SUPPLEMENT TO "EXPRESSIVE VOTING AND ITS COST: EVIDENCE FROM RUNOFFS WITH TWO OR THREE CANDIDATES"

(*Econometrica*, Vol. 86, No. 5, September 2018, 1621–1649)

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APPENDIX A: ADDITIONAL TABLES AND FIGURES

TABLE A-I

ELECTIONS IN THE SAMPLE[a]

	Year	Number of Observations
Parliamentary elections	1978	423
	1981	333
	1988	455
	1993	496
	1997	565
	2002	519
	2007	467
	2012	541
	Total	3,799
Local elections	2011	1,561
	2015	1,897
	Total	3,458
Total		7,257

[a]Parliamentary elections are held in all French constituencies every five years. Before 2013, local elections took place every three years and, in each département, only half of the cantons were electing their council member in a given election. After the 2013 reform, all cantons participated in elections held every six years. The reform further reduced the number of cantons from 4035 to 2054, to leave the total number of council members roughly unchanged. All French territories participate in local elections, except for Paris and Lyon (where the departmental council is elected during municipal elections) and some French territories overseas.

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 https://doi.org/10.3982/ECTA15373

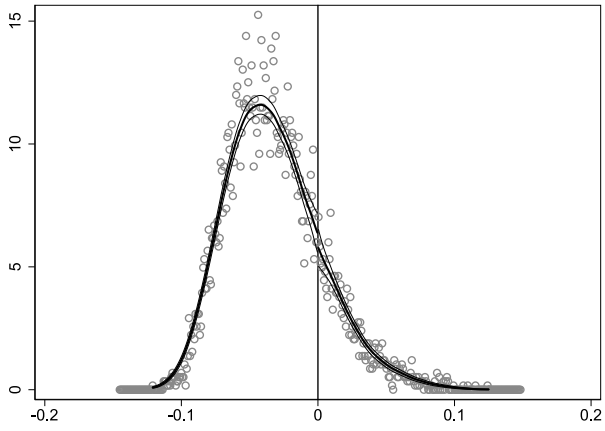

FIGURE A1.—McCrary test of the density of the running variable. *Notes*: This figure tests for a jump in the density of the running variable (the qualifying margin of the third-highest-ranking candidate in the first round) at the threshold. The solid line represents the density of the running variable. Thin lines represent the confidence intervals.

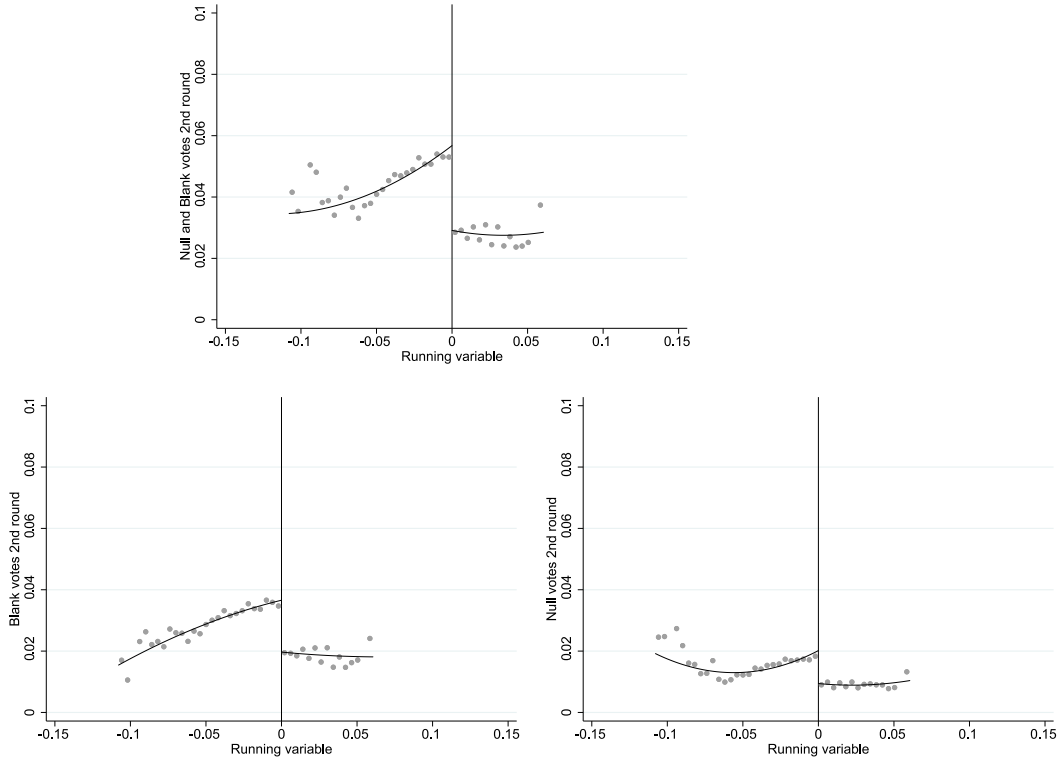

FIGURE A2.—Impact on blank and null votes separately in the 2015 local elections. *Notes*: Sample includes only the 2015 local elections. Dots represent the local averages of the outcome variable (y-axis). Averages are calculated within 0.4 percentage-point-wide bins of the running variable (x-axis). The running variable (qualifying margin of the third-highest-ranking candidate in the first round) is measured in percentage points. Continuous lines are a quadratic fit.

TABLE A-II

FIRST-ROUND SUMMARY STATISTICS: DISTRICTS CLOSE TO THE THRESHOLD VERSUS FULL SAMPLE[a]

	Summary Statistics—1st Round					
	Full Sample			Close to the Threshold		
	Mean	Sd	Obs	Mean	Sd	Obs
Registered voters	45,964	30,882	7,257	45,753	30,812	1,817
Turnout	0.582	0.124	7,257	0.619	0.100	1,817
Candidate votes	0.562	0.122	7,257	0.597	0.101	1,817
Blank and Null votes	0.019	0.011	7,257	0.022	0.011	1,817
Number of candidates	7.78	4.08	7,257	7.36	4.09	1,817
Vote share 3rd candidate (cand. votes)	0.167	0.053	7,257	0.208	0.036	1,817
Vote share top2 candidates (cand. votes)	0.657	0.098	7,257	0.625	0.086	1,817

[a]Districts close to the threshold include all districts in which the first-round vote share of the third candidate (as a fraction of registered citizens) was within exactly 2 percentage points from the threshold.

TABLE A-III

INTENT TO TREAT ESTIMATES WHEN THE THIRD CANDIDATE HAS THE SAME ORIENTATION AS ONE OF THE TOP TWO CANDIDATES[a]

	2nd Round				
	Turnout	Null and Blank	Candidate Votes	Vote Share Top 2	Closest Cand Wins
Outcome	(1)	(2)	(3)	(4)	(5)
3rd qualifies	−0.015	−0.004	−0.010	−0.023	0.022
	(0.019)	(0.003)	(0.020)	(0.020)	(0.068)
Robust *p*-value	0.398	0.314	0.526	0.261	0.611
Observations	687	824	690	718	820
Polynomial order	1	1	1	1	1
Bandwidth	0.024	0.029	0.024	0.025	0.030
Band. method	MSERD	MSERD	MSERD	MSERD	MSERD
Mean	0.676	0.033	0.643	0.641	0.718

[a]Sample includes all elections where the third candidate has the same orientation as one of the top two candidates. In column (5), the sample is further restricted to elections where the candidate ideologically closest to the third is identified (we exclude the elections where the three candidates have the same orientation and elections where one of the top two candidates is from a non-classified orientation). Standard errors are in parentheses. Statistical significance is computed based on the robust *p*-value and ***, **, and * indicate significance at 1, 5, and 10%, respectively. Each column reports the results from a separate local polynomial regression. In columns (1) to (4), each outcome uses the number of registered voters as the denominator. In column (5), the outcome is a dummy equal to 1 if the candidate closest to the third wins the election. The independent variable is a dummy equal to 1 if the third candidate is qualified. Separate polynomials are fitted on each side of the threshold. The polynomial order is 1, and the optimal bandwidths are derived under the MSERD procedure.

