Campaign resources and electoral success:

evidence from the 2002 French parliamentary elections

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Abstract

We examine the factors that improve the candidates' likelihood of winning an election by drawing on information from campaign resources used by candidates running in the 2002 French parliamentary election. The main effects we wish to analyze are the candidates' gender, political affiliation and possible incumbency. We find that the contributions the candidates received and their political affiliations determine their acceding to the second round of the elections. But surprisingly once they make it to the second round, the contributions cease to be relevant; then only the candidates' gender, incumbency and the actual spending rather than the contribution levels matter.

Keywords: Campaign resources; Elections; Donations; France.

JEL Classification: D12, D72.

1. Introduction

The factors that improve the candidates' likelihood of winning an election come in many forms. Campaign contributions and endorsements (see for example Potters, Sloof, and van Winden 1997), as well as the efforts undertaken by the candidates (see Epstein 2000), can be expected to be an important input for political success. It is not enough that a candidate states a political platform. The candidate has to convince the public to vote for him – or her.[1] It is in particular important that voters come to recognize the candidate's name and face. To succeed, candidates must therefore campaign to make themselves known to the electorate.[2]

In elections, campaign spending matters through its effect on voter turnout. Settle and Abrams (1976), Matsusaka and Palda (1999) show that campaign spending seems to successfully raise voters' awareness of the election and their willingness to bear the costs associated with voting. Campaign spending also matters in that it affects election outcomes. With very few exceptions, empirical studies indicate that, other things equal, the more a candidate spends the more votes he or she receives (Abrams and Settle, 1976; Banaian and Luksetich, 1991; Nagler and Leighley, 1992; Gerber, 1998). Of course, other things are rarely equal and even the richest candidates have been defeated on election day. Money matters, but it is not all that matters.

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[1] For example, Paldam and Nannestad (1999) asked Danish voters about the (macro) economy and showed that in polls prior to and immediately after elections there was an increase in economic knowledge. Moreover, Blais and Young (1999) present an experiment during the 1993 elections in Canada where students in two universities were exposed to a ten minute presentation about the rational model of voting under which so many people vote when it is irrational on the cost benefit basis. They show that the presentation decreases turnout in the elections. This suggests that campaign effort has the important task of educating the public in order to influence them in favor of a candidate. An economic policy platform has small effect on the probability of a particular candidate winning the election, if the public is not aware of the problems facing the country and the suggested solutions.

[2] Uncertainty can be reduced in the models of probabilistic voting developed by Austen-Smith (1987) and Mayer and Li (1994).

In this paper we consider political competition among candidates with contribution level, gender, political affiliations and possible incumbency. The extensive previous theoretical literature on asymmetries in political competition has considered different issues on the attributes of successful political candidates within the context of an economic optimizing model. For example, Snyder (1989) investigates elections with simultaneous contests for individual seats when interest groups provide campaign contributions to political parties. He models the strategic allocation of campaign resources when two parties, which are not perfectly symmetric players, compete as a two-person game and characterizes the equilibrium strategies and outcomes under different assumptions regarding parties' objectives. Anderson, Hinich, and Ordeshook (1978) analyze a similar problem, and show that, if the game is sufficiently symmetric, maximizing the expected number of seats or the probability of winning a majority of the seats are equivalent goals. [3] Epstein (2000) investigates the relationship between individual productivity and the likelihood of electoral success by taking the campaign expenditures of a political party as given and focusing on the personal efforts made by candidates seeking election. On the other hand, Meirowitz and Wiseman (2005) develop a model of campaign contributions with network externalities and show that contributors donate to the candidate that is less desirable on policy grounds solely.

In addition, government regulation may have a strong impact on the candidates' campaign resources. Abrams and Settle (2004) describe a simple model of the campaign spending process that highlights the likely underlying factors responsible for the recent rapid growth in campaign spending and then discuss briefly the major competing theories of government regulation.

The article which is the closest to ours is that of Palda and Palda (1998). In their important contribution, they estimate the effect of campaign spending on the votes of challengers and incumbents in the 1993 elections to the French legislative assembly. Incumbent candidates can at best expect to win 1.01% of the popular vote for each extra French Franc they spend per registered voter in their district. Challengers can expect to

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[3] Nagel and Leighley (1992) show that candidates can be expected to spend more in close races and in races which are likely to be pivotal.

win at least twice as much as this. Simulations show that if campaign spending ceilings were halved, incumbents would have gained an extra ten percent of the popular vote over their closest challenging rivals. In addition, the empirical analysis suggests that voters react negatively to candidates who rely heavily on their own money for their outlays and reward candidates who rely on contributions from private individuals. These results suggest that campaign spending ceilings may inhibit political competition, and that voters may resist a candidate who relies on narrow sources of funding.

