, and reduce their tax burden. In an evolutionary perspective, ecology should no longer have the colour green limited to the protection of nature, but rather the Rainbow which represents all the activities of our life.
Vote for a logical ecology, Vote for a woman who is close to your daily problems, Vote for Monique MASCRET!

Figure D.3: Manifesto from a Green candidate with corporate donations



Source: Electoral archives of CEVIPOF SciencesPo, EL190L199303021051PFPdfmasterocr https://archive.org/details/archiveselectoralesducevipof

Translation: Environmentalists' agreement! Fifth constituency of Côte d'Or.
Candidate: Sophie BOUCHARD. Trainee legal adviser.
Deputy: Max CHAUDRON. Teacher in Economics and Management
A NEW ENERGY! Progress is not productivism at all costs. Unemployment benefits are no substitute for work sharing. Working the land is more than a job; Pollution, it sucks the air out of us... Ecology: a great movement! Let's try it together! For your daily environment ecology in the National assembly.
At first, ecology seemed like a dream, but little by little, the realities have given reason to the commitment of environmentalists. Preserving our green and blue planet, offering every human being the means to live in dignity and freedom, have become urgent.
Today, ecology inspires a project that embraces the modern world. It is a new way of tackling unemployment and the crisis, underdevelopment, transport, regional planning, daily life...
The ecologists bring a new breath to public life: honest and responsible, active and efficient, they want to reconcile the economy, nature and man, morality and politics...
To give ecology a real chance, "les Verts" and "Génération Ecologie" have joined forces in the Environmentalists' agreement. They present themselves to you as a new force capable of proposing humane and environmentally friendly solutions to current problems.
If you want to seize this opportunity for our country, help us enter the national assembly.
Vote for the candidates of Environmentalists' agreement.

Figure D.4: Manifesto from a Green candidate with no corporate donation

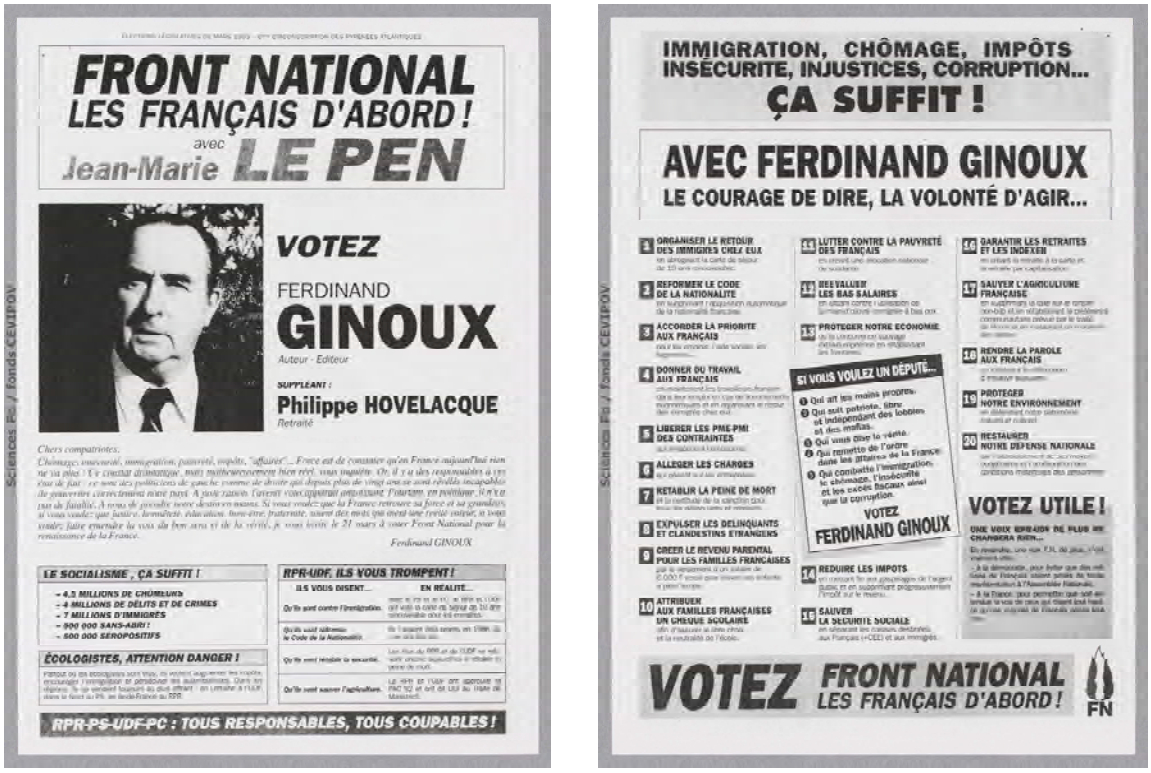
Source: Electoral archives of CEVIPOF SciencesPo, EL189L199303006021PFPdfmasterocr—https://archive.org/details/archiveselectoralesducevipof

Translation: French Republic - Department of the Alpes-Maritimes. Legislative elections 21 March 1993 - second constituency of Nice.
Candidates from Front National and Indépendante de droite. Jacques Peyrat. Lawyer, former deputy, regional councilor, departmental councilor, municipal councilor.
Deputy: Jacqueline Mathieu-Obadia. Doctor, former deputy, regional councilor, deputy mayor of Nice.
Madam, Miss, Sir, If you think that insecurity and insalubrity are gaining ground every day in the neighborhoods of our city, If you think that the inexorable progression of immigration, essentially from Third World countries, is seriously threatening our territory and our national identity, If you think that the tax burden, suffered by small and medium-sized businesses as well as by citizens, has become intolerable, If you are tired of corruption and the self-amnesty of this corruption. If you are frightened by the degradation of morals and the collapse of public and private moral values, If you think that the politicians in charge of affairs no longer reflect the aspirations of the people who brought them to power: Then you will vote massively on Sunday 21 March.
Because you were shocked by the revelation of the Chambre Régionale des Comptes of the real plundering of public funds by a certain number of the former Mayor's close collaborators, some of whom still hold key positions. Because you are shocked by the "affairs" that are shaking our city and offer the people of Nice the image of a city in full bankruptcy. Because you are outraged that some of those responsible for these "affairs" dare to come to you to run for elected office. Because you think that integrity is the first virtue of someone who is running for the votes of his fellow citizens, Then you will vote for the candidates of integrity.
I asked Doctor Jacqueline Mathieu-Obadia, mother of a large family, medical specialist, high-level politician, irreproachable deputy mayor of Nice, to come to my side to be my deputy. I am honored that she has accepted. She is a doctor; I am a lawyer and we do not need the prebends of power to find other resources than those coming from the fair remuneration of our work.
I have been involved in militant politics for eight years out of a need for national survival and as a reaction against the blindness and prevarication of a large part of the political class in our country. You have the power to make a difference through your vote. To change the course of things is to reject energetically this Left which does not love the French Nation and which has dragged it into its family, which has limited our sovereignty, destroyed our School and our Army, collapsed our Economy, exacerbated the malaise of our cities, annihilated the taste for effort and morality. But changing the course of things does not mean voting for the candidates of an opposition that has always remained too lukewarm and timid and has never sought to effectively solve the real problems when it was in power. Also, to enable us to propose courageous measures to the next National Assembly, I need your support in this fight which begins with this legislative election and which will end, after other twists and turns, in the municipal election which I hope will be very soon. I hope to be able to count on your vote in the first round, which can be the single one, if you decide to vote en masse. Jacques Peyrat.

Figure D.5: Manifesto from a far-right candidate with corporate donations

Translation - continued:
Jacques Peyrat. Lawyer at the Bar of Nice, Former Member of Parliament and Judge at the High Court of Justice Regional Councilor P.A.C.A Departmental Councilor of the Alpes Maritimes. Municipal Councilor of Nice. Married, 2 children. Founding President of the Parachute Circle of Nice/
Jacqueline MATHIEY-OBADIA. Doctor of Medicine. Deputy Mayor of Nice. Former Regional Councilor P.A.C.A. President of the "Comité de Coordination pour la liberté de l'enseignement". Married, 4 children, Former Vice-President of the Board of Directors of the Nice Hospital.
INTEGRITY - COURAGE - SKILLS

Figure D.5: Manifesto from a far-right candidate with corporate donations (continued)



Source: Electoral archives of CEVIPOF SciencesPo, EL194L199303064061PFPdfmasterocr—https://archive.org/details/archiveselectoralesducevipof

