When Does Regression Discontinuity Design Work? Evidence from Random Election Outcomes

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ONLINE APPENDICES

(Supplementary material for online publication only)

We report here the additional empirical analyses to which the main text refers. The supplement consists of Appendices A–F. Appendix A reports summary statistics for our data. In Appendix B, we describe a number of empirical results for the lottery sample. Appendix C characterizes graphically the forcing variable used in the regression discontinuity design (RDD). In Appendix D, we evaluate the validity of the RDD. A large battery of robustness checks is reported in Appendix F. Appendix E reports covariate balance tests for various RDD samples, determined by different bandwidth choices, as well as a brief evaluation of the local randomization assumption.

Appendix A: Supplementary information to Section 2.2 (Data)

In this appendix, we report summary statistics for our data.

Table A1: This table reports descriptive statistics for the individual candidates. As the table shows, the variables that can be regarded as (rough) measures of candidate quality: Many of them obtain, on average, higher values for the elected candidates. For example, the elected candidates have higher income, are more often university-educated and are less often unemployed. The difference is particularly striking when we look at incumbency status: 58% of the elected candidates were incumbents, whereas only 6% of those who were not elected were incumbents.

Table A1. Descriptive statistics for individual candidates.

	All data (N = 198118)			Elected (N = 56734)			Not elected (N = 141384)		
Variable	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Elected next election (only re-runners)	82946	0.38	0.48	32070	0.79	0.41	50876	0.12	0.32
Elected next election (all candidates)	160727	0.19	0.40	46982	0.54	0.50	113745	0.05	0.22
Running next election	160727	0.52	0.50	46982	0.68	0.47	113745	0.45	0.50
Number of votes next election	82946	76	180	32070	131	268	50876	41	65
Vote share next election	82946	1.14	1.31	32070	2.05	1.54	50876	0.57	0.68
Vote share	198117	0.97	1.20	56734	2.22	1.50	141383	0.46	0.47
Number of votes	198117	61	149	56734	127	257	141383	34	45
Female	198118	0.39	0.49	56734	0.35	0.48	141384	0.40	0.49
Age	198117	46.75	12.64	56734	48.15	11.15	141383	46.18	13.15
Incumbent	198118	0.21	0.41	56734	0.58	0.49	141384	0.06	0.24
Municipal employee	160993	0.23	0.42	47060	0.27	0.44	113933	0.22	0.41
Wage income	117787	23738	26978	34566	27813	41548	83221	22045	17417
Capital income	117787	2650	35446	34566	4775	61116	83221	1767	14973
High professional	198022	0.19	0.40	56721	0.24	0.43	141301	0.18	0.38
Entrepreneur	198022	0.15	0.36	56721	0.23	0.42	141301	0.12	0.33
Student	198022	0.04	0.20	56721	0.02	0.13	141301	0.05	0.22
Unemployed	198022	0.07	0.25	56721	0.03	0.18	141301	0.08	0.27
University degree	159437	0.16	0.37	46711	0.20	0.40	112726	0.14	0.35
Coalition Party	198118	0.15	0.36	56734	0.15	0.35	141384	0.16	0.36
Social Democrats	198118	0.18	0.38	56734	0.18	0.38	141384	0.18	0.38
Center Party	198118	0.22	0.42	56734	0.30	0.46	141384	0.19	0.40
True Finns	198118	0.02	0.15	56734	0.01	0.12	141384	0.03	0.16
Green Party	198118	0.04	0.19	56734	0.02	0.15	141384	0.04	0.20
Socialist Party	198118	0.09	0.29	56734	0.07	0.26	141384	0.10	0.30
Swedish Party	198118	0.03	0.17	56734	0.04	0.20	141384	0.02	0.16
Christian Party	198118	0.04	0.18	56734	0.03	0.16	141384	0.04	0.19
Other parties	198118	0.23	0.42	56734	0.20	0.40	141384	0.24	0.43

Notes: Income data are not available for 2012 elections, and in 1996 elections they are available only for candidates who run also in 2000, 2004 and 2008 elections. Income is expressed in euros. Municipal employee status is not available for 2012 elections.

Table A2: This table reports descriptive statistics for municipalities, measured using the candidate level data. As can be seen (the panel on the left), there are three major parties in Finland. The three largest parties' seat shares total to over 70%. There are two main reasons why there are differences in the variables related to elections between the elected candidates' municipalities (the panel in the middle) and the not-elected candidate's municipalities (the panel on the right). First, a larger share of all running candidates is elected in smaller municipalities. For example, the Center Party has a larger vote share in smaller municipalities. Second, there are more candidates in the larger municipalities. The table also shows that in a number of dimensions, like income, age and unemployment rate, there are no major differences in the municipal characteristics between elected and non-elected candidates.

Table A2. Descriptive statistics for municipalities.

Municipality characteristics

	All data (N = 198118)			Elected (N = 56734)			Not elected (N = 141384)		
Variable	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Total number of votes	198118	19935	43682	56734	10607	26431	141384	23677	48421
Coalition Party seat share	198118	19.58	10.10	56734	17.61	10.52	141384	20.38	9.81
Social Democrats seat share	198118	21.88	10.21	56734	20.62	10.88	141384	22.38	9.88
Center Party seat share	198118	30.58	20.52	56734	35.20	21.14	141384	28.73	19.97
True Finns seat share	198118	3.77	5.87	56734	3.49	5.87	141384	3.88	5.86
Green Party seat share	198118	4.25	5.41	56734	2.89	4.30	141384	4.79	5.70
Socialist Party seat share	198118	8.57	7.37	56734	8.14	7.72	141384	8.74	7.22
Swedish Party seat share	198118	4.39	13.87	56734	5.19	16.80	141384	4.07	12.49
Christian Party seat share	198118	3.41	3.56	56734	3.24	3.79	141384	3.48	3.47
Other parties' seat share	198118	3.45	6.74	56734	3.50	7.56	141384	3.43	6.39
Voter turnout	196329	62.20	6.28	56174	63.40	6.28	140155	61.72	6.21
Population	197307	43407	95692	56581	22944	58177	140726	51634	106027
Share of 0-14-year-olds	196385	17.84	3.28	56331	17.96	3.47	140054	17.79	3.20
Share of 15-64-year-olds	196385	64.41	3.48	56331	63.49	3.27	140054	64.78	3.49
Share of over-65-year-olds	196385	17.75	4.82	56331	18.55	4.99	140054	17.43	4.72
Income per capita	196385	21204	5876	56331	20364	5634	140054	21543	5937
Unemployment	197307	13.50	5.71	56581	13.77	5.85	140726	13.39	5.65

Notes: Income per capita is expressed in euros.

Appendix B: Supplementary information to Section 3.1 (Experimental estimates)

In this appendix, we report a number of empirical results obtained using the lottery sample (i.e., the sample which only includes the candidates that had a tie). These results bear on the robustness of the experimental estimate.