TABLE A-IV

IMPACT ON BLANK AND NULL VOTES SEPARATELY FOR THE 2015 LOCAL ELECTIONS[a]

	2nd Round		
Outcome	Null and Blank Votes (1)	Blank Votes (2)	Null Votes (3)
3rd present	−0.027***	−0.015***	−0.011***
	(0.003)	(0.002)	(0.001)
Robust *p*-value	0.000	0.000	0.000
Observations	474	386	601
Polynomial order	1	1	1
Bandwidth	0.014	0.011	0.017
Band. method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.053	0.036	0.017

[a]Sample includes only the 2015 local elections. Standard errors are in parentheses. Statistical significance is computed based on the robust *p*-value and ***, **, and * indicate significance at 1, 5, and 10%, respectively. Each column reports the results from a separate local polynomial regression. Each outcome uses the number of registered voters as the denominator. The variable of interest (the presence of a third candidate in the second round) is instrumented by the assignment variable (whether the vote share of the third-highest-ranking candidate was higher than the cutoff). Separate polynomials are fitted on each side of the threshold. The polynomial order is 1, and the optimal bandwidths are derived under the MSERD procedure.

TABLE A-V

IMPACT ON THE VOTE SHARES OF THE CANDIDATES WHO RANKED FIRST AND SECOND IN THE FIRST ROUND, TAKEN SEPARATELY[a]

	2nd Round		
Outcome	Vote Share Top 2 (1)	Vote Share 1st (2)	Vote Share 2nd (3)
3rd present	−0.069***	−0.032**	−0.035**
	(0.020)	(0.011)	(0.012)
Robust *p*-value	0.003	0.012	0.016
Observations	2,250	2,923	2,126
Polynomial order	1	1	1
Bandwidth	0.024	0.031	0.024
Band. method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.551	0.308	0.249

[a]Standard errors are in parentheses. Statistical significance is computed based on the robust *p*-value and ***, **, and * indicate significance at 1, 5, and 10%, respectively. Each column reports the results from a separate local polynomial regression. Each outcome uses the number of registered voters as the denominator. The variable of interest (the presence of a third candidate in the second round) is instrumented by the assignment variable (whether the vote share of the third-highest-ranking candidate was higher than the cutoff). Separate polynomials are fitted on each side of the threshold. The polynomial order is 1, and the optimal bandwidths are derived under the MSERD procedure.

TABLE A-VI

IMPACT ON CANDIDATES A AND B WHEN THE THIRD CANDIDATE IS C (1ST SETTING)[a]

	2nd Round		
Outcome Variable	Top Two Cand. (1)	Cand. A (2)	Cand. B (3)
3rd present	−0.077***	−0.025**	−0.052***
	(0.016)	(0.010)	(0.010)
Robust *p*-value	0.000	0.024	0.000
Observations	556	627	508
Polynomial order	1	1	1
Bandwidth	0.019	0.022	0.018
Bandwidth method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.547	0.268	0.285

[a]Sample includes the elections where the top three candidates have distinct political orientations and where the third candidate is located to the right of both the first and the second candidates. Other notes as in Table A-V.

TABLE A-VII

IMPACT ON CANDIDATES B AND C WHEN THE THIRD CANDIDATE IS A (2ND SETTING)[a]

	2nd Round		
Outcome Variable	Top Two Cand. (1)	Cand. B (2)	Cand. C (3)
3rd present	−0.062**	−0.086***	0.005
	(0.020)	(0.019)	(0.014)
Robust *p*-value	0.021	0.000	0.639
Observations	136	160	187
Polynomial order	1	1	1
Bandwidth	0.012	0.013	0.015
Bandwidth method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.478	0.300	0.169

[a]Sample includes the elections where the top three candidates have distinct political orientations and where the third candidate is located to the left of both the first and the second candidates. Other notes as in Table A-V.

TABLE A-VIII

IMPACT ON CANDIDATES A AND C WHEN THE THIRD CANDIDATE IS B (3RD SETTING)[a]

	2nd Round		
Outcome Variable	Top Two Cand. (1)	Cand. A (2)	Cand. C (3)
3rd present	−0.125***	−0.071***	−0.056
	(0.039)	(0.022)	(0.036)
Robust *p*-value	0.004	0.004	0.202
Observations	145	152	133
Polynomial order	1	1	1
Bandwidth	0.015	0.016	0.013
Bandwidth method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.508	0.289	0.217

[a]Sample includes the elections where the top three candidates have distinct political orientations and where the third candidate is located between the first and the second candidates. Other notes as in Table A-V.

TABLE A-IX

IMPACT ON THE WINNING MARGIN IN THE SECOND ROUND[a]

Outcome	2nd Round Distance Winner—2nd Candidate (1)
3rd present	−0.058***
	(0.014)
Robust *p*-value	0.000
Observations	2,677
Polynomial order	1
Bandwidth	0.030
Band. method	MSERD
Mean, left of the threshold	0.155

[a]The outcome variable is the vote share of the winner minus the vote share of the second candidate in the second round, as fractions of candidate votes. Other notes as in Table A-V.

TABLE A-X

IMPACT ON THE WINNING MARGIN DEPENDING ON THE ORIENTATIONS OF THE TOP TWO CANDIDATES[a]

	Distance Winner—2nd Candidate, 2nd Round		
Outcome	Full Sample (1)	Top 2 Same Orientation (2)	Top 2 Distinct Orientations (3)
3rd present	−0.058***	0.056	−0.080***
	(0.014)	(0.045)	(0.016)
Robust *p*-value	0.000	0.407	0.000
Observations	2,677	164	2,303
Polynomial order	1	1	1
Bandwidth	0.030	0.024	0.028
Band. method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.155	0.136	0.156

[a]The outcome variable is the vote share of the winner minus the vote share of the second candidate in the second round, as fractions of candidate votes. Column (2) includes only the elections where the top two candidates have the same orientation. Column (3) includes only the elections where the top two candidates have distinct orientations. Other notes as in Table A-V.

TABLE A-XI

IMPACT ON PARTICIPATION DEPENDING ON THE ORIENTATIONS OF THE TOP TWO CANDIDATES[a]

	Full Sample			Top 2 Same Orientation			Top 2 Distinct Orientations		
	Turnout (1)	BlankNull (2)	Cand Vot (3)	Turnout (4)	BlankNull (5)	Cand Vot (6)	Turnout (7)	BlankNull (8)	Cand Vot (9)
3rd present	0.040**	−0.037***	0.078***	0.120***	−0.087***	0.207***	0.026	−0.032***	0.059**
	(0.017)	(0.004)	(0.019)	(0.033)	(0.016)	(0.038)	(0.020)	(0.003)	(0.021)
Robust *p*-value	0.041	0.000	0.001	0.002	0.000	0.000	0.215	0.000	0.014
Observations	2,298	2,630	2,374	301	286	274	1,981	2,076	1,998
Polyn. order	1	1	1	1	1	1	1	1	1
Bandwidth	0.025	0.028	0.026	0.033	0.031	0.030	0.024	0.025	0.024
Band. method	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD
Mean	0.598	0.047	0.548	0.533	0.097	0.439	0.605	0.042	0.562

[a]Columns (4), (5), and (6) include only elections where the top two candidates have the same orientation. Columns (7), (8), and (9) include only elections where the top two candidates have distinct orientations. Other notes as in Table A-V.