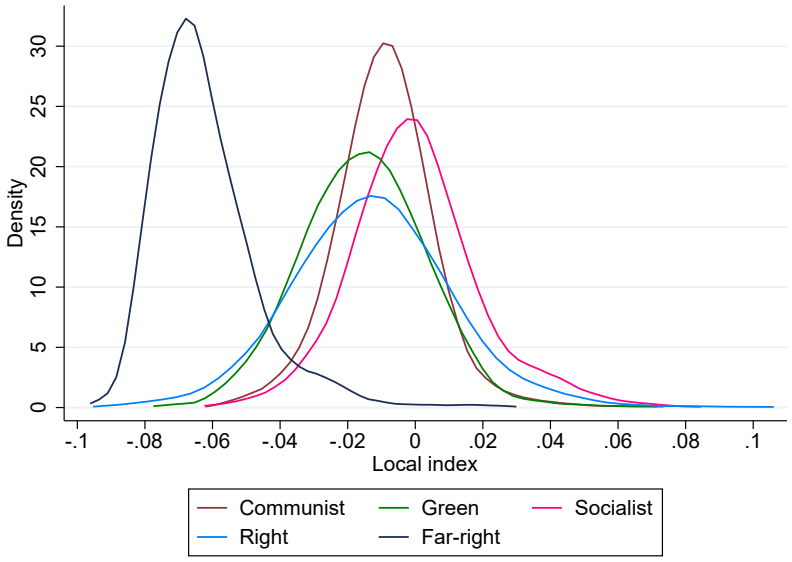
Translation: Front National. French people first! With Jean Marie Le Pen.
Vote for FERDINAND GINOUX (Author- Editor).
Deputy: PHILIPPE HOVELACQUE (Retired).
Dear compatriots, Unemployment, insecurity, immigration, poverty, taxes, "business"... It is clear that nothing is going well in France today! This dramatic, but unfortunately very real, observation worries you. However, there are those responsible for this state of affairs: they are politicians of both the left and the right who, for more than twenty years, have proved incapable of governing our country properly. You rightly see the future as frightening. However, in politics, there is no such thing as fatality. It is up to us to take our destiny into our own hands. If you want France to regain its strength and greatness, if you want justice, honesty, education, well-being, fraternity, to be words that have real value, if you want the voice of common sense and truth to be heard, I invite you on 21 March to vote Front National for the renaissance of France. Enough of socialism! - 4.5 million unemployed - 4 million offences and crimes - 7 million immigrants - 500,000 homeless! - 500,000 HIV positive. Environmentalists, beware! Wherever the ecologists are elected, they want to raise taxes, encourage immigration and persecute motorists.

Figure D.6: Manifesto from a far-right candidate with no corporate donation

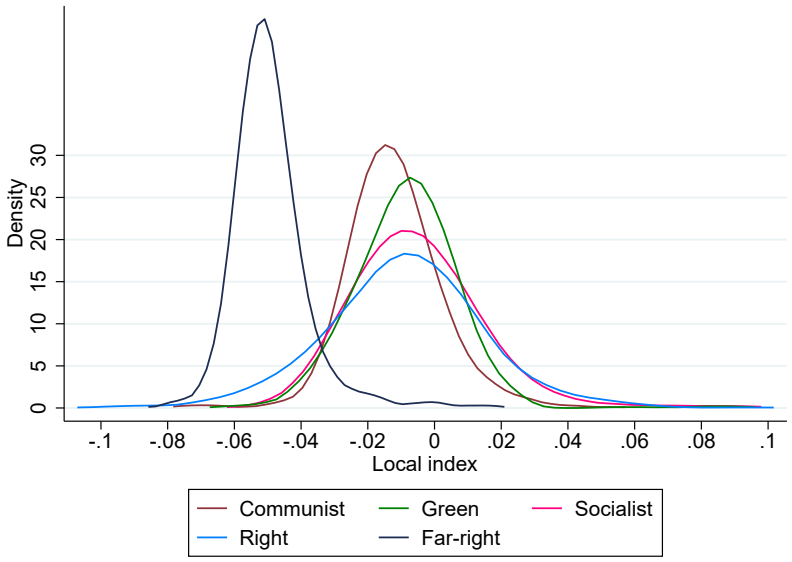
Translation - continued:
In the regions, they always sell themselves to the highest bidder: in Lorraine to the UDF, in the North to the PS, in Ile-de-France to the RPR. RPR-UDF, they lie to you! They tell you they are against immigration. In reality together with the PS and the PC, the RPR and the UDF voted for the 10-year renewable residence permit for immigrants. They tell you that they will reform the Nationality Code. In reality they had already promised it in 1986, but they did nothing about it. They tell you that they tell you that they will restore security. In reality the elected members of the RPR and the UDF still refuse today to reinstate the death penalty. They tell you that they will save agriculture. In reality the RPR and the UDF approved the CAP 92 and said YES to the Maastrich Treaty. RPR-PS-UDF-PC: All responsible, all guilty! Immigration, unemployment, taxes, insecurity, injustice, corruption... enough is enough! With FERDINAND GINOUX: the courage to say, the will to act...
1) Organize the return of immigrants to their homes by repealing the 10-year renewable residence permit.
2) Reform the nationality code by abolishing the automatic acquisition of French nationality.
3) Give priority to the French for jobs, welfare, housing...
4) Give work to the French by keeping French workers in their jobs in the event of economic layoffs and by organising the return of immigrants to their homes.
5) Free SMEs from constraints that prevent hiring.
6) Reducing the burden on business.
7) Reinstate the death penalty and the certainty of punishment for all offenders and criminals.
8) Deporting foreign offenders and illegals.
9) Create a parental income for French families by paying a salary of 6,000 francs for raising children full-time.
10) Allocate a school voucher to French families to ensure free choice and neutrality of school.
11) Fight against French poverty by creating a national solidarity allowance.
12) Re-evaluate low wages by combating the use of cheap immigrant labour.
13) Protect our economy from unbridled competition from outside Europe by re-establishing borders.
14) Reduce taxes by ending the waste of public money and phasing out income tax.
15) Save social security by separating the funds for French and immigrants.
16) Guarantee pensions and index them by creating *à la carte* and funded pensions.
17) Save French agriculture by abolishing the tax on undeveloped land and re-establishing the Community preference provided for in the Treaty of Rome and by introducing a debt moratorium.
18) Give the French people a say by instituting a popular initiative referendum.
19) Protecting our environment by defending our natural and cultural heritage.
20) Restore our national defense by increasing its budgetary means and improving material and personal conditions.
IF YOU WANT AN MP... 1) with clean hands. 2) who is patriotic, free and independent of lobbies and mafias. 3) who tells you the truth. 4) who will put France's house in order. 5) who fights immigration, unemployment, insecurity and fiscal excesses as well as corruption. VOTE FOR FERDINAND GINOUX!
VOTE USEFUL! One more RPR-UDF vote will not change anything... On the other hand, one more F.N vote is really useful: - to democracy, to avoid that millions of French people are deprived of any representation in the National Assembly. - to France to allow the voice of those who say out loud what a majority of French people think in silence to be heard.
Vote Front National! French people first!

Figure D.6: Manifesto from a far-right candidate with no corporate donation (continued)

(a) 1993



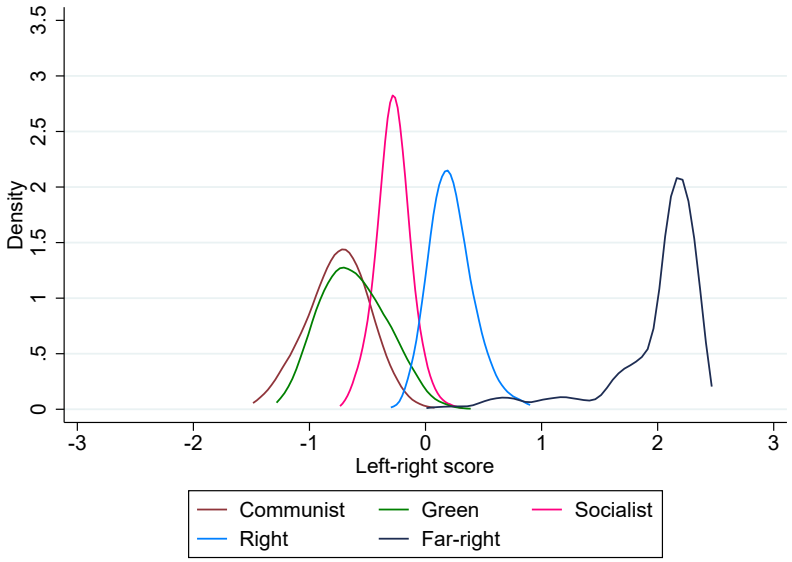
(b) 1997



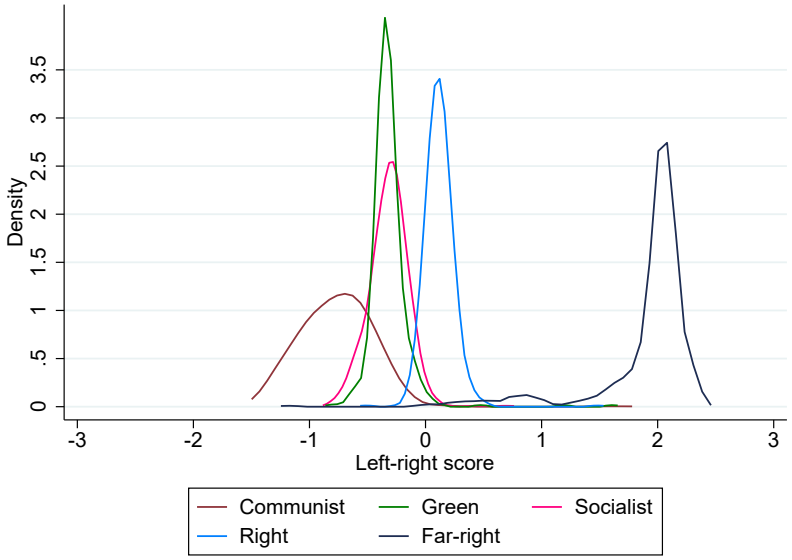
Notes: We plot, for each of the five main parties in our sample, the kernel density of manifestos' local index, which measures the prevalence of local references over national ones, in 1993 and in 1997 separately. The sample includes all candidates from the Communist party, the Green party, the Socialist party, the conservative right-wing party and the far-right party, whose first-round manifesto is available and non-empty after text pre-processing. Large outliers are excluded for visual purposes. N=2,535 and N=2,528 (resp.).