Table B1: This table shows additional balance checks for party affiliation and municipality characteristics in the lottery sample. These characteristics should be balanced by construction, as we construct the forcing variable within party lists. The table shows that the samples are, indeed, almost identical. The small and insignificant differences in the means are likely due to the fact that in some lotteries there are more than two candidates.

Table B1. Additional balance checks.

Individual characteristics

Variable	Elected (N = 671)			Not elected (N = 680)			Difference
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Coalition Party	671	0.20	0.40	680	0.20	0.40	0.00
Social Democrats	671	0.18	0.39	680	0.18	0.39	0.00
Center Party	671	0.42	0.49	680	0.42	0.49	0.00
True Finns	671	0.02	0.13	680	0.02	0.13	0.00
Green Party	671	0.01	0.11	680	0.01	0.11	0.00
Socialist Party	671	0.08	0.27	680	0.08	0.27	0.00
Swedish Party	671	0.03	0.18	680	0.04	0.19	-0.01
Christian Party	671	0.02	0.15	680	0.02	0.15	0.00
Other parties	671	0.03	0.18	680	0.03	0.18	0.00

Municipality characteristics

Variable	Elected (N = 671)			Not elected (N = 680)			Difference
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Total number of votes	671	4467	12006	680	4395	11921	71
Coalition Party seat share	671	16.88	11.08	680	16.76	10.88	0.13
Social Democrats seat share	671	19.70	10.76	680	19.63	10.95	0.07
Center Party seat share	671	41.46	19.98	680	41.57	20.17	-0.11
True Finns seat share	671	1.92	4.79	680	1.89	4.59	0.02
Green Party seat share	671	1.72	3.29	680	1.73	3.31	-0.01
Socialist Party seat share	671	7.55	7.91	680	7.56	7.82	0.00
Swedish Party seat share	671	3.70	14.42	680	3.97	14.95	-0.27
Christian Party seat share	671	2.87	3.92	680	2.83	3.92	0.04
Other parties' seat share	671	3.76	8.59	680	3.63	8.48	0.13
Voter turnout	664	65.23	5.90	673	65.38	6.02	-0.15
Population	671	9316	25430	680	9145	25241	171
Share of 0-14-year-olds	667	18.31	3.31	676	18.42	3.33	-0.11
Share of 15-64-year-olds	667	62.97	2.87	676	62.89	2.90	0.07
Share of over-65-year-olds	667	18.72	4.69	676	18.69	4.68	0.03
Income per capita	667	18457	5372	676	18413	5372	44
Unemployment	671	14.85	6.75	680	14.80	6.69	0.05

Notes : Differences in means have been tested using t test adjusted for clustering at municipality level. Sample includes only candidates running in 1996-2008 elections. Income data are not available for 2012 elections, and in 1996 elections they are available only for candidates who run also in 2000, 2004 and 2008 elections. Income and income per capita are expressed in euros.

Table B2: This table reports experimental results for the alternative outcomes, vote share (Panel A) and running (Panel B) in the next elections. The regressions use the entire lottery sample. They provide no evidence of personal incumbency advantage. We have also checked that the effect is close to zero and not significant if the absolute number of votes in the next election is used as the outcome variable (not reported).

Table B2. Experimental results for alternative outcomes.

Panel A: Vote share next election				
	(1)	(2)	(3)	(4)
Elected	0.012	0.006	-0.020	-0.014
95% confidence interval	[-0.102, 0.125]	[-0.108, 0.121]	[-0.152, 0.111]	[-0.160, 0.133]
N	1351	1351	1351	1351
R^2	0.00	0.06	0.37	0.52
Panel B: Running next election				
	(5)	(6)	(7)	(8)
Elected	0.011	0.007	0.001	0.005
95% confidence interval	[-0.040, 0.062]	[-0.044, 0.058]	[-0.058, 0.059]	[-0.060, 0.071]
N	1351	1351	1351	1351
R^2	0.00	0.05	0.30	0.45
Controls	No	Yes	Yes	Yes
Municipality fixed effects	No	No	Yes	No
Municipality-year fixed ef	No	No	No	Yes

Notes : Only actual lotteries are included in the regressions. Vote share is set to zero for those candidates that do not run in the next election. Set of controls includes age, gender, party affiliation, socio-economic status and incumbency status of a candidate, and total number of votes. Some specifications include also municipality or municipality-year fixed effects.Confidence intervals are based on standard errors clustered at the municipality level. Unit of observation is a candidate *i* at year *t* .

Table B3: In this table, we look at elections in small and large municipalities separately. We split the sample based on the median number of total votes in the municipality in the lottery sample. This median is 2422. The median is slightly higher (2662) in the entire sample. The regressions reported in the table below do not include any controls. They should therefore be compared to the result in column (1) in Table 2 in the main text of HMSTT. As can be seen from the table, we do not find evidence for an incumbency advantage in either sub-sample.

Table B3. Experimental results for small and large elections.

Outcome: Elected next election

	(1)	(2)
Elected	0.002	0.006
95% confidence interval	[-0.064, 0.067]	[-0.065, 0.077]
N	687	664
R^2	0.00	0.00
Sample	Small elections	Large elections

Notes : An election is considered small (large), if at most (more than) 2422 votes are cast. Only actual lotteries are included in the regressions.Confidence intervals are based on standard errors clustered at municipality level. Unit of observation is a candidate *i* at year *t* .

Table B4: We have reproduced the experimental estimate using a sample from which those who do not rerun are excluded. We report these results for our main outcome and the alternative outcome (the vote share). These results provide no evidence of a personal incumbency advantage.

Table B4. Experimental estimates for rerunners.