This study differs from the approach of Palda and Palda (1998) as it takes into account all the candidates and their expenditures during the elections. Our results complement those of Palda and Palda (1998) and together give a broader picture of what is happening in the election process. Drawing on information from campaign resources used by candidates running in the 2002 French parliamentary elections, we examine the determinants of the success in an election campaign[4].

The election process of the 577 representatives to the *Assemblée Nationale*, the lower house of the French parliament, is quite specific. Each representative is elected for a five-year term in a constituency whose boundaries are defined by the French parliament under the approval of the supreme French constitutional court, the *Conseil Constitutionnel*. These boundaries are defined so that each representative represents more or less the same number of citizens.

A candidate is elected in the first round of the elections if he garners more than 50% of the vote. If no candidate is elected in the first round, a second round is organized with the candidates that obtained more than 12.5% of the votes in the first round. Consequently, there may be three candidates in the second round of an election.

In our analysis we consider a two-stage Heckman (1979) process under which we take into account the candidates' gender, political affiliation and possible incumbency,

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[4] In the June 2002 French parliamentary elections, the Gaullist (mainstream right-wing) party won a majority of seats. This victory followed the success in the presidential elections held a couple of months before of Gaullist candidate and incumbent candidate Jacques Chirac. This presidential election was viewed as an upheaval in France as Jacques Chirac did not face socialist candidate Lionel Jospin as the polls had predicted but far-right leader Jean-Marie Le Pen, This election was also a success for the three French Trotskyite parties which obtained a total of 10.44% of the votes.

and the donations the candidate received from different sources. In so doing we examine the effects of each source of contribution on the candidates' probability of being elected. Our results suggest that the contributions that the candidates received and their political affiliations determine their acceding to the second round of the elections. But once they make it to the second round the story changes: only their gender, the support of the incumbent party's political machine and the actual spending rather than the contribution levels matter.

The remainder of this paper is as follows. Section 2 presents the data. Section 3 discusses the empirical strategy. Section 4 analyzes the results. Section 5 concludes.

2. The data

As discussed in the introduction, candidates running in the French parliamentary elections can be elected in the first round of the elections if they obtain more than 50% of the votes. Voters in circumscriptions elected their representatives in the first round of the French parliamentary elections held on 9 June 2002. In these 58 circumscriptions, there were 746 candidates who vied to be elected.

519 representatives were elected on the second round of the elections on 16 June 2002. Since candidates need to gather 12.5% of the votes to be qualified for the second round, there may be more than two candidates vying to be elected on the second round. In 2002, there were only ten elections with three candidates. But there were also three elections with only one candidate in the second round. This odd situation resulted from a couple of circumstances: (1) there were only two candidates qualified for the second round of the elections and (2) both of them were left-wing (one represented the French Communist party, one represented the Socialist party). The candidate who obtained the smaller number of votes in the first round then withdrew its candidacy and the remaining candidate was elected with 100% of the votes. To avoid any distortion in our empirical analysis, we deleted from our sample the three one-candidate elections that took place in the second round. We are thus left with 516 elections that were settled in the second round. In these 516 elections, there were 7688 candidates; 6617 candidates were eliminated in the first round so that only 1071 participated in the second round.

Our empirical analysis only relies on official data. The political affiliation of the candidates, which is given by the French Interior Ministry, and their results in the 2002 French parliamentary elections are taken from the website of the *Assemblée Nationale*, the French parliament[5]. We also look on this website to determine who the incumbent candidate was and which party he represented.

As for the candidates' gender, as well as received contributions, amount of personal money spent, borrowing and total expenditures, which are all denominated in euros, we use the data in issue 20 of the *Journal Officiel* published on 26 July 2003[6].

Table 1 presents the variables used in this study while Table 2 provides descriptive statistics on the candidates, their budget campaign and expenditures.