Figure D.7: Kernel density of the local index by party

(a) 1993



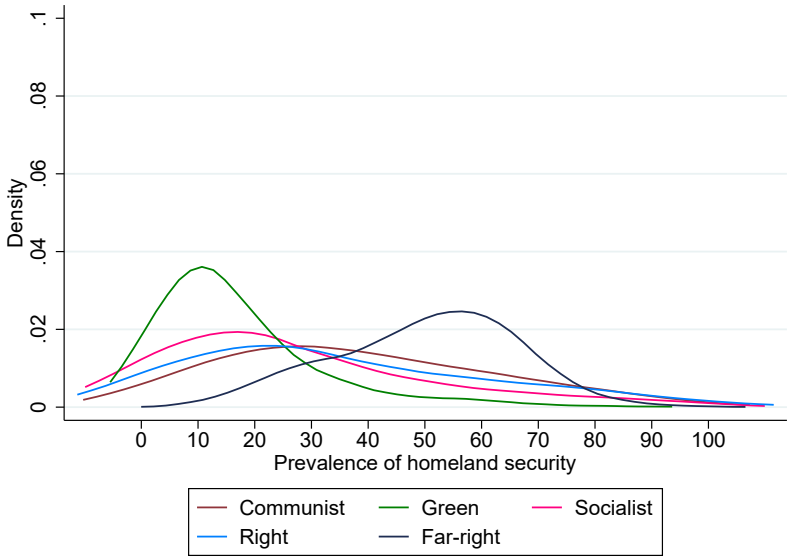
(b) 1997



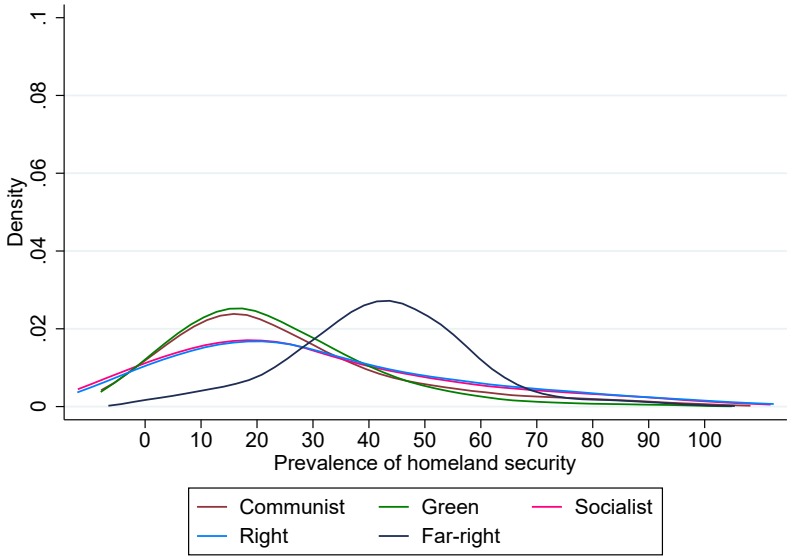
Notes: We plot, for each of the five main parties in our sample, the kernel density of left-right scores from manifestos (issued before the first election round), in 1993 and in 1997 separately. This score indicates the partisan leaning of each manifesto from left-wing (negative score) to right-wing (positive score), based on the words it contains. Other notes as in Figure D.7.

Figure D.8: Kernel density of left-right score by party

(a) 1993



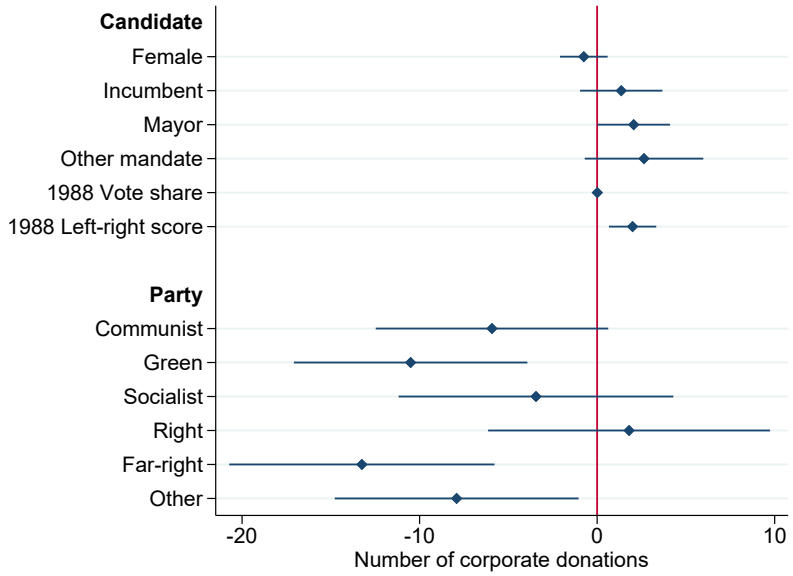
(b) 1997



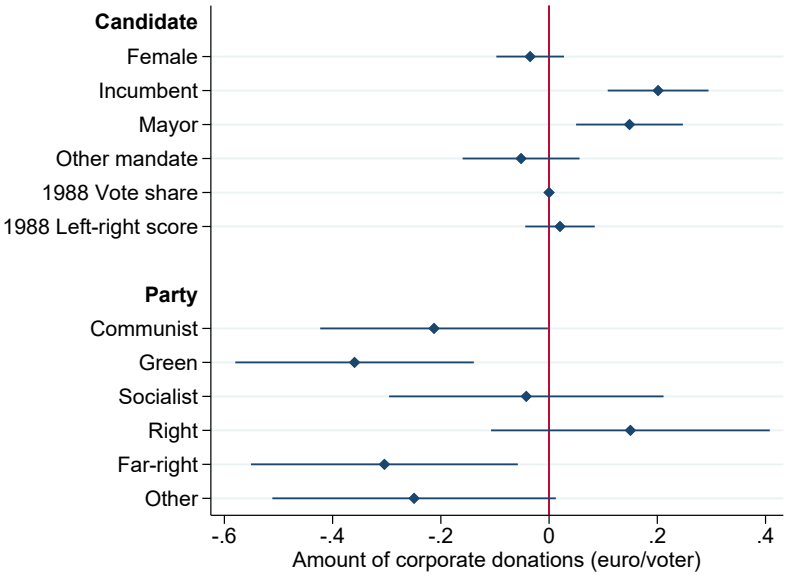
Notes: We plot, for each of the five main parties in our sample, the kernel density of homeland security prevalence in manifestos (issued before the first election round), in 1993 and in 1997 separately. The prevalence of homeland security indicates the probability (in percentage points) that the manifesto focuses primarily on homeland security issues out of 17 policy topics, based on the words it contains. Other notes as in Figure D.7.