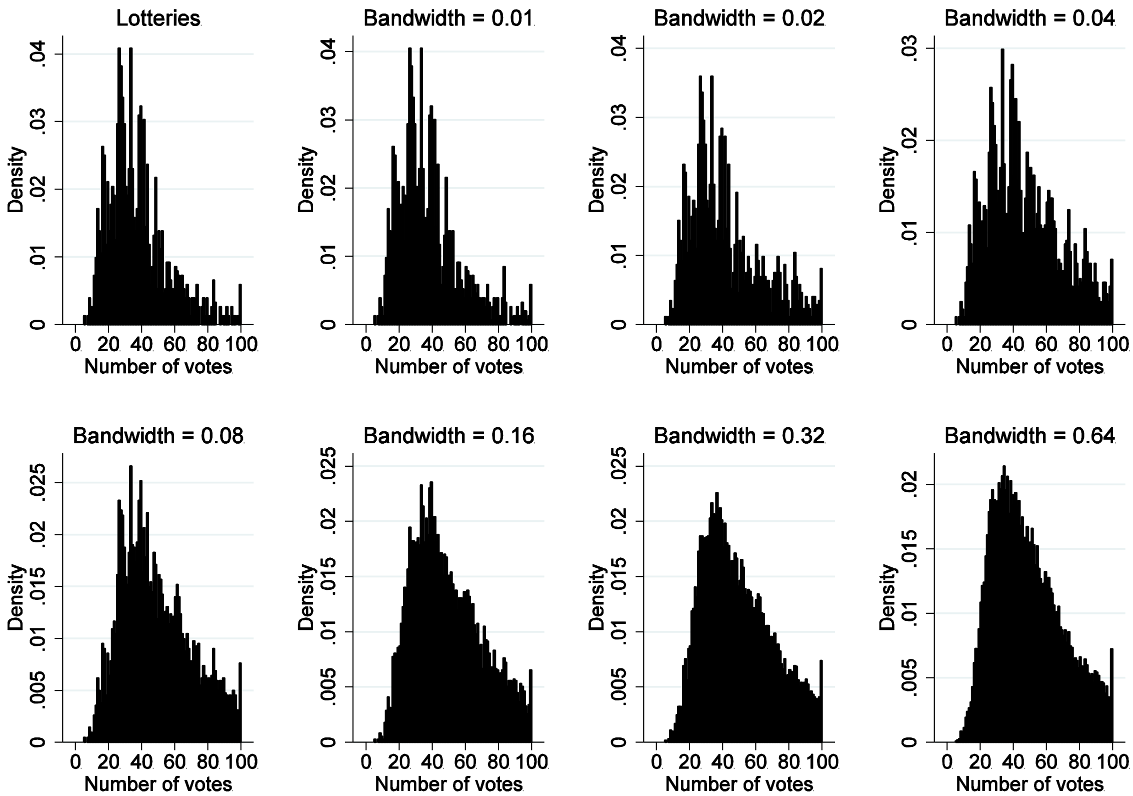
	Outcome: Elected next election			
	(1)	(2)	(3)	(4)
Elected	-0.003	-0.002	0.025	0.035
	[-0.071, 0.066]	[-0.073, 0.068]	[-0.073, 0.124]	[-0.091, 0.160]
N	820	820	820	820
R^2	0.00	0.04	0.41	0.64
	Outcome: Vote share next election			
	(5)	(6)	(7)	(8)
Elected	-0.012	-0.009	0.051	0.021
	[-0.145, 0.122]	[-0.142, 0.124]	[-0.110, 0.212]	[-0.184, 0.226]
N	820	820	820	820
R^2	0.00	0.17	0.67	0.80
Controls	No	Yes	Yes	Yes
Municipality fixed effects	No	No	Yes	No
Municipality-year fixed effects	No	No	No	Yes

Notes: Only actual lotteries and rerunning candidates are included in the regressions. Set of controls includes age, gender, party affiliation, socio-economic status and incumbency status of a candidate, and total number of votes. Some specifications include also municipality or municipality-year fixed effects. Unit of observation is a candidate *i* at year *t*.

Appendix C: Supplementary information to Section 3.2 (Non-experimental estimates)

This appendix provides additional figures to characterize our forcing variable, v_{it}. We call our forcing variable "Vote margin (%)" in some of the graphs below, where the margin refers to the distance to the cutoff. The forcing variable is reported in percentage points. For example, a value 0.5 refers to 5 votes out of 1000.

Figure C1: In this figure, we graph the distribution of the number of votes within different bandwidths in the forcing variables. The figures show how many votes the candidates involved in close elections receive. The distribution gets a large amount of mass around 30–50 votes.



Notes: Figure shows the distribution of number of votes within one bandwidth on both sides of the cutoff for different bandwidths. Bin size is 1 vote. x-axis is restricted to 100 votes.

Figure C1. The distribution of the number of votes for different bandwidths.

Figure C2: This figure displays the relationship between the forcing variable and the distance to cutoff (vote distance), as measured by the absolute number of votes. The density graphs show that, as expected, the candidates are further away from the cutoff in terms of absolute number of votes as the bandwidth becomes wider. For all reported bandwidths, the most common distance is only one or two votes.

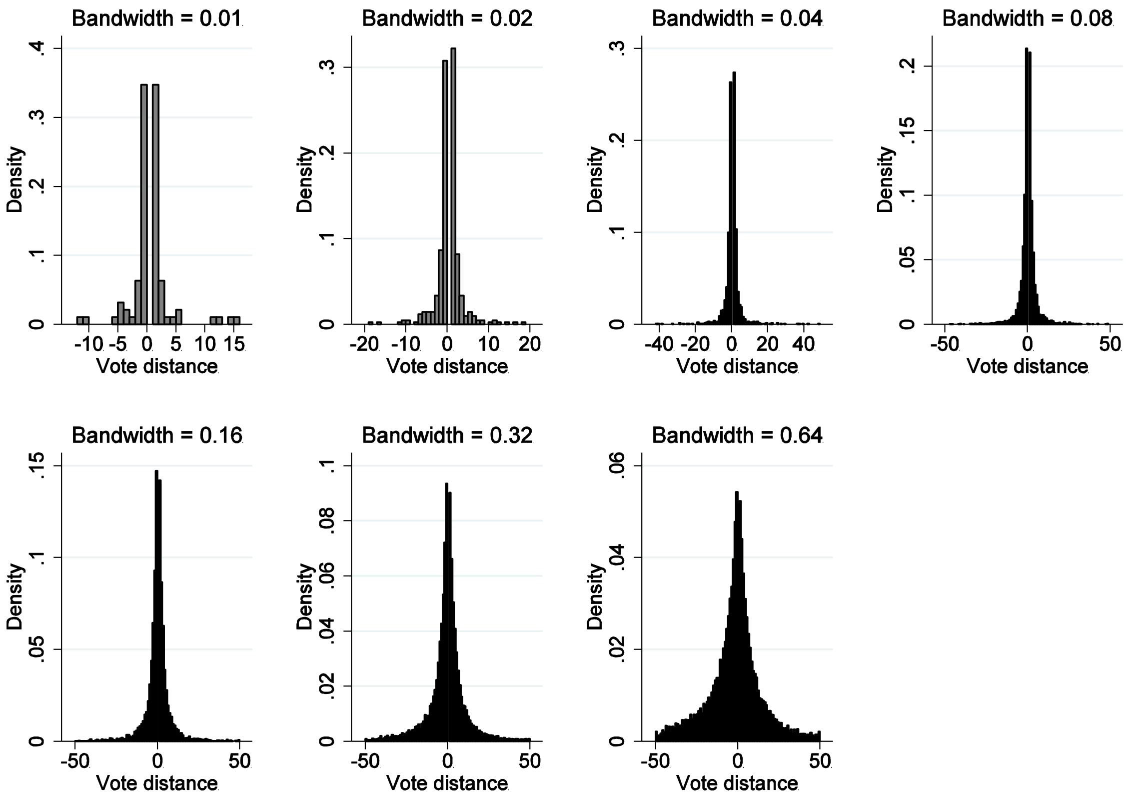


Figure C2. Distribution of the distance to cutoff in absolute votes for different bandwidths of the forcing variable.