[Table 1 Here]

[Table 2 Here]

Table 2 displays some well-known features of the French parliamentary system. Few women are elected: in 2002, there were 71 women out of 577 representatives in the *Assemblée Nationale*. Also, Trotskyite and far-right parties do not have representatives elected in the *Assemblée Nationale*, mostly because of the two-round election system and in spite of their relative success in the 2002 presidential election. Finally, there are important differences between the candidates' budget campaign, as can be seen in the standard deviation of the candidates' various sources of funding. This is because candidates can either be professional politicians who receive contributions from their party or ordinary citizens who rely on their own money when vying for office.

3. Methodology

The empirical relations we present below are the best we obtained among several equations testing different combinations of explanatory variables, including non-linear specifications.

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[5] See www.assemblee-nationale.fr

[6] The *Journal Officiel* is owned by the French state and publishes, in addition to election-related information, all the laws and rulings that the French government and parliament edict.

Grouped data estimation methods can be used to estimate the success of candidates elected on the first round of the 2002 French parliamentary elections with the following relation

$$V_{1round} = \alpha_0 + X_1'\alpha_1 + X_2'\alpha_2 + X_3'\alpha_3 + \varepsilon \tag{1}$$

where the dependent variable V_{1round} is built as the ratio between the number of votes for each candidate present in elections that were settled in the first round of the election and the total number of valid votes, X_1 is a vector of dummy variables containing personal information about the candidates, X_2 is a vector comprising data on the candidates' received contributions and personal spending and X_3 is a vector of dummy variables listing the candidates' political affiliation. Following Greene (2002), we can undertake a cross-sectional estimation of the economic relation in equation (1) using a weighted least squares probit procedure for grouped data over the elections that were settled in the first round.

The empirical relation assessing the factors which affect the success of candidates in the second round of the election may be written as

$$V_{2round} = \beta_0 + X_1'\beta_1 + X_2'\beta_2 + X_3'\beta_3 + u \tag{2}$$

In elections that were settled in the second round, the dependent variable V_{2round} is either the percentage of votes received in the second round or zero if the candidate did not accede to the second round of the elections. The dependent variable V_{2round} is therefore censored. Consequently a probit procedure would generate biased and inconsistent parameter estimates. Selection models can however be used: we employ the classic Heckman (1979) two-stage estimator.

In the first stage of Heckman's (1979) estimation procedure, a probit model is used to obtain a selection model of the success in a parliamentary election: we assess the characteristics of all the candidates who garnered 12.5% of the votes in the first round in order to accede to the second round but did not receive more than 50% of the votes and

were therefore not elected in the first round. We define the selection variable *VPRES* which takes the value 1 if the candidate was present in the second round of the elections and 0 otherwise. Consequently, we select and estimate the following probit model

$$VPRES = \gamma_0 + X'\gamma_1 + \eta \tag{3}$$

where X is the vector of regressors. From the estimated parameters of the probit model, we calculate the estimated *hazard rate* $\hat{\lambda}_i$ which is equal to

$$\lambda = \frac{f(X \cdot \gamma)}{F(X \cdot \gamma)} \tag{5}$$

where γ is the vector of regressors and the vector of parameters of (4) respectively, $f(\ )$ is the probability density function of a standard normal variable, and $F(\ )$ the corresponding cumulative distribution function. We can then use λ to normalize the mean of the true error term to zero, and get consistent estimators for equation (2).

The second-stage of two-stage estimator uses the following model

$$V_{2round} = \phi_0 + X_1'\phi_1 + X_2'\phi_2 + X_3'\phi_3 + \sigma \cdot \hat{\lambda} + v \tag{6}$$

where σ is the standard deviation of the true error term ε.

If the associated coefficient to the Heckman's λ is insignificant at the 5% percent level, the estimated vote for the candidate in the second round is not affected by a selection bias.

4. Results

Table 3 displays the results from the probit estimation carried out on the elections that were settled in the first round while Table 4 shows the results obtained on the elections that were settled in the second round using Heckman's (1979) two-step estimator.

[Table 3 Here]

[Table 4 Here]

As can be seen in Table 3, few variables influence the outcome of elections that are won by one candidate in the first round. Among the personal information on the candidates, only the Incumbent Party variable matters: the candidate benefits from representing the party of the previous representative. As for the candidates' expenditures, we find that the Donations and Personal Spending variables have opposite effects: while Donations increase the number of votes, Personal Spending has a depressing effect on the candidate's result. This should not come as a surprise: candidates who receive donations from individuals or companies are usually in a dominant position in their constituency, often benefiting from their party's political machine, and win in the first round. Other candidates, who are not viewed as serious challengers, do not receive donations. They have to rely on their Personal Spending to finance their campaign but this is in pure loss.