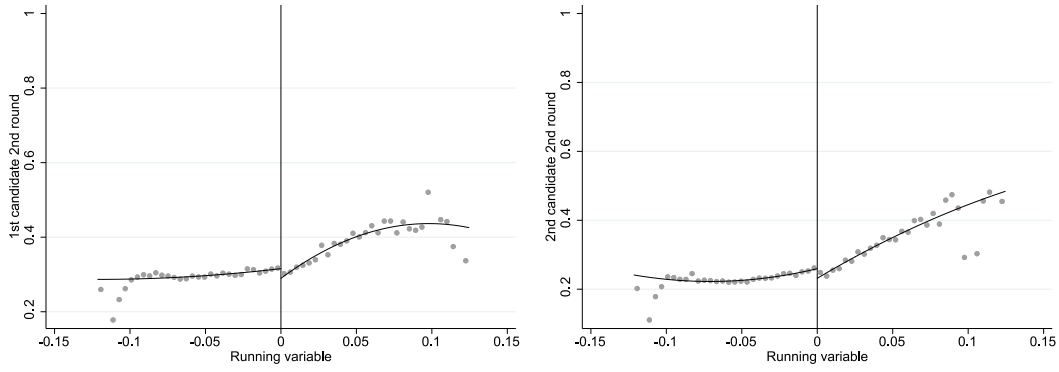

FIGURE A3.—Impact on the vote shares of the candidates who ranked first and second in the first round, taken separately. *Notes*: Dots represent the local averages of the vote share of the first (resp. second) candidate in the second round (y-axis). Vote shares are computed using the number of registered citizens as the denominator. Averages are calculated within 0.4 percentage-point-wide bins of the running variable (x-axis). The running variable (qualifying margin of the third-highest-ranking candidate in the first round) is measured in percentage points. Continuous lines are a quadratic fit.

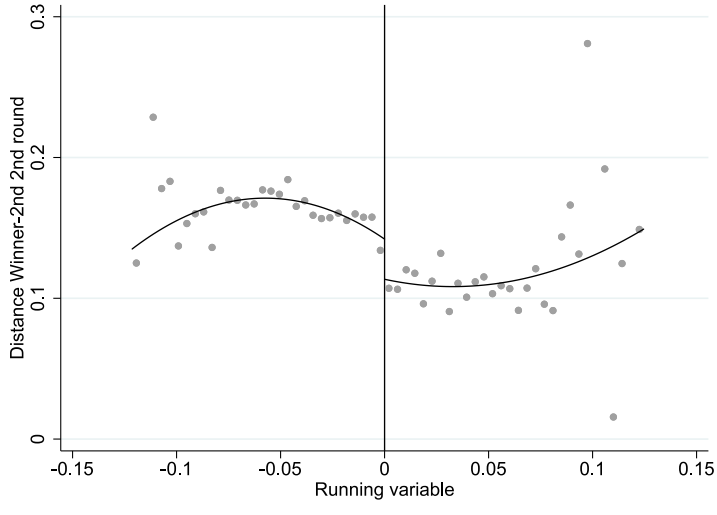

FIGURE A4.—Impact on the winning margin in the second round. *Notes*: Dots represent the local averages of the difference between the share of candidate votes obtained by the winner and by the candidate who came in second in the second round. Other notes as in Figure A3.

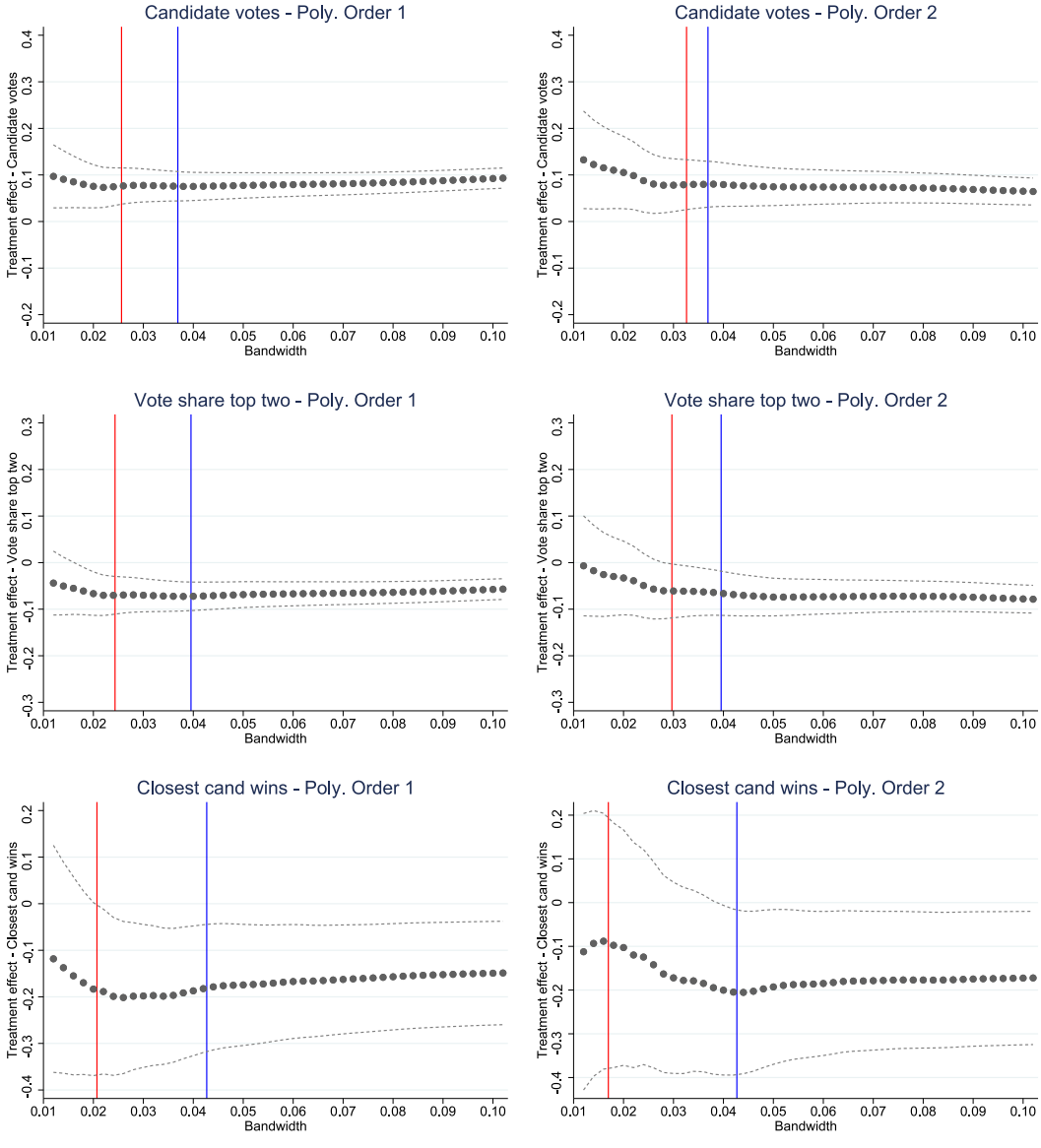

FIGURE A5.—Robustness of the main results to bandwidth choice. *Notes*: We show the sensitivity of our main results to bandwidth choice, using a linear or a quadratic specification. Dots represent the estimated treatment effect of the presence of the third candidate using different bandwidths (x-axis). Dotted lines represent the 95% robust confidence interval. We report all estimates for values of the bandwidth from 1 to 10 percentage points, in step of 0.2 percentage points. The vertical red (resp. blue) line gives the value of the MSERD (resp. IK) optimal bandwidth.

APPENDIX B: PLACEBO TESTS

We perform a series of placebo tests which examine whether there is a discontinuity in any of the following first-round variables at the cutoff: voter turnout, number of registered voters, number of candidates, and closeness (defined as the difference between the vote shares obtained by the top two candidates, as a fraction of candidate votes).