Figure C3: This figure maps the relationship between the forcing variable (vote margin, x-axis) and the distance to cutoff measured in the absolute number of votes (y-axis). It shows that, overall, the two are positively correlated within the reported bandwidth. There are fairly many observations also on or close by the horizontal line. This means that, within the reported bandwidth, for each value of the forcing variable there are many observations that are only one or two votes from the cutoff. This echoes what Figure C2 shows.

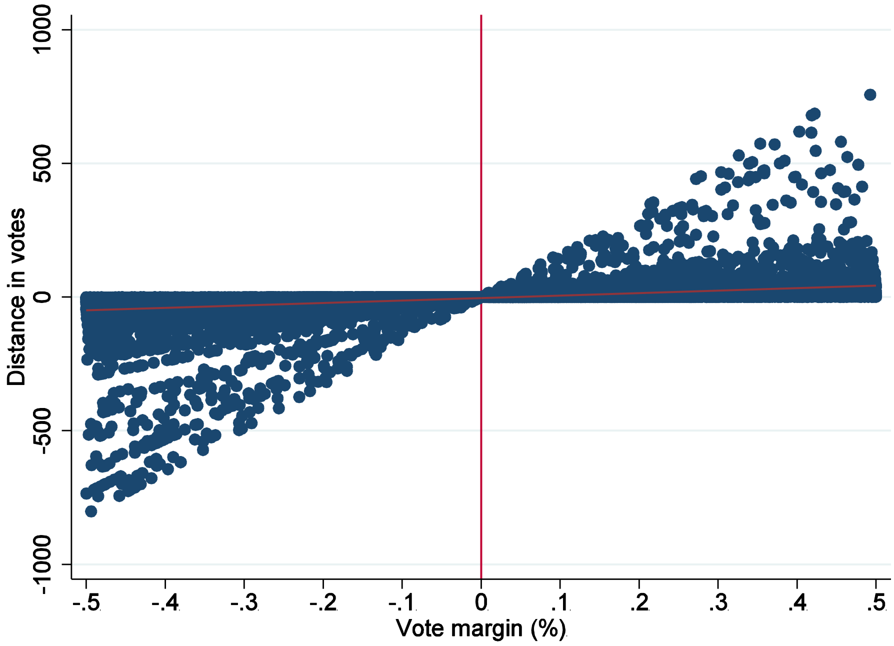
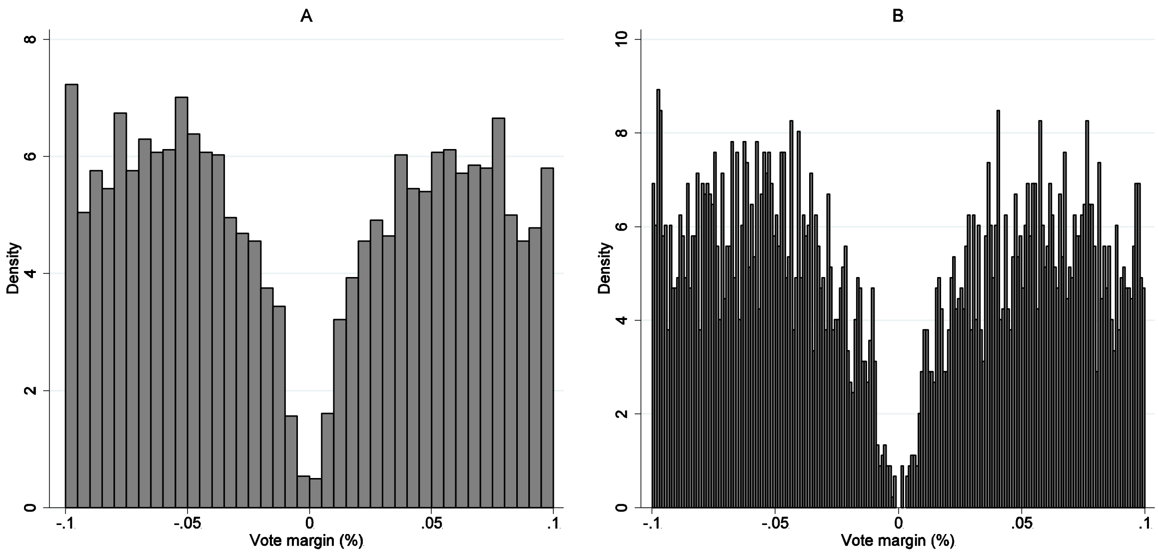


Figure C3. Relationship between the forcing variable and the distance to cutoff measured in absolute votes.

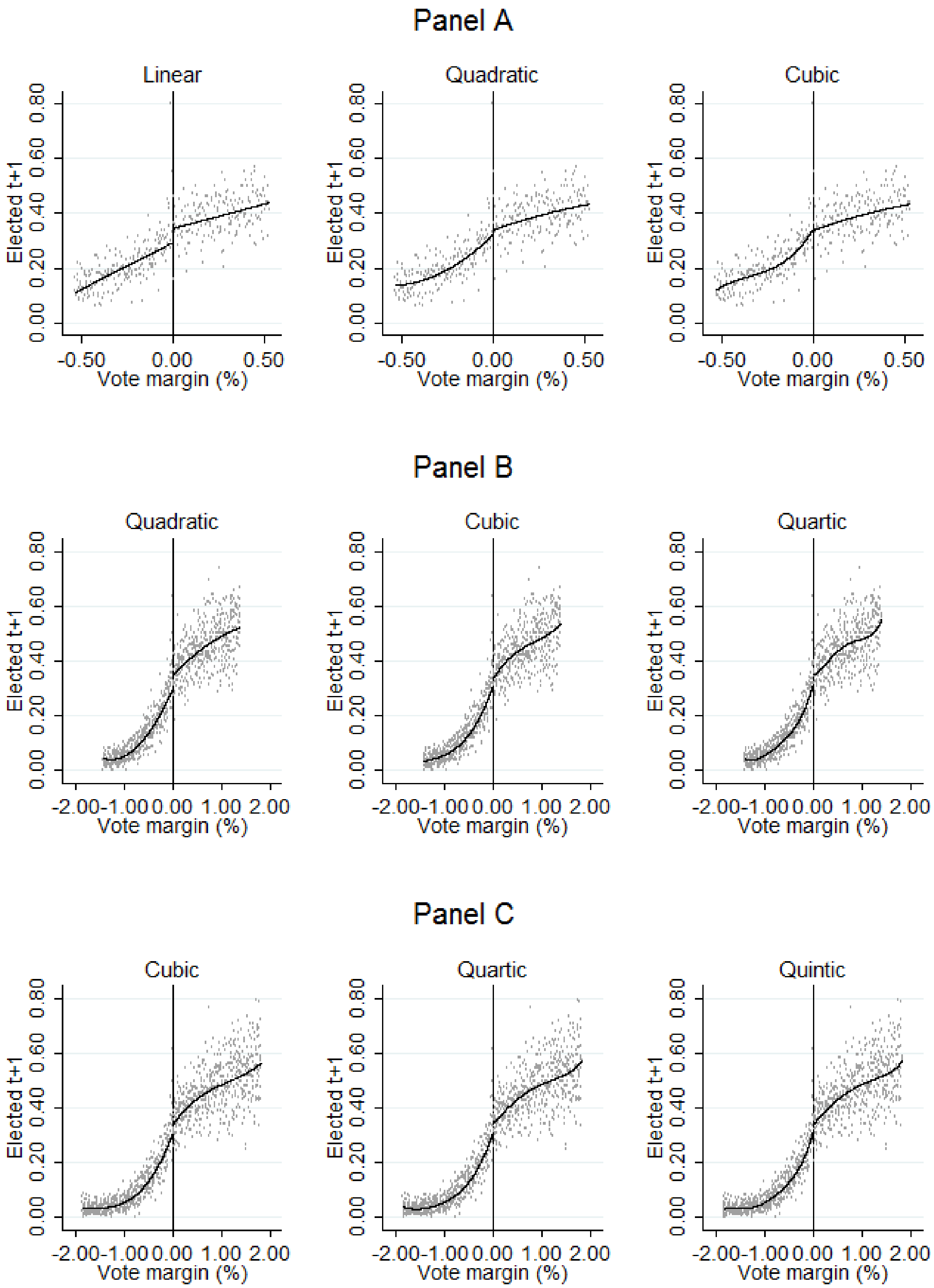
Figure C4: These histograms show the distribution of the forcing variable within two very small bandwidths nearby the RDD cutoff. The histograms suggest that the forcing variable can be treated as continuous for the purposes of RDD. The dip in the density of the forcing variable between -0.01 and 0.01 is related to the fact that the forcing variable can obtain such small values only when the party lists are large. For example, a value of 0.01 refers to one vote out of ten thousand. Lists that get more than ten thousand votes exist only in the larger municipalities.