Finally, it appears that some of the dummy variables singling out parties are significant in our regression. Dummies for the major parties, i.e., the Socialist Party, the Christian-Democrat *Union pour la Démocratie Française* (UDF – Union for French Democracy) and the Gaullist *Union pour une Majorité Populaire* (UMP – Union for a Popular Movement) are significant as most of the candidates elected on the first round belong to these parties. In addition, we find that dummies for the Trotskyite *Parti des travailleurs* (PT – Workers' Party), for left-wing candidates not affiliated with any major left-wing party and for apolitical candidates are significant and positively influence the number of votes.

Left-wing candidates who are not affiliated with any major left-wing party receive more votes in the first round of the parliamentary elections because they are usually very well organized in the circumscription where they run. Conversely, apolitical and PT candidates have no chance of winning, but they express a protest vote on the part of the voters against mainstream parties.

Additional insight on the relation between campaign resources and electoral success can be gained from Table 4 where the results of the elections settled in two rounds are shown. First, we note that Heckman's λ is insignificant at the 5% percent level so that the estimated vote for the candidate in the second round is not affected by a selection

bias. Second, we find that that the results are not modified with the inclusion or exclusion of the ten elections where three candidates ran in the second round. For brevity, we present in Table 4 the results of all the elections settled in two rounds and do not distinguish elections with two or three candidates in the second round.

Examining the results of the first step of the estimation, we find that high contributions and personal spending increase the candidate's likelihood of being on the second round of the elections. Political affiliations also play a role: candidates from two of the major French parties, the Socialist Party and the UMP, are more likely to be on the second round of the elections than candidates of the other parties. In addition, being the incumbent candidate or belonging to the incumbent party is also an asset.

The second step of the estimation singles out the elements that determine a candidate's victory in the second round. We find that only three variables matter and all three positively affect the candidate's result. The gender of the candidate matters: more specifically in the specification which we use in this study, being a woman is an asset for a candidate present on the second round of the elections. This may seem surprising in France where there are traditionally few female parliamentarians and the 2002 election being no exception. But this may be explained by the observation that, in the first place, few women vie for office. It thus appears that French voters are likely to vote for a woman but that French parties resist having female candidates. Actually, the importance of the party's political machine in a circumscription is seen as important in our results, We indeed find that the Incumbent_party variable appears significant at the 1% level, thus showing how crucial it is for a candidate to belong to the incumbent party.

Finally, the Remnant variable, which is the difference between the candidates' expenditures and total campaign budget, is shown to be significant. In other words, the higher the unspent share of the campaign budget, the candidate his/her probability or winning the election. Hence, we may interpret the Remnant variable as a proxy for the resources the candidates could have employed but did not. Candidates with high Remnant are able to allocate more personal money or receive more contributions than they need. They had the option to spend more money but chose not to exercise it as they decided that it was not needed. It would thus seem that candidates find that there may be an optimal amount of expenditures needed to influence the outcome of the vote. This result is

confirmed in Table 5 where we provide descriptive statistics for elected and defeated candidates in the second round of the elections and distinguish between candidates who spent all their campaign budget, i.e., with candidates with null Remnant variable, and those did not, i.e., with non-null Remnant variable.

[Table 5 Here]

In Table 5, we notice that elected candidates with null Remnant variable spent on average 38634.48 euros while those with non-null Remnant variable spent on average 40204.59 euros. Thus both types of elected candidates more or less spent the same amounts. There is also no major difference in the source of campaign financing for both types of elected candidates, even though elected candidates with non-null Remnant variable received slightly more donations from private individuals and party contributions than elected candidates with null Remnant variable. The same observation holds for defeated candidates with null and non-null Remnant variable. It would thus seem that candidates with non-null Remnant variable somewhat benefit from a more dominant position in the circumscription and in their party's hierarchy than candidates with null Remnant variable.

All in all, Table 4 shows that the contributions the candidates received and their political affiliations determine their acceding to the second round of the elections. But once they get to the second round, only their gender, their having the backup of the incumbent's party political machine and their actual spending appears to matter.

These observations are reinforced by the results shown in Table 6 where we test linear restrictions on the coefficients of the variables representing the various sources of funding, as well as a joint equality test between all these coefficients, which are shown in Table 4. We test the null hypothesis that the coefficients are equal. We obtain a F-statistic that is distributed following a χ^2 distribution, and we also display the significance level of this F-statistic.