Figure D.9: Kernel density of homeland security prevalence by party

(a) Number of corporate donations



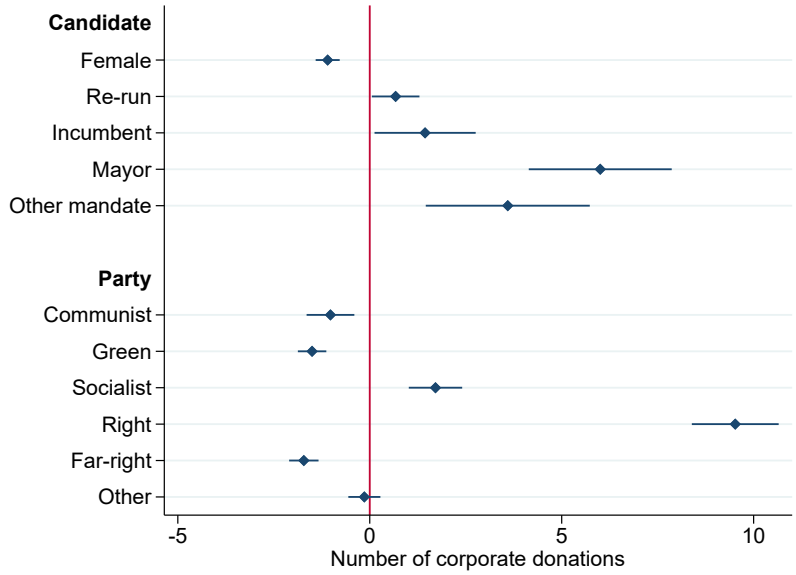
(b) Amount of corporate donations



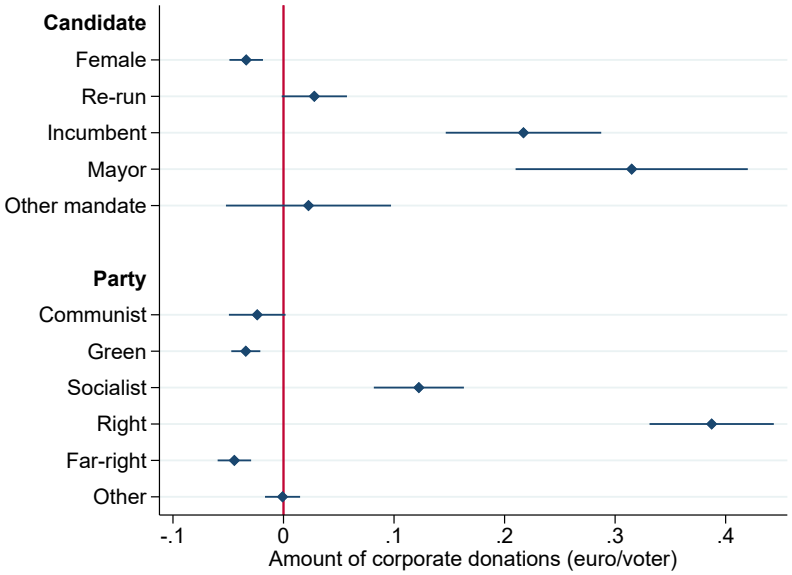
Notes: The figure shows the coefficients and their 95% confidence intervals from a regression of the number of corporate donations (Figure D.10a) or the amount of corporate donations per voter (in 2020 constant euros) (Figure D.10b) received by each candidate on a set of party fixed effects (omitting independent candidates) and candidate characteristics. We use one observation per candidate in 1993. The sample is restricted to candidates who ran both in 1988 and 1993 and whose 1988 manifesto is available. Standard errors are clustered at the district level.

Figure D.10: Candidate-level determinants of corporate donations in 1993, Controlling for 1988 left-right score

(a) Number of corporate donations



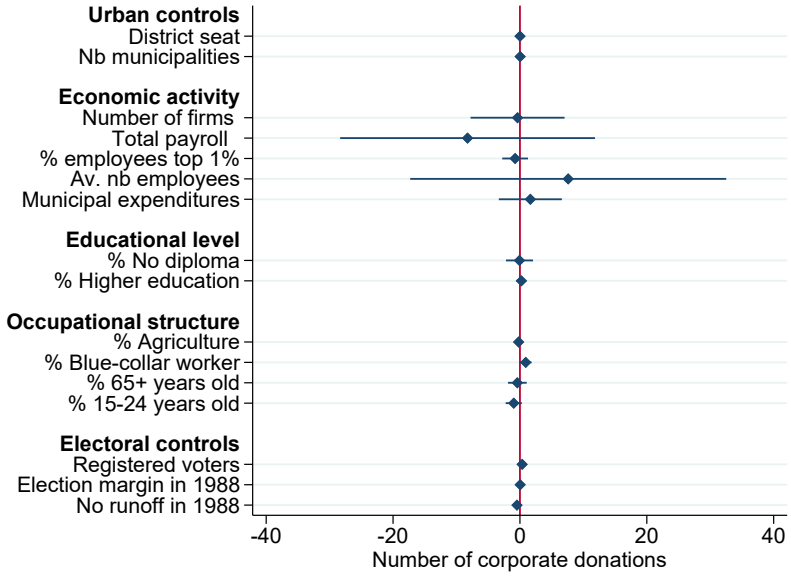
(b) Amount of corporate donations



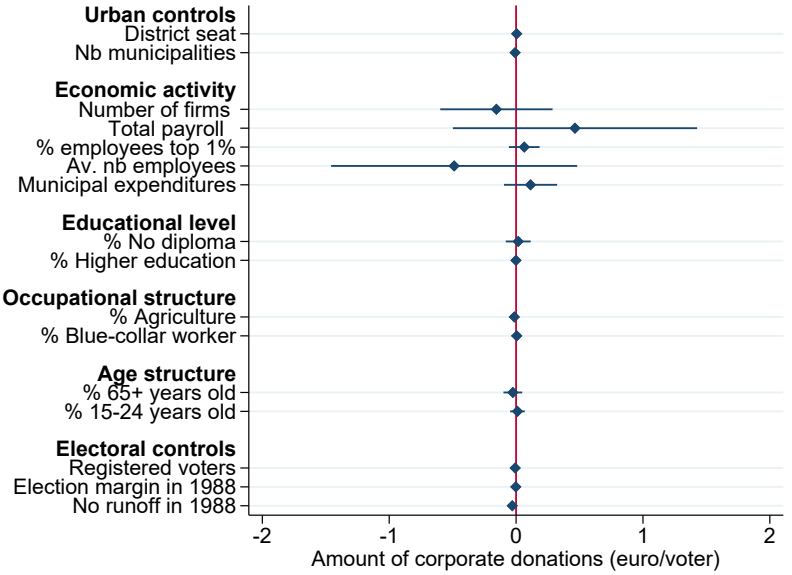
Notes: The figure shows the coefficients and their 95% confidence intervals from a regression of the number of corporate donations (Figure D.11a) or the amount of corporate donations per voter (in 2020 constant euros) (Figure D.11b) received by each candidate on a set of district fixed effects, party fixed effects (omitting independent candidates), and candidate characteristics. We use one observation per candidate in 1993. Standard errors are clustered at the district level.

Figure D.11: Candidate-level determinants of corporate donations in 1993, Controlling for district fixed effects

(a) Number of corporate donations



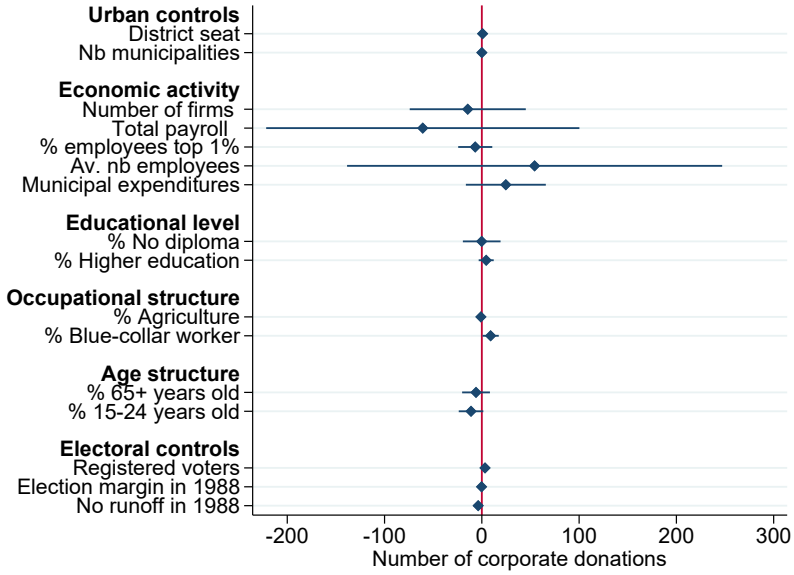
(b) Amount of corporate donations



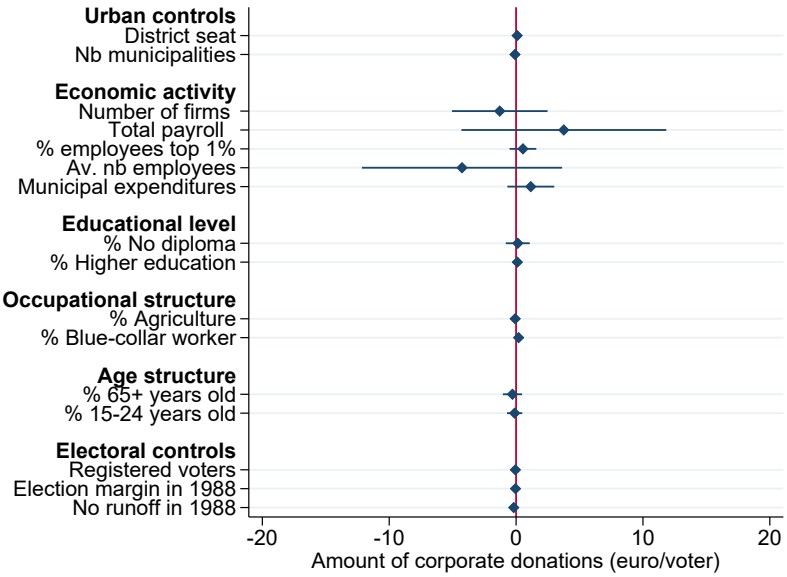
Notes: This figure shows the coefficients and their 95% confidence intervals from a regression of the number of corporate donations (Figure D.12a) or the amount of corporate donations per voter (in 2020 constant euros) (Figure D.12b) received by each candidate on a set of party fixed effects, candidate characteristics, and district characteristics (estimation of equation (1)). All explanatory variables are standardized. We use one observation per candidate in 1993. Standard errors are clustered at the district level.