Notes: Figure A shows histogram of the forcing variable with bins of 0.005, and figure B uses bins of 0.001. Values of the forcing variable are limited between -0.1 and 0.1. Lotteries have been excluded.

Figure C4. Histogram of the forcing variable close to the cutoff.

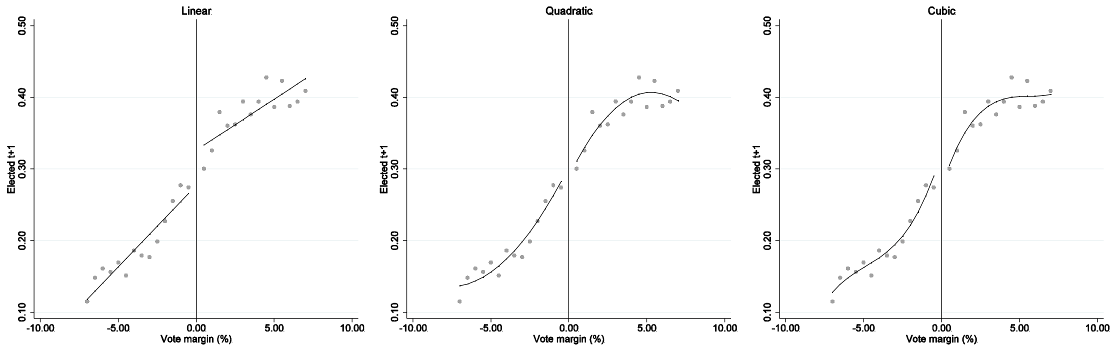
Figure C5: These figures are similar to Figure 1 in the main text, but they give a richer picture of the underlying data, as they show the binned averages within a larger number of bins. These bins have been chosen applying mimicking variance evenly spaced method using spacing estimators (see Calonico et al. 2015). We estimate the optimal Imbens-Kalyanaraman bandwidth for the left-most specification in each panel, and then increase the degree of the control polynomial by one or two.



Notes: Figure shows local polynomial fits with a triangular kernel within the optimal Imbens-Kalyanaraman (2012) bandwidth optimized for the linear specification in Panel A, quadratic specification in Panel B and cubic specification in Panel C. On left side, the graphs display the fits that are based on the same p (order of local polynomial specification) as the optimal bandwidths are calculated for. In the midmost graph, the fit uses a p+1 specification and on the right side, the graphs are based on a p+2 specification. Gray dots mark binned averages chosen using mimicking variance evenly-spaced method using spacing estimators (see Calonico et al. 2015).

Figure C5. Curvature between the forcing variable and the outcome

Figure C6: These figures display RDD fit and a scatter of plot of observation bins around the cutoff when the forcing variable is defined as the (non-normalized) number of votes. The main purpose of these figures is to show that the documented features in the relationship between the forcing variable and outcome are not unique to the way we define the forcing variable in the main text. This indeed appears not to be the case: As the figures show, there is a clear jump at the cutoff in the figure on the left and evidence of curvature in the middle and on the right.



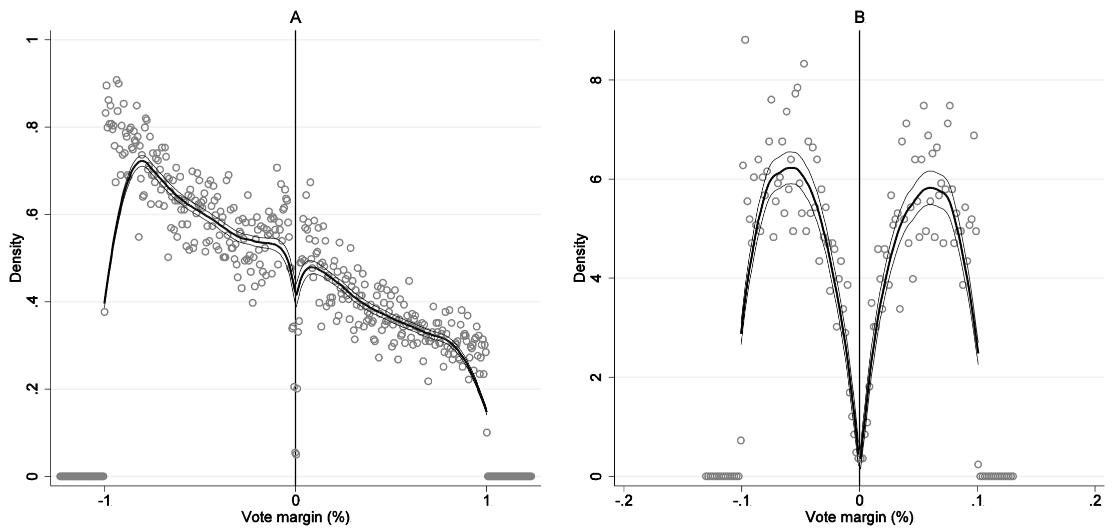
Notes: Figure shows local polynomial fits with triangular kernel within the optimal Imbens-Kalyanaraman (2012) bandwidth optimized for the linear specification. Gray dots mark binned averages.