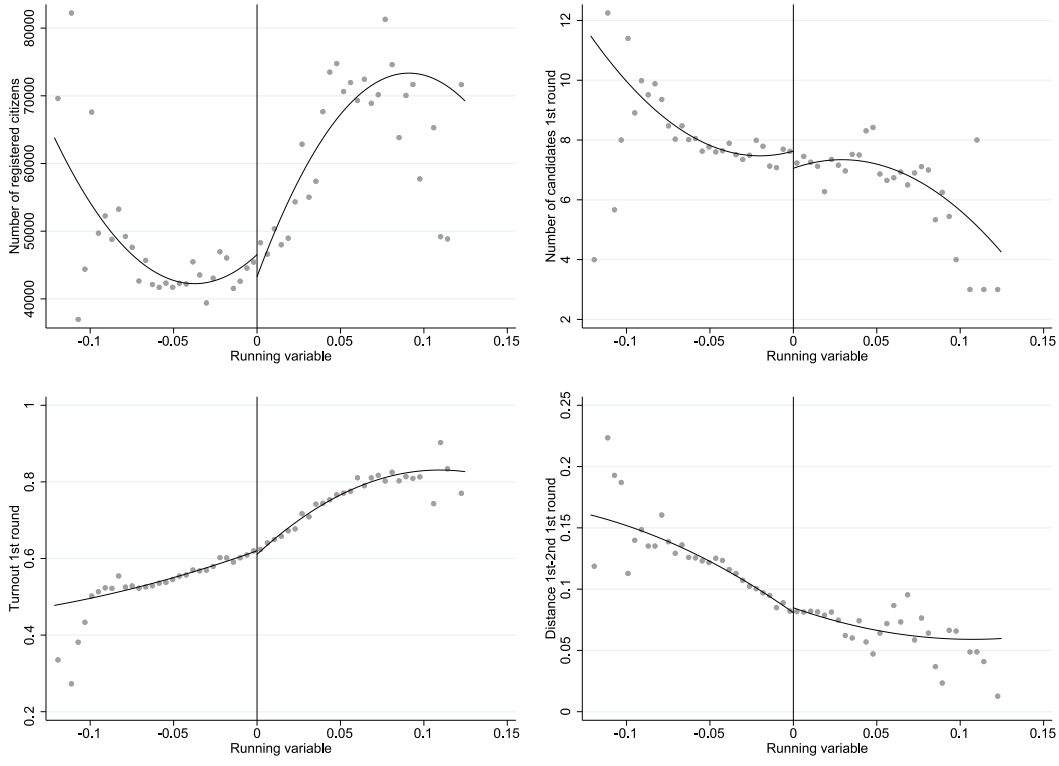

FIGURE B1.—Placebo tests on baseline variables. *Notes*: Dots represent the local averages of the baseline variable (*y*-axis). Averages are calculated within 0.4 percentage-point-wide bins of the running variable (*x*-axis). The running variable (qualifying margin of the third-highest-ranking candidate in the first round) is measured as percentage points. Continuous lines are a quadratic fit.

As shown in Figure B1, there is no significant jump at the cutoff for any of these variables. The formal estimation confirms the absence of treatment effect. Columns (1) through (4) of Table B-I present the results obtained for these four outcomes under our preferred specification. None of the estimates is statistically significant at the standard levels. Hence, we cannot reject the null hypothesis that the treatment has no effect on these baseline variables.

In addition, we conduct the following general test for imbalance. We regress the assignment variable D on a set of first-round variables including the four aforementioned variables as well as share of candidate votes, vote share of each of the top three candidates, political label and orientation of the three candidates, number of candidates from the left, right, far-right, far-left, and center, number of candidates of a non-classified orientation, dummies if there is at least one candidate from the far-left, left, center, right, and far-right, and a dummy equal to 1 if the third candidate has the same orientation as one of the top two candidates. We then use the coefficients from this regression to predict assignment status, and test whether the predicted value jumps at the threshold. As shown in Figure B2, the assignment status predicted by baseline variables increases continuously as a function of the running variable and does not show any discontinuity at the threshold. This suggests that there is no systematic discontinuity in the preexisting observable districts' characteristics at the threshold. The formal estimate in column (5) of Table B-I confirms this result: the coefficient is small (1.5 percentage points) and non-significant.

TABLE B-I

PLACEBO TESTS[a]

Outcome	Nb Reg. Citizens (1)	Nb Cand. 1st Round (2)	Turnout 1st Round (3)	Dist. 1–2 1st Round (4)	Predicted Assignment (5)
3rd present	5,601	−0.14	0.003	0.003	0.015
	(5,639)	(0.64)	(0.015)	(0.011)	(0.017)
Robust *p*-value	0.246	0.902	0.705	0.852	0.607
Observations	1,879	2,428	2,189	2,018	1,930
Polynomial order	1	1	1	1	1
Bandwidth	0.021	0.026	0.024	0.022	0.021
Band. method	MSERD	MSERD	MSERD	MSERD	MSERD
Mean, left of the threshold	43,982	7.55	0.604	0.092	0.301

[a]Standard errors are in parentheses. Statistical significance is computed based on the robust *p*-value and ***, **, and * indicate significance at 1, 5, and 10%, respectively. Each column reports the results from a separate local polynomial regression. The variable of interest (the presence of a third candidate in the second round) is instrumented by the assignment variable (whether the vote share of the third-highest-ranking candidate was higher than the cutoff). Separate polynomials are fitted on each side of the threshold. The polynomial order is 1, and the optimal bandwidths are derived under the MSERD procedure.

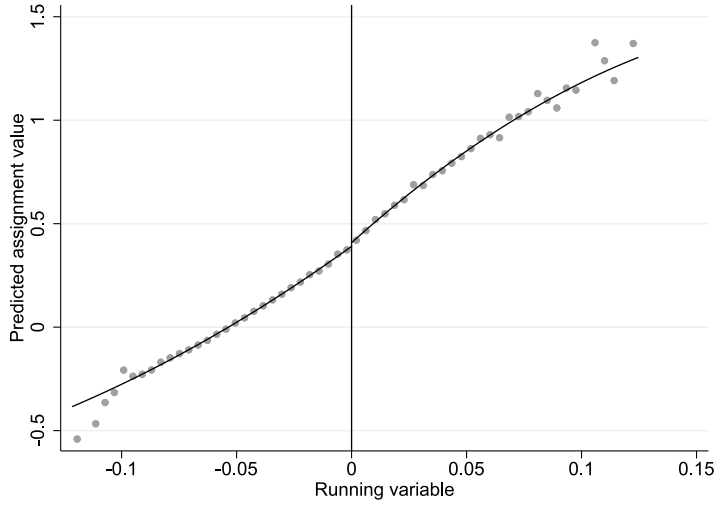

FIGURE B2.—General balance test. *Notes*: Dots represent the local averages of the predicted assignment status (*y*-axis). Other notes as in Figure B1.

APPENDIX C: ROBUSTNESS OF THE RESULTS TO TWO SPECIAL CASES

See the additional Supplement, included in the replication material.

APPENDIX D: CAMPAIGN EXPENDITURES

In French local and parliamentary elections, candidates who receive at least 1 percent of candidate votes in the first round must submit their campaign accounts to the French National Commission on Campaign Accounts and Political Financing (CNCCFP). The CNCCFP then examines the accounts, checks whether candidates respected the maximal amount they were authorized to spend in their district, and assesses whether they are eligible to be reimbursed by the French State.