Figure D.12: District-level determinants of corporate donations in 1993

(a) Number of corporate donations

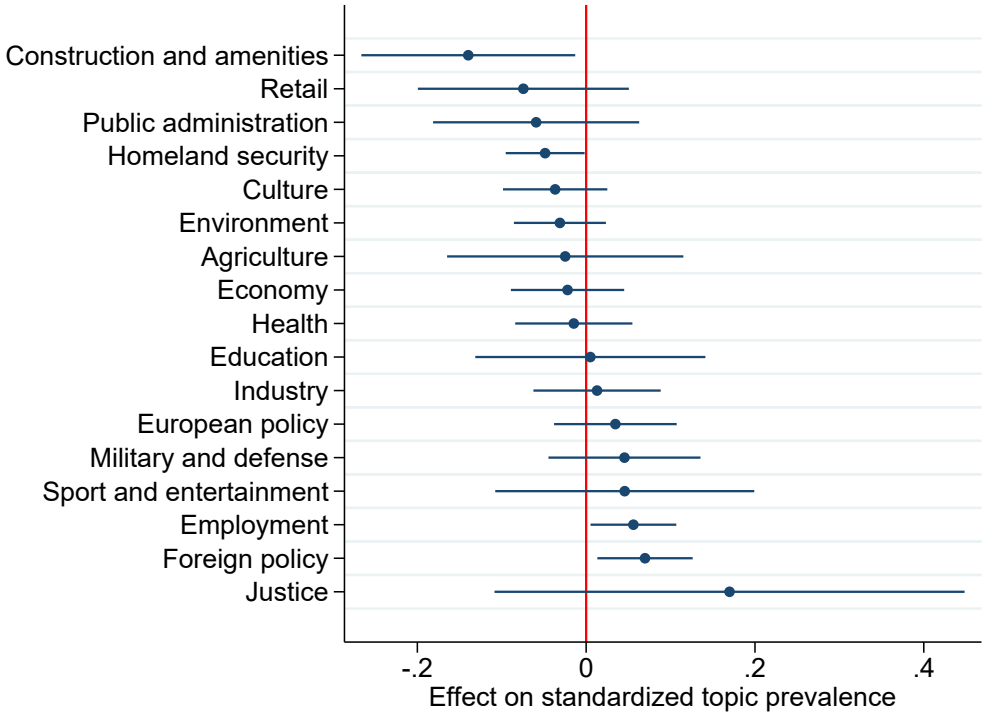


(b) Amount of corporate donations



Notes: This figure shows the coefficients and their 95% confidence intervals from a regression of the total number of corporate donations (Figure D.13a) or the total amount of corporate donations per voter (in 2020 constant euros) (Figure D.13b) received in the district (summed over all the candidates) on a set of candidate characteristics averaged at the district-level (not shown) and district characteristics. Non-dichotomous explanatory variables are standardized. We use one observation per district in 1993. Standard errors are robust.

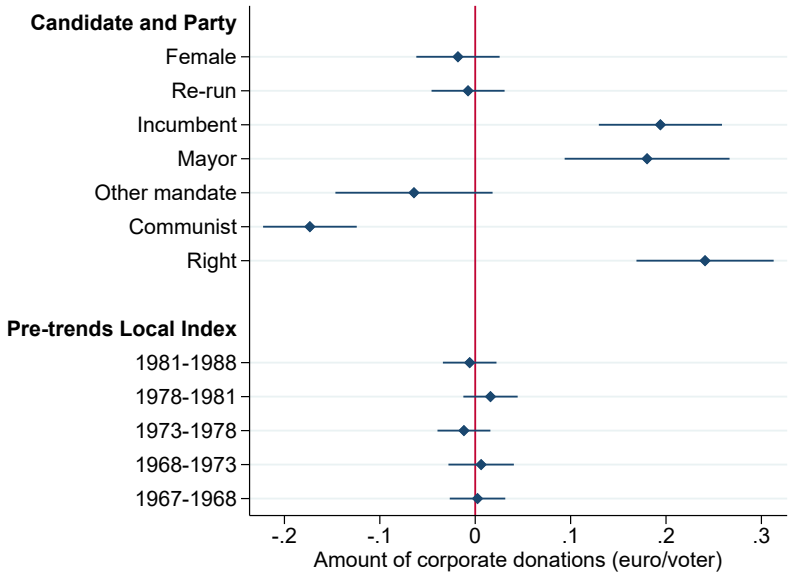
Figure D.13: District-level determinants of corporate donations in 1993, Considering the overall amount of and number of corporate donations received in the district (summed over all candidates)



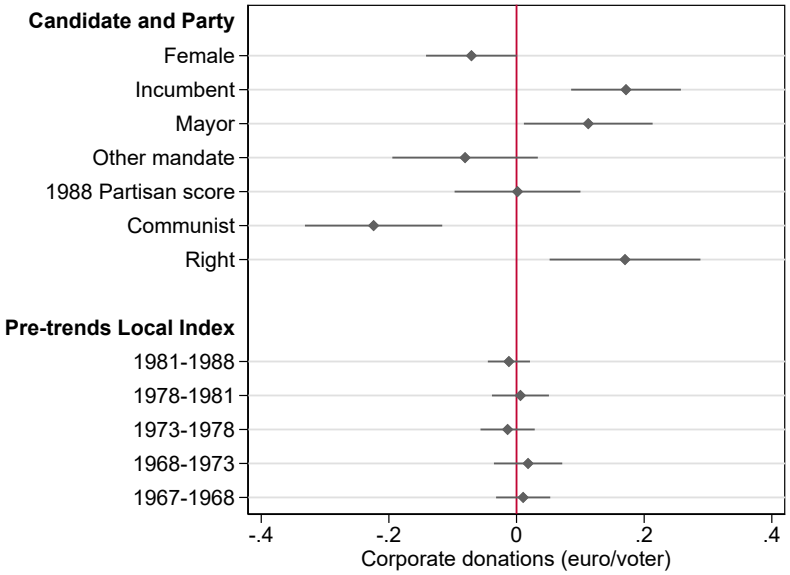
Notes: The figure shows the coefficients and their 95% confidence intervals from a regression of policy topic prevalence on the amount of corporate donations divided by its standard deviation in 1993 and multiplied by -1. We use one observation per candidate per year. The outcome is the predicted probability, for each policy topic, that a candidate manifesto focuses primarily on that topic, based on the words it contains. It is standardized by year to facilitate the comparison across topics with different mean prevalences. The sample includes all candidates who run both in 1993 and 1997, and whose manifesto is available. We control for candidate fixed effects and party×year fixed effects, as well as time-varying individual controls: indicator variables for having run in the past, for being the incumbent, and for holding other electoral mandates.

Figure D.14: Impact of corporate donations on policy topics in the manifestos

(a) All candidates



(b) Candidates running in 1988 and 1993



Notes: The figure shows the coefficients and their 95% confidence intervals from a regression of the amount of corporate donations per voter (in 2020 constant euros) received by each candidate on a set of party fixed effects, candidate characteristics and pre-trends in local index at department × party level. We use one observation per candidate in 1993. In Figure D.15a the sample includes all candidates from the Communist, the Socialist or the right-wing party (omitting candidates from the Socialist party). In Figure D.15b the sample is further restricted to candidates who run both in 1988 and 1993. Standard errors are clustered at the district level.

Figure D.15: Corporate donations and trends in local index before 1988

E Additional tables

Table E.1: Summary statistics: corporate donations in 1993, Sub-sample of candidates who received at least one corporate donation

	Mean	Median	p75	sd	N
# Corp. Donations	8.79	6.00	12.00	9.49	1,701
Corp. Donations (euros)	24,406.27	12,794.95	38,325.80	30,025.91	1,701
Corp. Donation (euros/voter)	0.37	0.19	0.55	0.48	1,701
% Corp. Donations in total revenue	37.44	34.14	59.33	28	1,701

Notes: The table presents summary statistics on corporate donations received by candidates in 1993. An observation is a candidate and the sample includes candidates who received at least one corporate donations. Other notes as in Table 1.