[Table 6 Here]

We find that we cannot reject the null hypothesis of equality between the coefficients. In other words, our results indicate that the source of the campaign funds does not have an impact on the probability of winning an election. Rather, it is the overall amount of money raised that is crucial for candidates who want to make it to the second

round of the elections. But as the significance of the Remnant variable indicates, candidates who win the elections are often those who do not spend all their campaign budget as they know that elements, like the support of the incumbent party, may have a greater influence on the outcome of the election than money.

5. Conclusion

This paper assesses the effect of spending on the probability of electoral success by using data from the campaign resources and expenditures for all the candidates running in the 2002 French parliamentary elections. Following the peculiar French electoral system, a distinction is made between representatives elected in the first round of the elections and those elected in the second round of the elections.

We analyze elections won in the first round using a probit model. We find that these elections where a candidate is able to gather 50% of the vote show that the political machine that the candidate has built in the circumscription where he is running is the key factor of his success. This is shown in the high amount of donations that he receives during his campaign.

As for elections settled in two rounds, we use Heckman (1979)'s two stage procedure. The contributions that the candidates received and their political affiliations are found to be the key factors in acceding to the second round of the election. But the decisive factors needed to win in the second round are the candidate's gender, i.e., being a woman is an asset, and the support of the incumbent party in the circumscription.

In addition, our results show that candidates who are likely to win in the second round of the elections are those who do not spend all the contributions and personal money they allocate to their campaign budget. This suggests that, if there is no limit to the amount of contributions candidates may collect, there may well be an optimal amount of money to spend to win an election.

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Table 1. Variables and definitions

Personal information on the candidates

Gender	DV =1 if candidate is female; 0 otherwise
Incumbent_Candidate	DV =1 if candidate is the incumbent candidate; 0 otherwise
Incumbent_party	DV =1 if candidate belongs to the party of the incumbent deputy who does not run for reelection; 0 otherwise
Minister	DV =1 if candidate is a minister at the time of the elections; 0 otherwise
Junior_Minister	DV =1 if candidate is a junior minister; 0 otherwise

Contributions and expenditures

Donations	Donations received from private individuals and/or companies
Party contribution	Donations received from the candidate's party
Contributions in kind	Contributions in kind received by the candidate
Others	Other types of contributions received by the candidate
Borrowing	Loans taken by the candidate
Personal spending	Amount of personal money that the candidate devoted to his campaign
Remnant	Difference between the candidate's expenditures and total campaign budget

Political affiliations

Majority	DV=1 if candidate belongs to one of the three parties that made up the previous parliamentary majority, i.e, the Communist, Socialist and Green parties, at the time of the elections; 0 otherwise
DVFL	DV=1 if candidate runs on a far-left platform separately from the three Trotskyiste parties and the French Communist Party; 0 otherwise
DVFLLO	DV=1 if the candidate belongs to the Trotskyite "Lutte Ouvriere" party; 0 otherwise
DVFLLCR	DV=1 if the candidate belongs to the Trotskyite "Ligue Communiste Revolutionnaire" party; 0 otherwise
DVFLPT	DV=1 if the candidate belongs to the Trotskyite "Parti des Travailleurs" party; 0 otherwise
DVPCF	DV=1 if the candidate belongs to the French Communist Party; 0 otherwise
DVPS	DV=1 if the candidate belongs to the Socialist Party; 0 otherwise
DVPR	DV=1 if the candidate belongs to the left-wing "Pôle Républicain"; 0 otherwise
DVGREENS	DV=1 if the candidate belongs to the left-wing ecologist "Green" party; 0 otherwise
DVL	DV=1 if the candidate is left-wing but not affiliated with a major left-wing party; 0 otherwise
DVREG	DV=1 if the candidate belongs to a regionalist/autonomist party; 0 otherwise
DVAPO	DV=1 if the candidate is apolitical; 0 otherwise
DVMEI	DV=1 if the candidate belongs to the apolitical ecologist "Mouvement Ecologiste Independant"; 0 otherwise