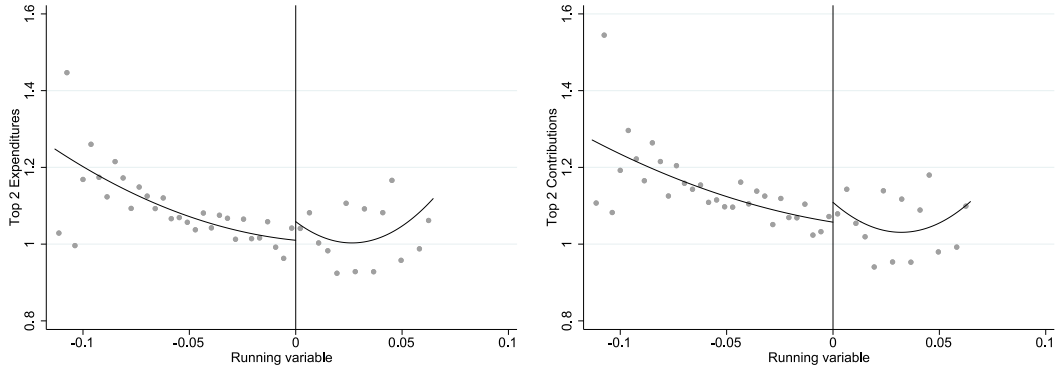

FIGURE D1.—Campaign expenditures of the top two candidates. *Notes*: One outlier has been removed to make the graph clearer (the district "Saint-Pierre-et-Miquelon" in the 1997 parliamentary elections). Dots represent the local averages of the outcome variable (y-axis). Averages are calculated within 0.4 percentage-point-wide bins of the running variable (x-axis). Each outcome uses the number of registered voters as the denominator. The running variable (qualifying margin of the third-highest-ranking candidate in the first round) is measured as percentage points. Continuous lines are a quadratic fit.

Data on campaign expenditures are made publicly available by the CNCCFP. The CNCCFP was created in 1990. Hence, data for elections held before 1990 are not available. Official accounts for the most recent elections—2011 and 2015 local elections, as well as 2007 and 2012 parliamentary elections—are available online on the CNCCFP website (http://www.cnccfp.fr/index.php?art=584). Official accounts for the 1993, 1997, and 2002 parliamentary elections were digitized from printed booklets by Abel François and his co-authors for their studies on the impact of electoral expenditures on turnout (Fauvelle-Aymar and François (2005)) and electoral results (Foucault and François (2005)). In total, we were able to gather data corresponding to 77.8 percent of our sample.[1]

For each election, district, and candidate, we observe the total amount spent by the candidate (summing up expenditures incurred before the first round and between the first and second rounds), the total amount of contributions she received, and the amount of each type of contribution (contributions received from the candidate's political party, personal funds, donations, natural advantages, and other sources), as well as the decision of the CNCCFP to accept, modify, or reject the account.

These data enable us to test whether the top two candidates increase their campaign expenditures in response to the presence of the third candidate. As we can see in Figure D1, the presence of the third candidate does not significantly affect the campaign expenditures of the top two candidates, or the contributions they receive to finance their campaign. Table D-I provides the formal estimates. Neither the effect on top two candidates' total expenditures nor the estimate on total contributions is statistically significant. The estimate on contributions received from candidates' political parties is significant at the 10 percent level, and positive. Nevertheless, the estimate on total contributions is

[1]Note that for the 2011 local elections, data are only available for districts exceeding 9,000 inhabitants. As a result, we observe the campaign expenditures for 74.4 percent of that election's races. In addition, for the 1993 parliamentary elections, data for two French territories overseas are missing. Finally, data are missing for candidates who received less than 1 percent of the candidate votes in the first round (in which case they do not need to release their accounts publicly), or because they did not release their campaign account on time (this happened in 1 case for the first candidate, 8 cases for the second candidate, and 34 cases for the third candidate).

TABLE D-I

CAMPAIGN EXPENDITURES OF THE TOP TWO CANDIDATES[a]

	Top Two Candidates							
Outcome	Total Expenditures (1)	Total Contrib. (2)	Personal Contrib. (3)	Party's Contrib. (4)	Natural Advantages (5)	Donations (6)	Other Contrib. (7)	Balance (8)
3rd present	0.013	−0.024	−0.078	0.080*	0.003	0.003	−0.006	−0.010
	(0.079)	(0.092)	(0.068)	(0.039)	(0.012)	(0.061)	(0.020)	(0.021)
Robust *p*-value	0.885	0.577	0.224	0.061	0.803	0.816	0.937	0.512
Observations	890	786	800	1,236	1,437	954	1,216	774
Polyn. order	1	1	1	1	1	1	1	1
Bandwidth	0.013	0.012	0.012	0.018	0.023	0.014	0.018	0.011
Band. method	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD
Mean	1.017	1.045	0.688	0.113	0.037	0.198	0.022	0.044

[a]Standard errors are in parentheses. Statistical significance is computed based on the robust *p*-value and ***, **, and * indicate significance at 1, 5, and 10%, respectively. Each column reports the results from a separate local polynomial regression. Each outcome uses the number of registered voters as the denominator. The outcome "Other Contributions" (column (7)) sums all the contributions received by the candidates that are not personal contributions, party contributions, natural advantages, or donations. In the 1993 parliamentary elections, natural advantages were not counted separately, and they are included in the other contributions. The variable of interest (the presence of a third candidate in the second round) is instrumented by the assignment variable (whether the vote share of the third-highest-ranking candidate was higher than the cutoff). Separate polynomials are fitted on each side of the threshold. The polynomial order is 1, and the optimal bandwidths are derived under the MSERD procedure.

small, not significant, and actually negative: the top two candidates do not receive significantly more money overall when the third candidate is present.

We now turn to the impact of the presence of the third candidate on her own overall campaign expenditures (which again sum up expenditures incurred before the first round and between the first and second rounds). We do not find any significant impact on the third candidate's total expenditures or on the total contributions she received (Figure D2 and Table D-II). When we disentangle between the different sources of contributions, only two coefficients out of six are significant at the 10 percent level, and one is negative.

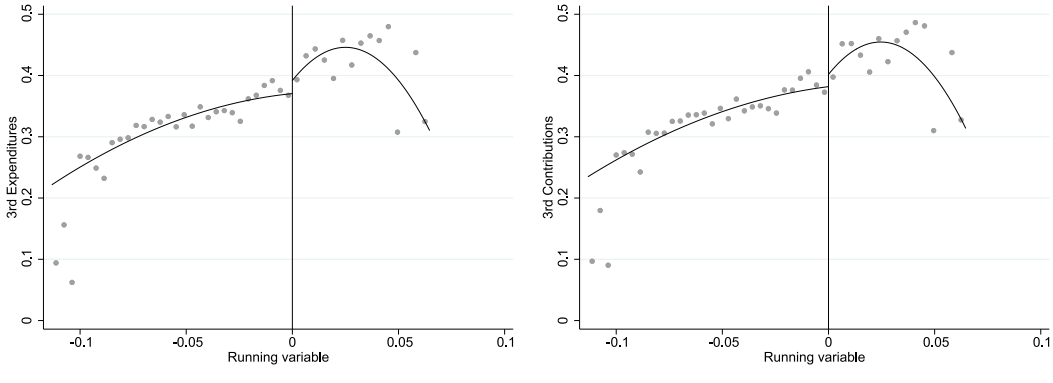

FIGURE D2.—Campaign expenditures of the third candidate. Notes as in Figure D1.