Figure C6. Curvature between the non-scaled forcing variable (number of votes) and the outcome

Appendix D: Supplementary information to HMSTT Section 4.1 (RDD falsification and smoothness tests)

In this appendix, we report validity tests to for RDD. The reported pattern of validity tests includes i) the McCrary (2008) manipulation test, ii) covariate balance tests, and iii) placebo tests where the location of the cutoff is artificially redefined.

Figure D1: This figure reports the McCrary (2008) tests. The test asks whether there is a jump in the amount of observations at the cutoff of getting elected. Such jump would indicate that some candidates have been able to manipulate into getting the treatment. There is no jump. The estimated difference in height is -0.0140 (standard error 0.0474) in graph A (the values of the forcing variable restricted between -1 and 1), and -0.5701 (standard error 0.6616) in graph B (the values of the forcing variable restricted between -0.1 and 0.1). This is not surprising, since there cannot be a jump in the amount of candidates elected: The number of council seats available is fixed. If one candidate is able to manipulate into getting elected, another candidate will not be elected.



Notes: Graph A shows the McCrary (2008) density test with the forcing variable within -1 and 1. Graph B shows the density test with forcing variable within -0.1 and 0.1.

Figure D1. McCrary density test.

Table D1: The main identification assumption in RDD is that covariates develop smoothly over the cutoff. The recent literature (e.g. Snyder et al. 2015 and Eggers et al. 2015) argues that especially in close election applications, balance tests based on the comparisons of means across the cutoff are likely to (wrongly) signal imbalance, because the covariates may vary strongly with the forcing variable near the cutoff. One should, therefore, control for this co-variation ("slopes") when implementing the balance tests. Panel A of Table D1 uses therefore the optimal bandwidth for the local linear specification computed for each covariate separately. When testing for covariate smoothness, bandwidth needs to be optimized for each covariate separately, because they are each unique in their relation to the forcing variable. We report in Panel B of Table D1 also the results that use half the optimal bandwidth. We do so to check how under-smoothing influences the covariance balance tests and to make sure that curvature issues (similar to those we report for our main outcome) do not lead to wrong conclusions about the covariate balance. If some of the covariates have a lot of curvature nearby the cutoff, one might wrongly infer that there is imbalance unless under-smoothing, or some other de-biasing method, is used to obtain more valid confidence intervals.

As can be seen from Panel A and B, there are some significant estimates. We cannot rule out that the few imbalances are due to multiple testing, because Panel A and B are not completely in line with each other in this regard. It is also possible that the estimated jumps are due to substantial curvature in the relationship between the given covariate and the forcing variable near the cutoff. This seems to be at least partly the case, since many of the jumps are no longer statistically significant when more flexible specifications (smaller bandwidths for a given local polynomial or higher order polynomials for a given bandwidth) are used. This means that there are fewer rejections of covariate balance when more flexible local polynomial specifications (or under-smoothing) are used.

We conclude that, taken together, the covariate balance tests provide somewhat mixed evidence. Overall, they do not cast clear doubt on the validity of RDD.

Table D1. Covariate smoothness test.

Panel A: Bandwidth optimized for local linear specification

	(1)	(2)	(3)		(4)	(5)	(6)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Vote share	-0.005	-0.009	-0.004	Number of votes	3.060**	2.745	-1.501
	(0.009)	(0.011)	(0.014)		(1.120)	(1.421)	(3.046)
N	27125	27125	27125	N	37155	37155	37155
Bandwidth	0.74	0.74	0.74	Bandwidth	0.99	0.99	0.99
	(7)	(8)	(9)		(10)	(11)	(12)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Female	-0.037**	-0.018	-0.007	Age	0.349	-0.248	-0.225
	(0.008)	(0.010)	(0.013)		(0.216)	(0.323)	(0.469)
N	94185	94185	94185	N	71196	71196	71196
Bandwidth	2.74	2.74	2.74	Bandwidth	1.85	1.85	1.85
	(13)	(14)	(15)		(16)	(17)	(18)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Incumbent	0.019	0.022	0.023	Municipal employee	0.000	0.001	0.005
	(0.012)	(0.019)	(0.027)		(0.006)	(0.008)	(0.010)
N	27450	27450	27450	N	107961	107961	107961
Bandwidth	0.75	0.75	0.75	Bandwidth	3.60	3.60	3.60
	(19)	(20)	(21)		(22)	(23)	(24)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Wage income	91	756	338	Capital income	-225	-248	284
	(460)	(638)	(782)		(634)	(1104)	(1743)
N	39252	39252	39252	N	38572	38572	38572
Bandwidth	1.37	1.37	1.37	Bandwidth	1.35	1.35	1.35
	(25)	(26)	(27)		(28)	(29)	(30)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
High professional	-0.0269**	-0.006	0.010	Entrepreneur	0.016*	0.001	-0.011
	(0.008)	(0.009)	(0.013)		(0.008)	(0.011)	(0.014)
N	93021	93021	93021	N	60119	60119	60119
Bandwidth	2.69	2.69	2.69	Bandwidth	1.55	1.55	1.55
	(31)	(32)	(33)		(34)	(35)	(36)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Student	-0.005	-0.005	-0.007	Unemployed	0.004	0.006	0.007
	(0.003)	(0.004)	(0.005)		(0.003)	(0.005)	(0.006)
N	77124	77124	77124	N	78963	78963	78963
Bandwidth	2.04	2.04	2.04	Bandwidth	2.10	2.10	2.10
	(37)	(38)	(39)				
	Linear	Quadratic	Cubic				
University	-0.017	0.009	0.029*				
	(0.010)	(0.010)	(0.014)				
N	71647	71647	71647				
Bandwidth	2.45	2.45	2.45				