DVCAP21	DV=1 if the candidate belongs to the right-wing ecologist "CAP 21" party; 0 otherwise
DVGE	DV=1 if the candidate belongs to the right-wing ecologist "Generation Ecologie" party; 0 otherwise
DVR	DV=1 if the candidate is right-wing but not affiliated with a major right-wing party; 0 otherwise
DVUDF	DV=1 if the candidate belongs to the Christian-Democrat "Union pour la Democratie Francaise"; 0 otherwise
DVUMP	DV=1 if the candidate belongs to the Gaullist "Union pour une Majorite Populaire"; 0 otherwise
DVDL	DV=1 if the candidate belongs to the free-market "Democratie Liberale" party; 0 otherwise
DVCPNT	DV =1 if the candidate belongs to the far-right conservative "Chasse, Peche, Nature and Tradition" party; 0 otherwise
DVMPF	DV =1 if the candidate belongs to the far-right conservative "Mouvement pour la France" party; 0 otherwise
DVRPF	DV =1 if the candidate belongs to the far-right conservative "Rassemblement pour la France" party; 0 otherwise
DVFN	DV=1 if the candidate belongs to the far-right working class "Front National" party; 0 otherwise
DVMNR	DV=1 if the candidate belongs to the far-right working class "Mouvement National Republicain" party; 0 otherwise
DVFR	DV=1 if the candidate runs on a far-right platform independentely from the five far-right parties

Table 2. Descriptive statistics.

		Elections settled in one round		Elections settled in two rounds		
		Defeated candidates	Elected candidates	Candidates defeated in the first round	Candidates defeated in the second round	Candidates elected in the second round
Gender	Men	394	55	3890	198	448
	Women	296	3	2727	355	68
Contributions and expenditures (in euros)						
Donations	Mean	362.05	436.81	436.81	4751.50	8601.55
	Std	1653.88	3732.43	3732.43	6540.29	9144.55
Party contribution	Mean	602.55	583.20	583.20	2547.00	6829.47
	Std	2448.59	3754.92	3754.92	6259.09	8072.05
Contributions in kind	Mean	307.68	357.66	357.66	0.00	1459.14
	Std	993.82	1407.58	1407.58	1727.40	2331.67
Others	Mean	2.40	14.00	14.00	0.00	1459.14
	Std	25.12	48.20	48.20	606.22	2331.67
Borrowing	Mean	2701.62	1908.12	1908.12	14500.00	11404.62
	Std	6976.90	47634.67	47634.67	12212.10	17515.76
Personal spending	Mean	1610.46	1819.85	1819.85	2667.50	23281.86
	Std	4909.63	33291.82	33291.82	12410.64	14172.60
Remnant	Mean	144.03	114.47	114.47	365.50	12185.25
	Std	908.23	603.65	603.65	1649.01	12809.86
Political affiliation						
DVFL		6	0	26	0	0
DVFLLO		54	0	503	2	0
DVFLLCR		37	0	399	1	0
DVFLPT		8	0	179	0	0
DVPCF		49	0	398	23	20
DVPS		47	1	49	254	138
DVPR		36	0	368	3	0
DVGREENS		50	0	373	26	3
DVL		45	1	450	21	13
DVREG		17	0	148	2	1
DVAPO		69	0	737	0	1
DVMEI		27	0	221	0	0
DVCAP21		10	0	84	0	0
DVGE		30	0	307	0	1
DVR		20	0	424	11	7
DVUDF		1	7	122	19	23
DVUMP		5	49	39	152	308
DVDL		0	0	12	0	0
DVCPNT		31	0	373	1	0
DVMPF		24	0	260	0	0
DVRPF		4	1	77	1	1
DVFN		56	0	477	37	0
DVMNR		54	0	506	0	0
DVFR		10	0	85	0	0

Notes: • The total number of elections is settled in two rounds is 516 as we excluded from our dataset 3 elections where only one candidate was present in the second round following the withdrawal of his challenger.

  • The total number of apolitical candidates is superior to the number of seats in the *Assemblée Nationale* because there are often several apolitical candidates running independently in the same circumscription.