Table E.2: Summary statistics: Corporate donations in 1993, at the district level

	Mean	St.Dev.	Min	Max	N
Electoral district					
Registered voters	68,238	11,293	26,468	111,715	555
# Candidates	9	2	5	18	555
# Candidates with Corp. Donations	3	1	0	8	555
Corporate donations					
# Corp. Donations	26	19	1	109	555
Mean Corp. Donations (€)	2,239.65	1,256.23	0	8,479	555
Total Corp. Donations (€)	53,786.89	40,162.12	0	218,872	555

Notes: The table presents summary statistics on electoral districts and corporate donations in 1993, at the district level. Mean and total corporate donations are in 2020 constant euros. Total Corp. Donations is the sum of corporate donations in the district.

Table E.3: Largest corporate donors in 1993

Donor name	Total donations	# Donations
COLAS	401367.8	96
BOUYGUES	314952.6	47
SOGEA	312590.5	82
SPIE	304126.1	59
SAUR	258851.7	62
SCREG	244875.7	60
SOCIETE DES EAUX	225781.7	53
DUMEZ	168302.8	35
CAMPENON BERNARD	165350.1	38
OMNIUM	163184.8	38
VIA TRANSPORT	139760.2	31
GTM TP	120075.7	23
SAE	119091.5	21
SODEXHO	116926.2	21
BEUGNET	113776.6	31
ESSYS MONTENAY	106296.5	25
STREICHENBERGER	101965.9	26
JEAN LEFEBVRE	92763.39	41
SUPAE	90548.88	14
MONOPRIX	87989.89	18

Notes: The table presents the largest 20 donors in 1993, the number of donations and the amount they spent in the campaign. Total donations are in 2020 constant euros.

Table E.4: Summary statistics by sector of activity

	mean	sd	min	max	count
Agriculture					
Mean donation	1,225.65	2,242.82	6	9,842	184
Sum donations	1,790.31	4,155.91	6	37,401	184
Construction					
Mean donation	2,295.53	2,584.94	20	10,138	1,615
Sum donations	6,151.99	20,623.13	20	401,368	1,615
Culture					
Mean donation	1,908.16	2,576.25	20	9,842	157
Sum donations	2,448.34	4,720.40	20	49,211	157
Economy-Finance					
Mean donation	2,454.39	3,007.26	6	9,842	586
Sum donations	3,711.16	5,499.71	6	39,369	586
Environment-Energy					
Mean donation	3,576.80	2,760.29	30	9,842	160
Sum donations	12,990.71	32,432.74	30	304,126	160
Health					
Mean donation	1,825.77	2,823.38	10	9,842	256
Sum donations	2,793.78	6,624.57	10	76,770	256
Industry					
Mean donation	2,198.35	2,797.01	10	29,527	746
Sum donations	4,402.45	10,967.34	10	163,185	746
Justice					
Mean donation	757.85	818.28	98	2,362	10
Sum donations	757.85	818.28	98	2,362	10
NGOs					
Mean donation	3,908.34	3,153.35	49	9,842	35
Sum donations	7,305.05	8,189.27	49	36,416	35
Retail					
Mean donation	1,963.44	2,681.33	10	9,842	805
Sum donations	3,150.20	7,770.07	10	116,926	805
Sport					
Mean donation	1,074.95	2,231.77	20	9,842	23
Sum donations	1,661.20	4,084.58	20	17,716	23
Travel					
Mean donation	478.76	489.81	39	1,968	21
Sum donations	576.01	583.17	39	1,968	21
Unknown					
Mean donation	1,189.47	1,623.73	10	9,842	5,870
Sum donations	1,389.04	2,088.76	10	47,243	5,870
Total					
Mean donation	1,632.80	2,234.93	6	29,527	10,468
Sum donations	2,856.81	10,277.75	6	401,368	10,468

Notes: An observation is a donor in 1993. Donations are in 2020 constant euros.

Table E.5: Left-right words

Left	**Right**
dividend	terrorist
antidemocratic	criminal
poverty	immigration
disarmament	deportation
benefits	decadence
capitalist	patriot
abortion	europe
railroad workers	persecution
law	taxation
strike	utopia

Notes: This table shows examples of words, translated in English, with lowest (left-wing) and highest (right-wing) partisan scores, both in 1993 and in 1997. These scores (or loadings) are obtained by fitting a multinomial regression of word frequency in manifestos on an indicator variable equal to one if the candidate is from a well-identified right-wing party as opposed to a well-identified left-wing party – for 1993 and 1997 separately.

Table E.6: Topic-specific words

Homeland security	**Education**	**Environment**	**Retail**	**Health**
vote by proxy	geology	birds	bakery	speech therapy
police	tenure	fishermen	hairdresser	paramedical
firefigther	bilingual	game (animals)	craftmanship	hepatitis
electoral	school district	hunting	butcher	spokesperson
homeland	school board	fauna	slaughterhouse	physical therapy
passport	academia	waste	retail	transfusion
tobacco shops	geography	gas	organic	addict
violation	highschool	pollution	tobacco shops	midwife
library	teacher	farming	business	surgery
arrest	trainer	flood	taxi	anesthesy

Economy	**Construction and amenities**	**Public administration**	**Employment**	**Justice**
tobacco shop	national road	decentralisation	healthcare	seal
bank customer	river	rank	job training	clerk
value added	tourism	library	pension	prosecutor
gas	railroad	secretary	job seeking	prison
slaughterhouse	gas	assignment	disabled	lawyer
butcher	traveler	territory	solidarity	accountable
retail	freeway	city hall	trainee	magistrate
russian	aviation	citizenship	benefits	jurisdiction
deductible	car	exam	occasional worker	justice
taxation	traffic	application	internship	offense

Agriculture	**Military and defense**	**Foreign policy**	**Industry**	**Culture**
sheep	officer	execution	telecommunications	archeology
farmers	veteran	arrest	postal service	library
pig	prisonner	torture	gas provider	bicentennial
fishing	resistance	russian	textile	disc
milk	police	amnesty	electricity	french speaking
cereals	army	united nations	energy	movie theater
cow	troop	french speaking	oil	museum
vegetable	mutilation	diplomacy	diversification	culture
flock	deportation	turkey	industry	channel
harvest	defense	foreign	phone	music

Table E.6: Topic-specific words (continued)

Sport and entertainment	**European policy**
olympic games	turkey
soccer	english
ski	textile
youth	parliament
sport club	translation
physical education	trade agreement
swimming pool	cereals
amateur	belgian
organizer	greek
alcohol	common agricultural policy

Notes: This table shows, for each policy topic, examples of words, translated in English, with highest topic loadings. These loadings are obtained by fitting a multinomial inverse regression of word frequency in written questions to the government on a set of 17 indicator variables indicating which topic each question is about, based on the Ministry it is addressed to.

Table E.7: Prevalence of policy topics in candidate manifestos

	Mean	sd
Topic		
Agriculture	1.28	4.06
Construction and amenities	2.90	4.94
Culture	1.45	2.38
Military and defense	3.57	4.32
Economy	5.80	8.22
Education	3.83	5.90
Employment	15.75	15.87
Environment	3.24	10.50
European policy	0.27	1.36
Foreign policy	8.03	8.67
Health	4.14	5.72
Industry	2.23	3.00
Homeland security	30.53	24.34
Justice	0.24	1.31
Retail	0.16	0.59
Public administration	0.16	1.15
Sport and entertainment	0.20	0.35

Notes: The table displays the mean and standard deviation for the prevalence of each policy topic, defined as the predicted probability (in percentage points) that a candidate manifesto focuses primarily on that topic. The sample contains all first round manifestos from 1993 and 1997 that are non-empty after text pre-processing. N=10,284.

Table E.8: Summary statistics for covariates at the district level

	Mean	sd	Min	Max	Count
# Municipalities in the district	62.83	61.46	1	342	555
Region capital in the district	0.10	0.29	0	1	555
Urban district	0.25	0.43	0	1	555
Census 1990					
No diploma	47,264	41,845	3,521	358,972	555
Higher education	9,491	11,486	280	70,057	555
Agriculture	1,165	1,233	0	6,056	555
Blue-collar worker	11,090	7,474	604	61,394	555
65+ years old	16,320	16,467	1,052	134,100	555
25-34 years old	17,390	15,029	1,128	118,764	555
Covariates 1993					
District municipalities revenues	227,104	736,528	0	3,843,893	555
Number of firms	3	10	0	55	555
Mean number of employees per municipality	53.76	173.03	0	917	555
Total payroll (in thousand euros)	8,691.32	30,619.26	0	161,998	555
% employees in top 1%	0	2	0	8	555
Covariates 1997					
District municipalities revenues	266,059.67	871,395.55	0	4,552,347	555
Number of firms	4	11	0	61	555
Mean number of employees per municipality	54	173	0	918	555
Total payroll (in thousand euros)	9,309.73	32,369.09	9	171,363	555
% employees in top 1%	0.45	1.48	0	8	555

Notes: The table presents summary statistics on district covariates. An observation is a district. Census in 1990 are municipality-level census data averaged at the district level. Covariates in 1993 and 1997 are from the revenues and annual spending in infrastructure of the French municipalities with more than 10,000 inhabitants summed at the district level (municipalities' revenues and operating expenses) and from the "Déclaration Annuelle de Données Sociales" (DADS), a detailed French database on wages, summed at the district level (number of firms, employees per municipality, total payroll, share of employees in the top 1% of revenues. Municipalities' revenues and payroll are in 2020 constant euros.