Panel B: 0.5 * bandwidth optimized for local linear specification

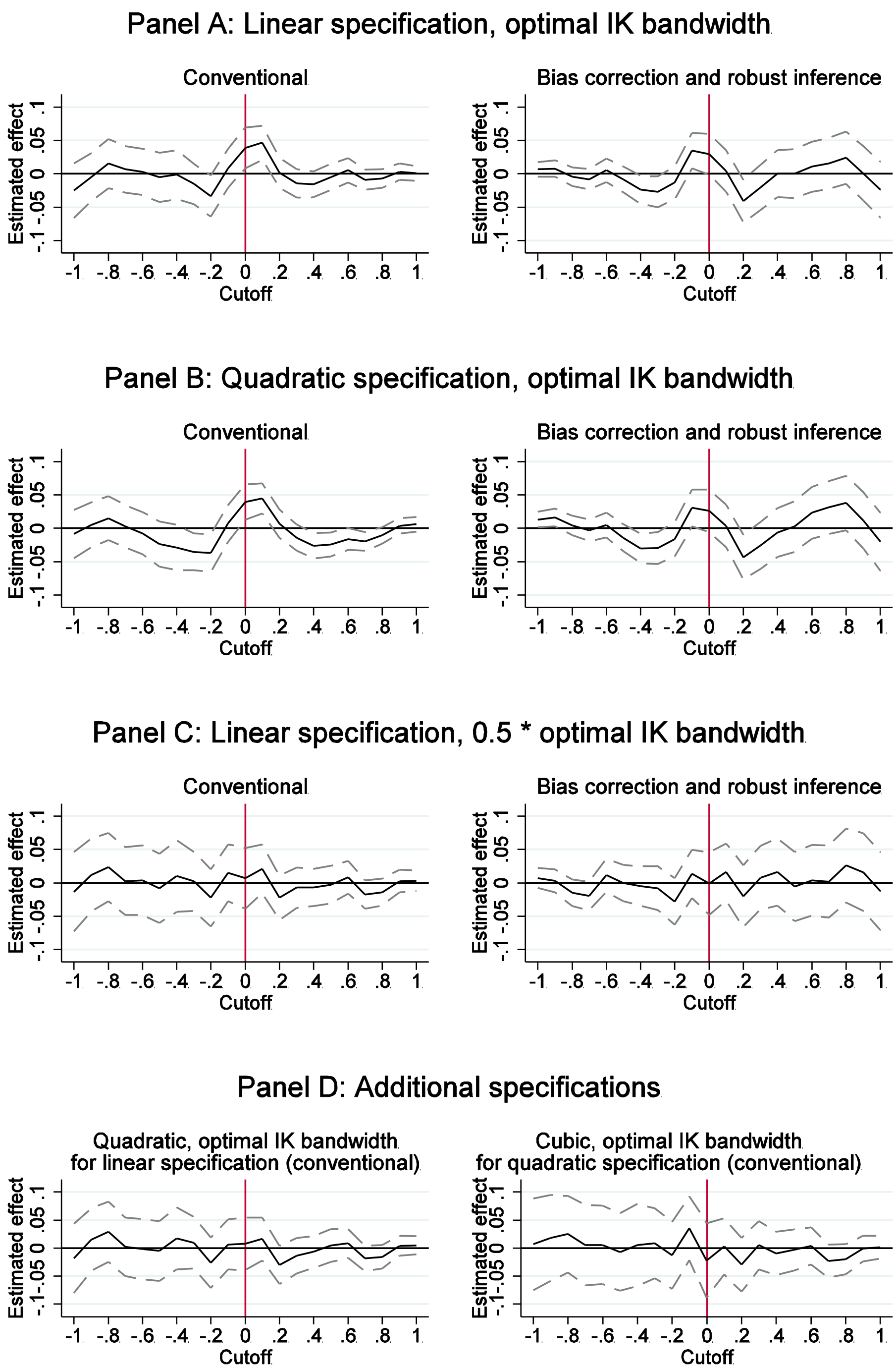
	(37)	(38)	(39)		(40)	(41)	(42)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Vote share	0.000	0.003	-0.003	Number of votes	0.624	-0.255	2.547
	(0.009)	(0.013)	(0.020)		(1.437)	(1.431)	(5.732)
N	13555	13555	13555	N	18077	18077	18077
Bandwidth	0.37	0.37	0.37	Bandwidth	0.50	0.50	0.50
	(43)	(44)	(45)		(46)	(47)	(48)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Female	-0.020*	-0.009	-0.014	Age	-0.096	-0.095	-0.272
	(0.010)	(0.014)	(0.019)		(0.316)	(0.475)	(0.651)
N	52883	52883	52883	N	34347	34347	34347
Bandwidth	1.37	1.37	1.37	Bandwidth	0.93	0.93	0.93
	(49)	(50)	(51)		(52)	(53)	(54)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Incumbent	0.022	0.019	0.011	Municipal employee	0.002	0.007	0.001
	(0.018)	(0.030)	(0.045)		(0.007)	(0.011)	(0.014)
N	13686	13686	13686	N	69385	69385	69385
Bandwidth	0.37	0.37	0.37	Bandwidth	1.80	1.80	1.80
	(55)	(56)	(57)		(58)	(59)	(60)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Wage income	397	-214	-767	Capital income	-285	642	3321
	(591)	(806)	(1142)		(1106)	(1967)	(2793)
N	18528	18528	18528	N	18205	18205	18205
Bandwidth	0.69	0.69	0.69	Bandwidth	0.67	0.67	0.67
	(61)	(62)	(63)		(64)	(65)	(66)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
High professional	-0.008	0.007	0.010	Entrepreneur	0.001	-0.011	-0.018
	(0.009)	(0.013)	(0.016)		(0.011)	(0.015)	(0.020)
N	51757	51757	51757	N	28379	28379	28379
Bandwidth	1.34	1.34	1.34	Bandwidth	0.77	0.77	0.77
	(67)	(68)	(69)		(70)	(71)	(72)
	Linear	Quadratic	Cubic		Linear	Quadratic	Cubic
Student	-0.005	-0.009	-0.016*	Unemployed	0.006	0.008	0.011
	(0.004)	(0.005)	(0.007)		(0.004)	(0.006)	(0.008)
N	38230	38230	38230	N	39557	39557	39557
Bandwidth	1.02	1.02	1.02	Bandwidth	1.05	1.05	1.05
	(73)	(74)	(75)				
	Linear	Quadratic	Cubic				
University	0.007	0.029*	0.024				
	(0.009)	(0.014)	(0.018)				
N	38403	38403	38403				
Bandwidth	1.22	1.22	1.22				

Notes: Panel A shows estimated discontinuities in covariates using local polynomial regressions within the optimal IK bandwidth for local linear specification. Panel B uses bandwidth half of the optimal. * and ** denote 5% and 1% statistical significance levels, respectively. Unit of observation is a candidate *i* at year *t*.

Figure D2: Figure D2 reports a series of placebo tests where the location of the cutoff is artificially redefined. If there are jumps in locations other than the true cutoff, it would suggest that strong nonlinearities or discontinuities in the relationship between the forcing variable and the outcome may be driving the RDD result (instead of a causal effect at the cutoff). Typically, these tests are used in applications where there is a documented effect at the cutoff (that is statistically different from zero) and the researcher wants to show that this statistically significant jump is unique (or, at least, that only 5% of the placebo cutoffs show jumps that are significant at the 5% level).

In Panel A and B, we display the placebo RDD estimates that are based on the conventional local linear and quadratic specification, using the corresponding IK optimal bandwidths. As we report in the main text, the RDD estimates produced by these specifications indicate that there would be a positive jump at the true cutoff. This is in contrast to what our experimental estimate suggests. As the placebo estimates on the left of these panels show, there also are statistically significant jumps at some of the placebo cutoffs located close by the true cutoff. Some of these jumps are even larger than the one found at the true cutoff. These placebo tests are thus indicative of these RDD specifications not working properly. The placebo graphs on the right have been produced using the same specifications as on the left, but with the CCT-correction. They, too, are indicative of these specifications not working as expected.