Table 3. Elections settled in the first round

Probit regression

	Coefficient	std err	z-stat	Prob
Gender	-0.012	0.01	-1.55	0.123
Incumbent_Candidate	-0.023	0.014	-1.59	0.111
Incumbent_party	0.154	0.13	5.21	0.000
Minister	0.018	0.01	1.54	0.125
Junior_Minister	0.014	0.04	0.41	0.680
Donations	0.001	4.31E-04	2.52	0.012
Party contribution	0.00	4.10E-04	1.01	0.315
Contributions in kind	0.00	0.02	0.48	0.634
Others	0.01	0.02	0.48	0.635
Borrowing	0.00	3.60E-04	0.70	0.486
Personal spending	0.00	3.90E-04	-2.12	0.035
Remnant	0.00	9.47E-04	0.10	0.919
Majority	0.03	0.04	0.76	0.451
DVFL	0.09	0.56	1.57	0.117
DVFLLO	-0.03	0.05	-0.64	0.526
DVFLLCR	0.00	0.05	-0.04	0.969
DVFLPT	0.14	0.06	2.33	0.020
DVPCF	0.02	0.02	0.76	0.450
DVPS	0.04	0.15	2.83	0.005
DVPR	0.05	0.05	0.50	0.310
DVGREENS				
DVL	0.01	0.04	2.07	0.039
DVAPO	0.09	0.04	2.07	0.004
DVREG	-0.05	0.08	-0.71	0.481
DVMEI	-0.01	0.06	-0.22	0.823
DVCAP21				
DVGE				
DVR	0.05	0.05	0.97	0.332
DVCPNT	0.00	0.05	0.07	0.944
DVUDF	0.09	0.04	2.11	0.036
DVUMP	0.09	0.04	2.21	0.028
DVDL				
DVMPF	0.01	0.04	0.17	0.866
DVRPF	-0.01	0.13	-0.11	0.912
DVFN	0.07	0.04	1.91	0.057
DVMNR				
DVFR	0.09	0.09	1.01	0.315
Intercept	-2.92	0.04	-82.05	0.000
Adjusted Rsquared	0.1898			
F(32,46)	4.35			
Prob>F	0.000			
Number of observations	746			

Note: The dummy variables DVGREENS, DVCAP21, DVGE, DVDL and DVMNR were eliminated from the regression because of multicolinearity.

Table 4. Elections settled in the second round

Heckman Step 1

	Coefficient	std err	z-stat	Prob
Gender	-0.156	0.08	-1.86	0.063
Incumbent_Candidate	2.218	0.21	10.60	0.000
Incumbent_party	1.013	0.28	3.50	0.000
Minister	4.918			
Junior_Minister	6.849			
Donations	0.065	0.008	8.07	0.000
Party contribution	0.045	0.11	4.28	0.000
Contributions in kind	0.059	0.03	2.04	0.042
Others	0.115	0.08	1.33	0.183
Borrowing	0.028	0.00	10.49	0.000
Personal spending	0.033	0.00	9.73	0.000
Remnant	-0.046	0.03	-1.80	0.072
Majority	0.115	0.13	0.89	0.372
DVFL	-4.860			
DVFLLO	-4.310			
DVFLLCR	5.600			
DVFLPT	4.750			
DVPCF	-0.550	0.17	-3.18	0.001
DVPS	1.852	0.15	12.46	0.000
DVPR	-1.290	0.44	-2.95	0.003
DVGREENS				
DVL	-0.122	0.20	-0.62	0.537
DVAPO	-6.300			
DVREG	-0.250	0.32	-0.79	0.432
DVMEI	-4.120			
DVCAP21	-4.509			
DVGE	-1.800	1.52	-1.18	0.236
DVR	-0.508	0.21	-2.48	0.013
DVCPNT	-1.150	0.39	-2.94	0.003
DVUDF	0.003	0.21	0.01	0.989
DVUMP	2.015	0.20	9.91	0.000
DVDL	-0.055	0.54	-0.10	0.918
DVMPF	-1.255	0.596	-2.10	0.035
DVRPF	-0.550	0.40	-1.38	0.168
DVFN	-0.005	0.18	-0.03	0.974
DVMNR	-5.650			
DVFR	-4.809			
Intercept	-2.037	0.16	-12.79	0.000
λ	45.280	112.92	0.40	0.688