Table E.9: Summary statistics: corporate donations in 1993, Sub-sample of candidates who run both in 1993 and 1997

	Mean	Median	p75	sd	N
Corp. Donations > 0	0.46	0.00	1.00	0.50	1,425
# Corp. Donations	4.98	0.00	7.00	9.01	1,425
Corp. Donations (euros)	14,822	0	18,799	26,750	1,425
Corp. Donation (euros/voter)	0.22	0.00	0.27	0	1,425
% Corp. Donations in total revenue	18.47	0.00	35.32	26.71	1,425

Notes: The table presents summary statistics on corporate donations received by candidates in 1993. An observation is a candidate and the sample includes candidates who run both in 1993 and 1997. Other notes as in Table 1.

Table E.10: Robust impact on different samples, depending on the availability of donations data

(a) Disaggregated donations unavailable

	Local index	Local references	National references	Left-right score	Extremeness
	(1)	(2)	(3)	(4)	(5)
Corporate donations (loss)	-0.157***	-0.249***	0.135**	-0.007	0.007
	(0.030)	(0.054)	(0.053)	(0.005)	(0.004)
Observations	2620	2620	2620	2620	2620
Mean outcome before ban	-0.654	1.373	3.035	-0.033	0.862
R2-Within	0.030	0.024	0.008	0.005	0.007

(b) Disaggregated donations equal to aggregate amount

	Local index	Local references	National references	Left-right score	Extremeness
	(1)	(2)	(3)	(4)	(5)
Corporate donations (loss)	-0.167***	-0.279***	0.149**	-0.005	0.010
	(0.050)	(0.098)	(0.075)	(0.007)	(0.006)
Observations	1968	1968	1968	1968	1968
Mean outcome before ban	-0.793	1.131	3.146	-0.079	1.053
R2-Within	0.017	0.022	0.007	0.009	0.006

Notes: Standard errors are clustered by district and shown in parentheses (***, **, * indicate significance at 1, 5, and 10 percent, respectively). Panel (a) includes all candidates for whom the aggregate amount of corporate donations is available but the data on disaggregated donations is not. Panel (b) includes candidates for whom the aggregate amount of corporate donations is exactly equal to the sum of individual corporate donations from the *Journal Officiel*. Other notes as in Table 3.

Table E.11: Impact of corporate donations on broad policy topics by party type

	Economy	Social	Homeland and administration	Foreign policy
	(1)	(2)	(3)	(4)
Mainstream*Corp.Don.	-1.034*	1.209**	-1.027*	0.340**
	(0.529)	(0.567)	(0.564)	(0.140)
Niche*Corp.Don.	-31.729***	13.633	2.213	2.404***
	(9.337)	(8.581)	(17.578)	(0.876)
Independent*Corp.Don.	-6.163***	4.319*	-0.068	0.978
	(2.212)	(2.527)	(2.026)	(0.855)
Observations	2602	2602	2602	2602
Mean outcome before ban	23.507	36.203	19.243	4.244
R2-Within	0.025	0.013	0.006	0.006

Notes: The outcome is the predicted probability, for each policy topic, that a candidate manifesto focuses primarily on that topic out of 4 broad topics–based on the words it contains. It is measured in percentage points. Mainstream parties are the Communist, Socialist and right-wing parties. Niche parties are the Green and far-right parties as well as smaller parties. Independent candidates are not affiliated with any party. Other notes as in Tables 3 and 5.

Table E.12: Impact of corporate donations on campaign communication by candidate type

	Local index	Local references	National references	Left-right score	Extremeness
	(1)	(2)	(3)	(4)	(5)
Corportate donations (loss)	-0.174***	-0.341***	0.106	-0.006	0.023***
	(0.056)	(0.110)	(0.092)	(0.009)	(0.008)
Corp.Don.*Female	0.049	0.033	-0.100	0.014	-0.016
	(0.085)	(0.145)	(0.160)	(0.011)	(0.011)
Corp.Don.*Re-run	0.135	0.259	-0.122	-0.004	-0.024*
	(0.094)	(0.184)	(0.148)	(0.013)	(0.012)
Corp.Don.*Incumbent	-0.094	-0.087	0.164	0.002	0.006
	(0.083)	(0.150)	(0.144)	(0.011)	(0.011)
Corp.Don.*Mayor	-0.087	-0.146	0.080	-0.007	-0.009
	(0.061)	(0.108)	(0.114)	(0.011)	(0.011)
Corp.Don.*Other mandates	-0.133*	-0.227**	0.087	0.019	-0.003
	(0.077)	(0.116)	(0.198)	(0.012)	(0.010)
Observations	2602	2602	2602	2602	2602
Mean outcome before ban	-0.652	1.375	3.031	-0.037	0.861
R2-Within	0.037	0.031	0.010	0.007	0.009

Notes: The amount of corporate donations per voter (divided by its standard deviation in 1993 and multiplied by -1) is interacted with indicator variables for being a woman, for having run in the past, for being the incumbent, for being a mayor and for holding any other electoral mandate (senator, departmental mandate or European MP) in 1993. Other notes as in Table 3.

Table E.13: Robust impact of corporate donations on the local index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Corp.Don.	-0.158***				-0.269***	-0.154***	-0.157***	-0.133***	-0.139***	-0.092***
	(0.032)				(0.055)	(0.040)	(0.029)	(0.029)	(0.027)	(0.022)
Log Corp.Don.		-0.179***								
		(0.031)								
Receiving any Corp.Don.			-0.231***							
			(0.078)							
Number of Corp.Don.				-0.022***						
				(0.005)						
Corp.Don.^{2}					-0.021***					
					(0.008)					
Observations	2602	2602	2602	2602	2602	2602	2602	2602	2602	5430
Mean outcome before ban	-0.652	-0.652	-0.652	-0.652	-0.652	-0.652	-0.652	-0.652	-0.652	-0.793
R2-Within	0.031	0.033	0.015	0.029	0.033	0.037	0.056	0.046	0.024	0.012
Candidate FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Party*Year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
District*Year FE						✓				
Party*District FE										✓
Main controls	✓	✓	✓	✓	✓	✓	✓			✓
District controls							✓			
Controls*Year FE								✓		
Contributions1988*Year FE									✓	
Larger clusters	✓									

Notes: Standard errors are clustered by department (column 1) or by district (columns 2 through 10) and shown in parentheses (***, **, * indicate significance at 1, 5, and 10 percent, respectively). We use one observation per candidate per year. In all columns but column 10, the sample includes all candidates who run both in 1993 and 1997, and whose manifesto is available. In column 10, the sample includes all candidates who run for a party that was present in the same district both in 1993 and 1997, and excludes independent candidates without a clear party affiliation. In all columns, the outcome is the local index of each candidate manifesto, which measures the prevalence of local references over national ones (divided by its standard deviation). In columns 1-2 and 5-10, the amount of corporate donations per voter and the log of this amount (plus one) are divided by their respective standard deviation in 1993 and multiplied by -1. In columns 3 and 4, the indicator variable for receiving any corporate donation and the number of distinct corporate donations are multiplied by -1. We control for candidate fixed effects and party×year fixed effects, as well as individual controls: indicator variables for having run in the past, for being the incumbent, and for holding other electoral mandates. In column 6, we add district×year fixed effects. In column 7, we control for time-varying district characteristics. In column 8, the main candidate controls are interacted with the year fixed effects, as well as past controls measured in 1988. In column 9, the year fixed effects are interacted with corporate donations, individual donations, party contributions and personal contributions from 1988, as well as a set of indicator variables for their availability. In column 10, candidate fixed effects are replaced with party×district fixed effects.

Table E.14: Impact of corporate donations on local prevalence: Nearest-neighbor matching estimation

	Local index		Local references		National references	
	(1)	(2)	(3)	(4)	(5)	(6)
ATE						
r1vs0.Corporate donations	-0.153	-0.199	-0.156	-0.412**	0.284	0.128
	(0.146)	(0.133)	(0.208)	(0.193)	(0.278)	(0.250)
Match on candidate characteristics	✓	✓	✓	✓	✓	✓
Match on district characteristics		✓		✓		✓
Observations	1,301	1,301	1,301	1,301	1,301	1,301

Notes: Robust standard errors are shown in parentheses (***, **, * indicate significance at 1, 5, and 10 percent, respectively). We use one observation per candidate in 1993. The outcome is the change in local prevalence (columns 1 and 2), the change in frequency of local references (columns 3 and 4) and the change in frequency of national references (columns 5 and 6), between 1993 and 1997. We match candidates who received any corporate donation in 1993 to those who did not using nearest-neighbor matching. All specifications match on political parties (exactly), classified in seven different categories: Communist party, Green party, Socialist party, right-wing party, far-right party, other parties and independent candidates. In odd columns, specifications also match on candidate-level characteristics from Figure 2. In even columns, specifications further match on district-level characteristics from Figure D.12. Estimates are bias-adjusted.