TABLE D-II

CAMPAIGN EXPENDITURES OF THE THIRD CANDIDATE[a]

	Third Candidate							
Outcome	Total Expenditures (1)	Total Contrib. (2)	Personal Contrib. (3)	Party's Contrib. (4)	Natural Advantages (5)	Donations (6)	Other Contrib. (7)	Balance (8)
3rd present	0.035	0.038	0.054*	−0.031*	−0.000	−0.004	0.000	−0.000
	(0.037)	(0.040)	(0.035)	(0.018)	(0.007)	(0.024)	(0.005)	(0.011)
Robust p-value	0.441	0.429	0.090	0.074	0.939	0.679	0.961	0.958
Observations	929	842	831	679	1,034	679	901	701
Polyn. order	1	1	1	1	1	1	1	1
Bandwidth	0.014	0.013	0.012	0.010	0.017	0.010	0.013	0.010
Band. method	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD	MSERD
Mean	0.382	0.397	0.307	0.023	0.015	0.043	0.005	0.010

[a]Notes as in Table D-I.

APPENDIX E: IMPACT ON THE TOP TWO CANDIDATES DEPENDING ON THE CLOSENESS OF THE RACE

We estimate the impact of the presence of the third candidate on the vote share of the top two candidates depending on the closeness of the race in the first round. In Table E-I, closeness is defined as the difference in vote shares (as a fraction of candidate votes) between the first and second candidates. In Table E-II, closeness is defined as the difference in strengths between the first and second candidates, where a candidate's strength is equal to the sum of first-round vote shares (as a fraction of candidate votes) of all candidates from the same orientation (see Section 4.4).

As defined in Section 4.4, sample 1 includes all elections in which the top three candidates have distinct political orientations and the third candidate is either on the left or the

TABLE E-I

IMPACT ON THE TOP TWO CANDIDATES DEPENDING ON THE CLOSENESS OF THE RACE (DEFINED IN TERMS OF VOTE SHARES)[a]

	(1)	(2)	(3)	(4)
Impact 3rd present	Top 2 cand. 2nd round	*Bandwidth/ Observations*	Closest candidate 2nd round	Furthest candidate 2nd round
Sample 1	−0.082***	*0.014*	−0.061***	−0.027**
	(0.017)	*546*	(0.008)	(0.013)
Sample 1 + distance12 ≤ 10 pp	−0.080***	*0.012*	−0.056***	−0.031*
	(0.021)	*345*	(0.009)	(0.015)
Sample 1 + distance12 ≤ 5 pp	−0.077**	*0.014*	−0.057***	−0.024
	(0.025)	*228*	(0.010)	(0.017)

[a]The distance between the top two candidates is defined as the difference in vote shares (as a fraction of candidate votes) between the first and second candidates. Column 2 gives the bandwidths used for the estimation of the impact on the vote share of the top two candidates as well as the number of observations lying in those bandwidths. Standard errors are in parentheses. Statistical significance is computed based on the robust p-value and ***, **, and * indicate significance at 1, 5, and 10%, respectively. Each column reports the results from a separate local polynomial regression. Each outcome uses the number of registered voters as the denominator. The variable of interest (the presence of a third candidate in the second round) is instrumented by the assignment variable (whether the vote share of the third-highest-ranking candidate was higher than the cutoff). Separate polynomials are fitted on each side of the threshold. The polynomial order is 1, and the optimal bandwidths are derived under the MSERD procedure.

TABLE E-II

IMPACT ON THE TOP TWO CANDIDATES DEPENDING ON THE CLOSENESS OF THE RACE (DEFINED IN TERMS OF STRENGTHS)[a]

	(1)	(2)	(3)	(4)
Impact 3rd present	Top 2 cand. 2nd round	*Bandwidth/ Observations*	Closest candidate 2nd round	Furthest candidate 2nd round
Sample 1	−0.082***	*0.014*	−0.061***	−0.027**
	(0.017)	*546*	(0.008)	(0.013)
Sample 1 + distance12 ≤ 10 pp	−0.094***	*0.019*	−0.059***	−0.034**
	(0.020)	*423*	(0.010)	(0.013)
Sample 1 + distance12 ≤ 5 pp	−0.104***	*0.015*	−0.064***	−0.036
	(0.034)	*189*	(0.012)	(0.024)

[a]The distance between the top two candidates is defined as the difference in strengths between the first and second candidates. Other notes as in Table E-I.

right of both top two candidates, so that the candidate ideologically closest to the third is clearly identified. We then consider two subsamples: one in which the distance between the top two candidates in the first round is smaller than 10 percentage points and one in which the distance is smaller than 5 percentage points. In those subsamples, the gap in vote shares (resp. strengths) between the first and second candidates is, on average, equal to 4.3 and 2.3 (resp. 4.7 and 2.5) percentage points, respectively, close to the discontinuity.

As shown in Tables E-I and E-II, whatever the definition of closeness we use, the effect of switchers' behavior on the vote share of the top two candidates is robust across the three samples and strikingly close in magnitude. In Table E-I, all estimates are significant at the 1 or 5 percent level and included between 7.7 and 8.2 percentage points (column 1). In Table E-II, all estimates are significant at the 1 percent level and included between 8.2 and 10.4 percentage points (column 1).

These results suggest that switchers are equally willing to vote for the third candidate and thus decrease the vote share of the top-two candidate they prefer when the race is close in the first round.

Our results are robust to considering sample 2 as defined in Section 4.4 instead of sample 1.

APPENDIX F: IMPACT ON THE TOP TWO CANDIDATES DEPENDING ON VOTERS' LEVEL OF INFORMATION

See the additional Supplement, included in the replication material.

APPENDIX G: THIRD CANDIDATE DROPOUTS—RDD ANALYSIS

In this section, we use our regression discontinuity design framework to provide additional evidence on third candidates' dropout decision. In the graphs and tables below, the outcome is a dummy equal to 1 if the third candidate drops out of the race in the second round. By definition, it always takes value 0 at the left of the threshold.

The first graph in Figure G1 plots the probability to drop out against the running variable in the whole sample. Note that it is the exact mirror of the first-stage figure shown in Section 3.2. We then differentiate elections where the third candidate has the same political orientation as one of the top two candidates from elections where she does not. Table G-I provides the formal estimates: on average, the third candidate is much more

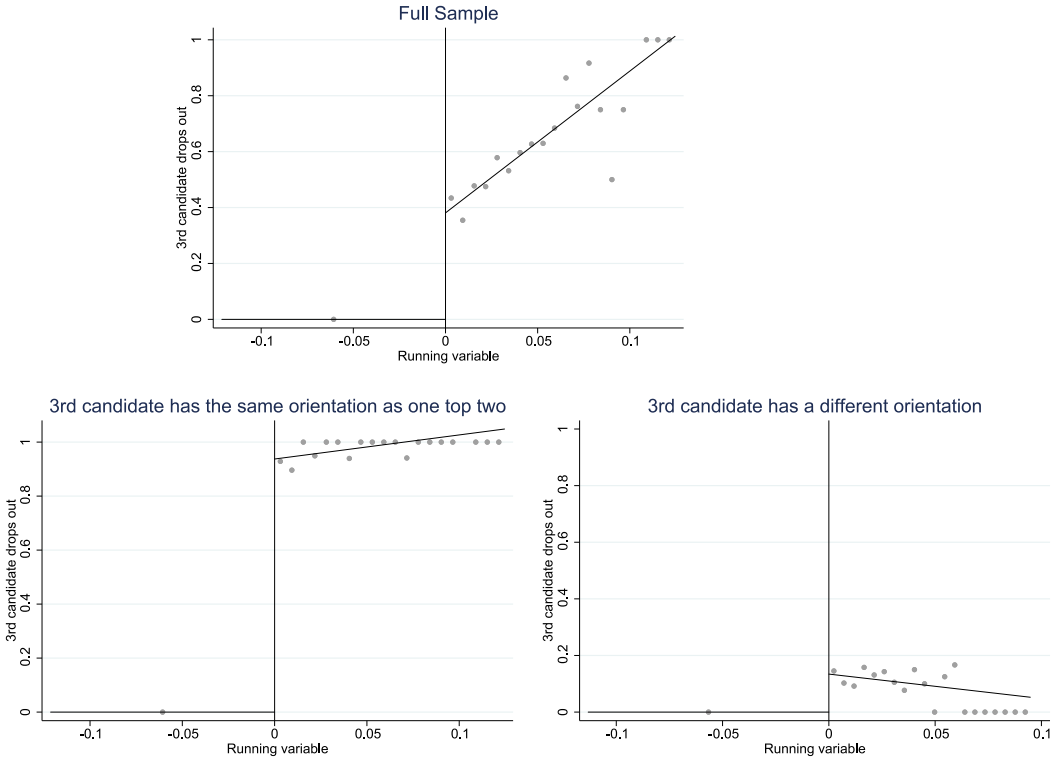

FIGURE G1.—Probability that the third candidate drops out depending on her political orientation. *Notes*: The outcome is a dummy equal to 1 if the third candidate drops out of the race in the second round. Averages are calculated within bins of the running variable (x-axis). The running variable (the qualifying margin of the third-highest-ranking candidate in the first round) is measured as percentage points. Continuous lines are a linear fit.