Heckman Step 2

	Coefficient	std err	z-stat	Prob
Gender	135.98	66.99	2.03	0.042
Incumbent_Candidate	47.97	76.81	0.62	0.532
Incumbent_party	449.11	122.89	3.65	0.000
Minister	-111.07	261.81	-0.42	0.671
Junior_Minister	-70.60	320.06	-0.22	0.825
Donations	0.82	3.90	0.21	0.834
Party contribution	-1.58	4.83	-0.33	0.743
Contributions in kind	6.86	13.49	0.51	0.611
Others	41.66	44.08	0.95	0.345
Borrowing	0.71	2.36	0.30	0.762
Personal spending	4.08	2.82	1.45	0.148
Remnant	37.00	12.24	3.02	0.003
Majority	-27.75	389.25	-0.07	0.943
DVFL				
DVFLLO				
DVFLLCR				
DVFLPT				
DVPCF				
DVPS	7.96	158.23	0.05	0.960
DVMPR	266.44	730.13	0.36	0.715
DVGREENS	-3.88	219.25	-0.02	0.986
DVL	-104.69	398.33	-0.26	0.793
DVAPO				
DVREG	69.67	630.45	0.11	0.912
DVMEI				
DVCAP21				
DVGE	-1.62	881.01	-0.05	0.962
DVR	-83.87	409.10	-0.21	0.838
DVCPNT	-435.23	972.12	-0.45	0.654
DVUDF	-11.58	386.50	-0.03	0.976
DVUMP	64.83	374.12	0.17	0.862
DVDL	373.00	721.43	0.01	0.996
DVMPF	51.14	954.98	0.05	0.957
DVRPF	-151.99	725.20	-0.21	0.834
DVFN	-52.66	400.52	-0.13	0.895
DVMNR				
DVFR				
Intercept	-112.16	400.46	-0.28	0.779

Number of observations: 7688
Censored observations: 6617
Uncensored observations: 1071
Wald(χ2)=1269.02

Note: The dummy variables DVFL, DVFLLO, DVFLLCR, DVFLPT, DVGREENS, DVMEI, DVCAP21, DVMNR and DVFR were eliminated from the regression because of multicolinearity.

Table 5. Campaign budget and expenses of elected and defeated candidates in the second round of the parliamentary elections

	Total Expenses	Total Contributions	Remnant	Donations	Party contribution	Contributions in kind	Others	Borrowing	Personal spending
Candidates elected in the second round with null Remnant variable									
Mean	38634.48	39659.23	0	7491.39	5487.05	1517.12	48.01	11770.96	13152.92
Std	11783.95	25530.08	0	8136.95	6782.68	2564.61	224.01	20146.71	12874.00
Max	72396	431501	0	44316	30490	17515	1866	289809	59616
Min	2557	2557	0	35	9	5	1	250	6
Candidates elected in the second round with non-null Remnant variable									
Mean	40204.59	45038.58	2096.99	10319.85	8889.75	1378.76	104.58	10907.41	10783.99
Std	11311.75	39316.04	4443.34	10272.70	9351.87	1929.29	966.00	12552.31	12614.49
Max	64883	577373	40558	57737	43880	8670	13556	37014	52380
Min	646	661	1	46	438	10	17	424	15
Candidates defeated in the second round with null Remnant variable									
Mean	32586.70	32214.16	0	3886.03	3212.67	895.17	32.62	13096.92	10711.16
Std	15123.87	14046.57	0	5414.16	5149.23	1778.30	184.25	12077.02	12348.94
Max	212130	168098	0	28500	32994	14625	2378	45876	53331
Min	127	127	0	30	17	15	1	195	1
Candidates defeated in the second round with non-null Remnant variable									
Mean	33604.62	34976.63	1369.73	5929.46	5733.92	992.25	122.90	12136.41	10631.83
Std	12726.67	12343.18	2654.75	8576.91	8148.35	1602.38	1092.15	12588.28	12611.13
Max	64837	65140	14924	56496	48010	8001	13556	39045	53409
Min	937	2230	1	30	17	5	41	3	32

Table 6. Linear restriction tests on the coefficients of the funding source variables

		Testing linear restrictions on pairs of coefficients				
	Donations	Party contribution	Contributions in kind	Others	Borrowing	Personal spending
Donations	n/a	0.18 (0.6723)	0.19 (0.6662)	0.85 (0.3555)	0 (0.9788)	0.61 (0.4331)
Party contribution		n/a	0.34 (0.5591)	0.96 (0.3277)	0.21 (0.6437)	1.26 (0.2616)
Contributions in kind			n/a	0.57 (0.4508)	0.2 (0.6538)	0.04
Others				n/a	0.86 (0.3525)	0.72 (0.8391)
Borrowing					n/a	2.05 (0.152)
Personal spending						n/a

Testing linear restrictions on all the coefficients
F-statistic=3.70 Probability=0.5936

Note: The Table shows tests of linear restrictions on the parameters and gives the value of the F-statistic for pairs of variables, where the null hypothesis is that the coefficients are equal. The number in brackets is the significance level of the test statistic. The Table also provides the test where the null hypothesis is that all the coefficients are assumed to be equal.