Table E.15: Impact of corporate donations on total revenue and other sources of revenue

	Total revenue	Donations from individuals	Party contributions	Personal contributions
	(1)	(2)	(3)	(4)
Corp.Don. (euro/voter)	-0.735***	0.054***	0.138***	0.112***
	(0.026)	(0.016)	(0.021)	(0.020)
Observations	2828	2828	2828	2828
Mean outcome before ban	0.545	0.060	0.145	0.089
R2-Within	0.593	0.041	0.065	0.056

Notes: Standard errors are clustered by district and shown in parentheses (***, **, * indicate significance at 1, 5, and 10 percent, respectively). We use one observation per candidate and per year. The sample includes all candidates who run both in 1993 and 1997, and for whom total revenues (column 1) or different sources of revenue (columns 2-4) are known. We control for candidate fixed effects and party×year fixed effects, as well as individual controls: indicator variables for having run in the past, for being the incumbent, and for holding other electoral mandates. The amount of corporate donations as well as all outcomes are measured in 2020 constant euros per voter.

Table E.16: Impact of corporate donations on shares of different sources in total revenue

	Donations from individuals	Party contributions	Personal contributions
	(1)	(2)	(3)
Share of corporate donations	0.177***	0.486***	0.317***
	(0.021)	(0.036)	(0.038)
Observations	2726	2726	2726
Mean outcome before ban	9.651	32.002	34.914
R2-Within	0.043	0.124	0.056

Notes: The share of campaign revenue coming from each source is measured in percentage points. Other notes as in Table E.15.

Table E.17: Heterogeneous effect on local index by donor size

	Local index		
	(1)	(2)	(3)
Corp.Don from: small donors ≤2	-0.069*		
	(0.035)		
Corp.Don from: multiple donors >2	-0.057**		
	(0.026)		
Corp.Don from: small donors ≤3		-0.067*	
		(0.035)	
Corp.Don from: multiple donors >3		-0.059**	
		(0.026)	
Corp.Don from: small donors ≤5			-0.084**
			(0.036)
Corp.Don from: multiple donors >5			-0.041
			(0.025)
Observations	2602	2602	2602
Mean outcome before ban	-0.652	-0.652	-0.652
R2-Within	0.022	0.022	0.022

Notes: We define small donors as donors who make 1 or 2 donations (column 1), up to 3 donations (column 2), and up to 5 donations (column 3). Other notes as in Table 6.

Table E.18: Heterogeneous effect on local index by donor's sector of activity

	Local index	Local references	National references
	(1)	(2)	(3)
Corp.Don from: other sectors	-0.001	-0.061	-0.054
	(0.029)	(0.054)	(0.043)
Corp.Don from: construction	-0.010	0.007	0.023
	(0.028)	(0.054)	(0.054)
Corp.Don from: economy	0.000	-0.022	-0.019
	(0.033)	(0.058)	(0.051)
Corp.Don from: environment	-0.045	-0.103**	0.014
	(0.030)	(0.050)	(0.053)
Corp.Don from: industry	-0.006	-0.007	0.015
	(0.030)	(0.053)	(0.054)
Corp.Don from: retail	0.016	-0.056	-0.100**
	(0.030)	(0.058)	(0.046)
Corp.Don from: unknown	-0.104**	-0.134	0.128**
	(0.045)	(0.085)	(0.063)
Observations	2602	2602	2602
Mean outcome	-0.652	1.375	3.031
R2-Within	0.028	0.029	0.012

Notes: The amount of corporate donations per voter is broken down into amounts received by donors form different sectors of activity, divided by its standard deviation in 1993 and multiplied by -1. Other notes as in Tables 3, columns 1-3.

Table E.19: Heterogeneous effect on policy topics by donor's sector of activity

	Economy	Social	Homeland and administration	Foreign policy
	(1)	(2)	(3)	(4)
Corp.Don from: other sectors	0.215	0.032	-0.225	0.044
	(0.349)	(0.399)	(0.594)	(0.111)
Corp.Don from: construction	-0.796	0.209	-0.265	0.164
	(0.598)	(0.501)	(0.504)	(0.135)
Corp.Don from: economy	-0.887*	0.188	0.725	-0.013
	(0.463)	(0.462)	(0.576)	(0.105)
Corp.Don from: environment	-0.801	0.751	-0.345	0.197*
	(0.498)	(0.481)	(0.456)	(0.110)
Corp.Don from: industry	-0.749	0.805	-0.039	0.149
	(0.489)	(0.503)	(0.502)	(0.124)
Corp.Don from: retail	-0.375	0.093	0.823	0.004
	(0.511)	(0.540)	(0.685)	(0.120)
Corp.Don from: unknown	0.246	0.085	-0.836	0.159
	(0.599)	(0.650)	(0.652)	(0.131)
Observations	2602	2602	2602	2602
Mean outcome	23.507	36.203	19.243	4.244
R2-Within	0.024	0.013	0.010	0.010

Notes: The amount of corporate donations per voter is broken down into amounts received by donors form different sectors of activity, divided by its standard deviation in 1993 and multiplied by -1. Other notes as in Table 4.

Table E.20: Impact of corporate donations on local prevalence, Sub-sample of elected representatives

	Local index	Local references	National references
	(1)	(2)	(3)
Corporate donations (loss)	-0.112**	-0.186**	0.073
	(0.046)	(0.078)	(0.089)
Observations	448	448	448
Mean outcome before ban	-0.163	2.221	2.629
R2-Within	0.039	0.032	0.011

Notes: The sample is restricted to politicians elected both in 1993 and 1997. Other notes as in Table 3.

Table E.21: Impact of corporate donations on interventions, Low- and high-visibility debates

(a) Low-visibility debates

	Number of interventions	Local index	Local references	National references
	(1)	(2)	(3)	(4)
Corporate donations (loss)	-0.414	-0.096	0.043	0.318
	(0.627)	(0.088)	(0.032)	(0.248)
Observations	222	214	214	214
Mean outcome	5.207	-1.106	0.252	3.878
R2-Within	0.088	0.034	0.053	0.033

(b) High-visibility debates

	Number of interventions	Local index	Local references	National references
	(1)	(2)	(3)	(4)
Corporate donations (loss)	-2.129	0.110	0.016	-0.316
	(3.116)	(0.076)	(0.025)	(0.251)
Observations	330	322	322	322
Mean outcome	25.764	-1.763	0.246	4.022
R2-Within	0.050	0.046	0.004	0.044

Notes: We distinguish interventions made in low-visibility debates (generating a below-median number of interventions) from interventions made in high-visibility debates (generating an above-median number of interventions). Other notes as in Table 7, Panel (b).

Table E.22: Impact of corporate donations on broad policy topics in legislative discourse

(a) Written questions to the government

	Economy	Social	Homeland and administration	Foreign policy
	(1)	(2)	(3)	(4)
Corporate donations (loss)	-0.689	-0.182	0.855	0.022
	(0.896)	(0.983)	(0.727)	(0.015)
Observations	416	416	416	416
Mean outcome	40.469	44.157	9.945	0.179
R2-Within	0.052	0.044	0.049	0.018

(b) Debate interventions

	Economy	Social	Homeland and administration	Foreign policy
	(1)	(2)	(3)	(4)
Corporate donations (loss)	2.479*	-1.897	0.681	-0.625
	(1.422)	(1.681)	(1.154)	(0.852)
Observations	356	356	356	356
Mean outcome	36.134	26.661	14.368	7.024
R2-Within	0.032	0.020	0.019	0.034

Notes: Same notes as in Tables 7 and E.11.

References

Cook, R. D. and Others (2007). Fisher lecture: Dimension reduction in regression. *Statistical Science*, 22(1):1–26.

Gentzkow, M., Shapiro, J. M., and Taddy, M. (2019). Measuring Group Differences in High-Dimensional Choices: Method and Application to Congressional Speech. *Econometrica*, 87(4):1307–1340.

Le Pennec, C. (2020). Strategic campaign communication: Evidence from 30,000 candidate manifestos. SoDa Laboratories Working Paper Series 2020-05, Monash University, SoDa Laboratories.

OpinionWay (2017). Les Français et les programmes électoraux. Sondage OpinionWay pour Le Printemps de l'Economie.

Taddy, M. (2013). Multinomial Inverse Regression for Text Analysis. *Journal of the American Statistical Association*, 108(503):755–770.

Taddy, M. (2015). Distributed multinomial regression. *The Annals of Applied Statistics*, 9(3):1394–1414.

Taddy, M. (2017). One-step estimator paths for concave regularization. *Journal of Computational and Graphical Statistics*, 26(3):525–536.