TABLE G-I

PROBABILITY THAT THE THIRD CANDIDATE DROPS OUT DEPENDING ON HER POLITICAL ORIENTATION[a]

	3rd Candidate Drops Out		
Outcome	Full Sample (1)	3rd Same Orientation (2)	3rd Different Orientation (3)
3rd qualifies	0.448***	0.911***	0.148***
	(0.042)	(0.026)	(0.035)
Robust p-value	0.000	0.000	0.000
Observations	1,541	1,027	1,169
Polyn. order	1	1	1
Bandwidth	0.017	0.036	0.019
Band. method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.00	0.00	0.00

[a]Column (1) includes all elections. Column (2) includes only the elections where the third candidate has the same political orientation as one of the top two candidates. Column (3) includes only the elections where the third candidate has a different orientation than both top two candidates. Standard errors are in parentheses. Statistical significance is computed based on the robust p-value and ***, **, and * indicate significance at 1, 5, and 10%, respectively. Each column reports the results from a separate local polynomial regression. The outcome is a dummy equal to 1 if the third candidate drops out of the race in the second round. The dependent variable is a dummy equal to 1 if the third candidate is qualified. Separate polynomials are fitted on each side of the threshold. The polynomial order is 1, and the optimal bandwidths are derived under the MSERD procedure.

TABLE G-II

PROBABILITY THAT THE THIRD CANDIDATE DROPS OUT DEPENDING ON THE CLOSENESS OF THE RACE, WHEN SHE HAS THE SAME ORIENTATION AS ONE TOP-TWO[a]

	3rd Candidate Drops Out—Same Orientation				
	Closest Identified	Distance12 ≤10%	(Vote Share) ≤5%	Distance12 ≤10%	(Strength) ≤5%
Outcome	(1)	(2)	(3)	(4)	(5)
3rd qualifies	0.914***	0.866***	0.880***	1.004***	1.012***
	(0.025)	(0.041)	(0.051)	(0.003)	(0.011)
Robust *p*-value	0.000	0.000	0.000	0.000	0.000
Observations	966	671	402	384	185
Polyn. order	1	1	1	1	1
Bandwidth	0.034	0.043	0.045	0.040	0.040
Band. method	MSERD	MSERD	MSERD	MSERD	MSERD
Mean, left of the threshold	0.00	0.00	0.00	0.00	0.00

[a]Column (1) includes all elections where the third candidate has the same political orientation as one of the top two candidates and where the closest candidate is clearly identified (we exclude the elections where the three candidates have the same orientation and elections where one of the top two candidates has a non-classified orientation). Columns (2) and (3) include only elections where the difference in vote shares between the first and second candidates in the first round is lower than 10 and 5 percentage points, respectively. Columns (4) and (5) include only elections where the difference in strengths between the first and the second candidates is lower than 10 and 5 percentage points, respectively. In column (5), due to the small sample size, the command rdrobust could not compute the optimal bandwidth, and we used the same bandwidth as in column (4). Other notes as in Table G-I.

likely to drop out when she has the same political orientation as one of the top two candidates (91.1 percent close to the threshold) than when she has a different orientation than both of them (14.8 percent close to the threshold).

We now assess whether the likelihood to drop out depends on first-round results, focusing on elections where the candidate ideologically closest to the third is clearly identified: in the sample where the third candidate has the same orientation as one of the top two, we exclude the elections where the three candidates have the same orientation and elections where one of the top two candidates is from a non-classified orientation. In the sample where the third candidate has a different orientation than both top two, we only include the elections of sample 1 as defined in Section 4.4.

We first test whether the decision to drop out depends on the closeness of the race. As in Appendix E, we test for two definitions of closeness: difference between the vote shares of the first and second candidates in the first round and difference between their strengths. Both measures use the fraction of candidate votes as the denominator. When the third candidate has the same orientation as one of the top two, her probability to drop out does not vary when the vote shares of the top two candidates are close, but she does drop out more often when the difference between their strengths is small: the third candidate always drops out of the race when the gap is smaller than 10 or 5 percentage points (Table G-II). When the third candidate has a different orientation, neither the gap in vote shares nor in strengths between the top two affects her decision to drop out: estimates across the four subsamples are comprised between 10.4 and 11.6 percentage points (Table G-III, columns (2) to (5)), compared with 13.2 for all elections of sample 1 (Table G-III, column (1)).

Finally, we test whether the probability that the third candidate drops out is affected by her distance with the top two candidates.

As shown in Table G-IV, when the third candidate has the same orientation as one of the top two, she is even more likely to drop out when she lags far behind the candidate

TABLE G-III

PROBABILITY THAT THE THIRD CANDIDATE DROPS OUT DEPENDING ON THE CLOSENESS OF THE RACE, WHEN SHE HAS A DIFFERENT ORIENTATION THAN BOTH TOP TWO[a]

	3rd Candidate Drops Out—Different Orientation				
		Distance12	(Vote Share)	Distance12	(Strength)
	Sample 1	≤10%	≤5%	≤10%	≤5%
Outcome	(1)	(2)	(3)	(4)	(5)
3rd qualifies	0.132***	0.116**	0.106**	0.104**	0.104
	(0.040)	(0.051)	(0.058)	(0.044)	(0.082)
Robust *p*-value	0.002	0.023	0.047	0.041	0.220
Observations	518	345	215	388	196
Polyn. order	1	1	1	1	1
Bandwidth	0.013	0.012	0.013	0.018	0.016
Band. method	MSERD	MSERD	MSERD	MSERD	MSERD
Mean, left of the threshold	0.00	0.00	0.00	0.00	0.00

[a]Column (1) includes only the elections of sample 1: all elections where the three candidates have distinct political orientations and the third candidate is either on the left or on the right of the two other candidates, making one of them the candidate ideologically closest to the third. Columns (2) and (3) include only elections where the difference in vote shares between the first and second candidates in the first round is lower than 10 and 5 percentage points, respectively. Columns (4) and (5) include only elections where the difference in strengths between the first and the second candidates is lower than 10 and 5 percentage points, respectively. Other notes as in Table G-I.

ranked second in the first round: she drops out of the race in 95.8 percent of the cases when the gap between their vote shares is larger than 5 percentage points (column (2)) and in all elections when it is larger than 10 percentage points (column (3)). Instead, when the third candidate has a different orientation, her probability to drop out is not higher when she has very low chances of becoming a front-runner in the second round: she drops out in 11.7 percent (resp. 10.6 percent) of the cases when the gap between her strength and the strength of each of the top two candidates is larger than 5 (resp. 10) percentage points, compared with 13.2 for all elections of sample 1 (Table G-V).

TABLE G-IV

PROBABILITY THAT THE THIRD CANDIDATE DROPS OUT DEPENDING ON HER DISTANCE WITH THE TOP TWO CANDIDATES, WHEN SHE HAS THE SAME ORIENTATION AS ONE TOP-TWO[a]

	3rd Candidate Drops Out—Same Orientation		
	Closest Identified	Distance Top Two ≥ 5 pp	Distance Top Two ≥ 10 pp
Outcome	(1)	(2)	(3)
3rd qualifies	0.914***	0.958***	1.000
	(0.025)	(0.033)	(0.000)
Robust *p*-value	0.000	0.000	–
Observations	966	460	241
Polyn. order	1	1	1
Bandwidth	0.034	0.029	0.029
Band. method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.00	0.00	0.00

[a]Column (2) (resp. (3)) further restricts the sample to elections where the third candidate's vote share in the first round is lower than the vote share of the second candidate by at least 5 percentage points (resp. 10 percentage points). In column (3), due to the small sample size, the command rdrobust could not compute the optimal bandwidth, and we used the same bandwidth as in column (2). Other notes as in Table G-II.

TABLE G-V

PROBABILITY THAT THE THIRD CANDIDATE DROPS OUT DEPENDING ON HER DISTANCE WITH THE TOP TWO CANDIDATES, WHEN SHE HAS A DIFFERENT ORIENTATION THAN BOTH TOP TWO[a]

	3rd Candidate Drops Out—Different Orientation		
Outcome	Sample 1 (1)	Distance Top Two ≥ 5 pp (2)	Distance Top Two ≥ 10 pp (3)
3rd qualifies	0.132***	0.117**	0.106
	(0.040)	(0.053)	(0.089)
Robust *p*-value	0.002	0.045	0.503
Observations	518	433	102
Polyn. order	1	1	1
Bandwidth	0.013	0.018	0.007
Band. method	MSERD	MSERD	MSERD
Mean, left of the threshold	0.00	0.00	0.00

[a]Column (2) (resp. (3)) further restricts the sample to elections where the third candidate's strength is lower than that of each of the top two candidates by at least 5 percentage points (resp. 10 percentage points). Other notes as in Table G-III.

APPENDIX H: THIRD CANDIDATE DROPOUTS—DESCRIPTIVE EVIDENCE FROM PRESS ARTICLES

Using Factiva's research tool (https://www.dowjones.com/products/factiva), we collected all press articles released between the two rounds of all elections in our sample and containing the entity "désist." This entity is present in all forms of the verb "se désister" (to drop out) and in the noun "désistement" (dropout). We obtained a total of 1,678 articles published in 86 different newspapers in election years 1997, 2002, 2007, 2011, 2012, and 2015. Table H-I gives the breakdown of the articles collected by election type and year.

We read each article and kept only the articles providing information on third candidates' decision to drop out. We discarded articles covering elections where the third candidate eventually stayed in the race, articles covering second candidates' dropouts, articles reporting a dropout without giving any information on it, and articles commenting dropouts that occurred in past elections.

TABLE H-I

PRESS ARTICLES COLLECTED BY ELECTION TYPE AND YEAR

	Year	Number of Articles
Parliamentary elections	1997	11
	2002	26
	2007	240
	2012	631
	Total	908
Local elections	2011	263
	2015	507
	Total	770
Total		1,678

TABLE H-II

DESCRIPTIVE STATISTICS

	Number of Instances	Percentage
Level		
National	92	15.6
Département	51	8.6
District	447	75.8
Total	590	100
Configuration		
Same orientation	233	39.5
Different orientation	317	53.7
Unspecified	40	6.8
Total	590	100

We are left with a total of 590 instances of third candidates dropping out. Note that an instance may be covered by several articles and that one article may cover several instances.

As shown in Table H-II, for each instance, we first coded whether the article discusses dropouts at the national level (15.6 percent of the cases), or instead focuses on a particular département (8.6 percent of the cases) or a particular district (75.8 percent of the cases). Next, we classified each instance depending on whether the third candidate has the same orientation as one of the top two candidates (39.5 percent of the cases) or a different one (53.7 percent of the cases).[2] Dropouts from candidates who have a different orientation than both top two are over-covered by the press, as they represent less than 15 percent of all dropouts in our sample but more than 50 percent of the instances covered by the press.

Next, for each instance, we coded the context in which the dropout took place (decision made by the party, existence of an agreement among parties, or decision made individually by the candidate), the reasons provided by the party or candidate (preventing the victory of another candidate, or feeling ideologically close to a top-two), and whether the article mentions the reactions of the candidate's party, voters, or competing candidates. Table H-III gives the statistics for the whole sample and separately for instances where the third candidate has the same orientation as one top-two or a different one. Note that the 40 instances for which the configuration is unspecified are included in the whole sample (first line in the tables below) but not in the breakdown by political orientations (second and third lines in the tables).

[2]Forty instances are left unclassified (6.8 percent). In these cases, the dropout decision was made by the party at the national or département level without stating the exact configuration in which the third candidate was required to drop out, making it impossible to know whether it led to dropouts in elections where the third had the same orientation as one top-two or not. For instance, some articles report that left parties asked their candidates to drop out if ranked third and if a far-right candidate was among the top two, but without giving any information on the orientation of the other top-two candidate.

TABLE H-III

STATISTICS ON THE DROPOUTS' CONTEXT, REASONS, AND REACTIONS

	A. Context[a]			
	Presence (1)	Party's Decision (2)	Agreement (3)	Candidate's Decision (4)
All	47.8	29.8	15.4	18.0
Same orientation	44.2	41.6	33.9	2.6
Different orientation	44.2	12.9	3.8	31.2

	B. Reasons[b]			
	Presence (1)	Prevent Victory (2)	Ideological Proximity (3)	Other Reasons (4)
All	59.0	51.7	6.3	5.8
Same orientation	44.2	29.2	15.9	7.7
Different orientation	65.6	63.1	0.0	4.7

	C. Reactions[c]				
	Presence (1)	Exclusion (2)	Voters Critics (3)	Furthest Cand Critics (4)	Other Reactions (5)
All	10.7	5.1	0.5	4.1	5.4
Same orientation	2.2	0.0	0.4	0.9	1.7
Different orientation	18.3	9.5	0.6	6.9	8.8

[a]Column (1) gives the percentage of instances for which the article provides information on the context in which the dropout took place. Column (2) gives the percentage of dropouts decided by the party, and column (3) gives the percentage of dropouts that are part of an agreement among parties. All dropouts part of an agreement are also considered as dropouts decided by the party. Column (4) gives the percentage of dropouts decided individually by the candidate, independently from any party's instructions.

[b]Column (1) gives the percentage of instances for which the article reports at least one reason provided by the candidate or party to justify the decision to drop out. Column (2) (resp. (3)) gives the percentage of instances where the article reports that the candidate dropped out to prevent the victory of another candidate (resp. because the candidate or party felt ideologically close to a top-two). Column (4) gives the percentage of instances where the article reports another reason. It includes all reasons that concern less than 5 percent of the instances each.

[c]Column (1) gives the percentage of instances for which the article reports at least one reaction following the dropout. Column (2) gives the percentage of cases where the party decided to exclude the candidate because she dropped out against the party's instructions. Column (3) (resp. (4)) gives the percentage of cases where voters (resp. the furthest candidate among the top two) criticized the dropout decision. Column (5) gives the percentage of instances where the article reports another reaction. It includes all other reactions that concern less than 5 percent of the instances each, except voters' critics, as we discuss this statistic in the main text (see Section 5.2).

APPENDIX I: POLITICAL ORIENTATIONS

See the additional Supplement, included in the replication material.

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Co-editor Liran Einav handled this manuscript.

Manuscript received 26 May, 2017; final version accepted 15 May, 2018; available online 21 May, 2018.