In Panels C and D, we explore whether those RDD specifications that in our context seem to work are problematic in the light of the placebo tests. Panel C reports the results for half the optimal (IK) bandwidths: On the left, we use the conventional local linear specification for this under-smoothing approach. The corresponding estimates based on the CCT-correction are displayed on the right. In Panel D we explore whether a polynomial of order p+1 is flexible enough for the bandwidth that has been optimized for a polynomial of order p. The panel reports these results for the quadratic and cubic local polynomials. As the two panels show, there are no jumps at any of the placebo cutoffs, implying that these specifications work appropriately. In sum, the placebo tests reported in Panel C and D do suggest that the under-smoothing procedure or the use of higher degree local polynomials without adjusting the bandwidth accordingly may work. These findings thus suggest that the placebo cutoff tests seem to be of use in detecting too inflexible specifications.



Notes: The figure shows the RDD point estimates and the 95% confidence intervals from specifications using local polynomial regression with a triangular kernel. All the left hand graphs and also the right hand graph in Panel D use conventional approach with optimal IK bandwidths and confidence intervals constructed using standard errors clustered by municipality. All the right hand graphs in Panels A-C use IK bandwidth and bias-correction and robust inference by Calonico et al. (2014a). We report the results at various artificial (placebo) cutoffs where the location of the artificial cutoff relative to the true cutoff is reported in the x-axis. In Panel A, bandwidth is optimized for the linear specification, In Panel B, bandwidth is half the one in Panel A and in Panel C, bandwidth is optimized for the quadratic specification. In Panel D, bandwidth is optimized for p-order polynomial specification whereas the fit is based on p+1 order. Optimal bandwidth is based on the specification and sample at the real cutoff. Vertical red line marks the real cutoff.

Figure D2. RDD estimates at the artificial cutoffs.

Appendix E: Supplementary information to Section 4.2 (Robustness tests)

This appendix discusses the robustness tests (#1–#8) that we have conducted.

Robustness test #1: Global polynomial RDD

Table E1: In this table we report results for a parametric RDD specification using higher order *global* polynomials (1^{st}-5^{th} degree) of the forcing variable on both sides of the cutoff. As the table shows, the treatment effect estimates tend to get smaller when the degree of the polynomial increases, but even for the 5^{th} degree polynomial, they are positive, very large in size, and highly significant. The bias using global polynomials seems to an order of magnitude larger than the one obtained using local polynomials. This approach generates incumbency effects that are roughly similar in magnitude to those reported in Lee (2008). It should be noted, however, that his estimates refer to an amalgam of party and personal incumbency effects and apply to a very different institutional context.

Table E1. Parametric RDD with 1^{st}–5^{th} order polynomials.

Outcome: Elected next election					
	(1)	(2)	(3)	(4)	(5)
Elected	0.432	0.386	0.342	0.296	0.255
95% confidence interval	[0.422, 0.442]	[0.374, 0.398]	[0.328, 0.355]	[0.281, 0.311]	[0.239, 0.272]
N	154543	154543	154543	154543	154543
R^2	0.33	0.33	0.33	0.34	0.34
Order of control polynomial	1st	2nd	3rd	4th	5th

Notes: Each specification uses the whole range of data. Confidence intervals are based on standard errors clustered at municipality level. Unit of observation is a candidate *i* at year *t*.

Robustness test #2: Alternative measure of incumbency advantage

Table E2: In this table, we look at the effect of being elected in election at time *t* on the vote share in the election at time *t*+1. As we reported earlier (Table B2 in Appendix B), the effect is not statistically different from zero in the lottery sample when this variable is used as an alternative outcome. As the table below shows, the conventional RDD using optimal bandwidths and local linear specification produces a positive and significant effect. The more flexible specifications reproduce the experimental estimate: The estimates suggest that the under-smoothing procedure and the use of higher degree local polynomials without adjusting the bandwidth accordingly work. The bias-correction procedure of Calonico et al. (2014a) reproduces the experimental estimate for this outcome (Panel C). Adjusting the MSE-optimal bandwidths with the adjustment factor suggested by Calonico et al. (2016a) also shows that the RDD estimates are in line with the experimental estimate (Panel D). It is, however, important to point out that some of the estimates in Panel B are negative and quite large in the absolute value.

Table E2. RDD results, incumbency advantage in vote share.

Outcome: Vote share next election						
Panel A: Bandwidth optimized for local linear specification						
	(1)	(2)	(3)	(4)	(5)	(6)
	Linear		Quadratic		Cubic	
Elected	0.049	0.036	0.006	-0.001	-0.019	-0.034
95% confidence interval (clustered)	[0.012, 0.086]	[-0.004, 0.077]	[-0.046, 0.059]	[-0.061, 0.059]	[-0.090, 0.052]	[-0.111, 0.044]
N	36834	28925	36834	28925	36834	28925
Bandwidth	0.99	0.79	0.99	0.79	0.99	0.79
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel B: 0.5 * bandwidth optimized for local linear specification						
	(7)	(8)	(9)	(10)	(11)	(12)
	Linear		Quadratic		Cubic	
Elected	0.016	0.007	-0.026	-0.052	-0.086	-0.100
95% confidence interval (clustered)	[-0.034, 0.066]	[-0.048, 0.063]	[-0.100, 0.048]	[-0.136, 0.031]	[-0.187, 0.016]	[-0.213, 0.012]
N	17930	14348	17930	14348	17930	14348
Bandwidth	0.49	0.39	0.49	0.39	0.49	0.39
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel C: Bandwidths optimized for each specification, CCT-procedure						
	(13)	(14)	(15)	(16)	(17)	(18)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.006	-0.001	-0.003	0.002	-0.015	0.010
95% confidence interval (robust)	[-0.048, 0.060]	[-0.061, 0.058]	[-0.056, 0.050]	[-0.049, 0.053]	[-0.076, 0.046]	[-0.039, 0.058]
N	36834	28925	70205	76855	79078	109826
Bandwidth	0.99	0.79	1.83	2.03	2.11	3.76
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel D: Adjusted optimal bandwidths for each specification, CCT-procedure						
	(19)	(20)	(21)	(22)	(23)	(24)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	-0.020	-0.042	-0.021	-0.015	-0.045	-0.015
95% confidence interval (robust)	[-0.090, 0.050]	[-0.120, 0.036]	[-0.093, 0.051]	[-0.084, 0.053]	[-0.128, 0.038]	[-0.079, 0.048]
N	19742	15763	34189	38513	40965	73930
Bandwidth	0.54	0.43	0.92	1.03	1.09	1.94
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT

Notes: Table shows estimated incumbency advantage using local polynomial regressions within various bandwidths. Confidence intervals in panels A and B use standard errors clustered at municipality level. Panels C and D use the same main and bias bandwidths. Unit of observation is a candidate *i* at year *t*.

Robustness test #3: Small vs. large municipalities

Tables E3 and E4: These tables reports RDD results separately for small (Table E3) and large (Table E4) municipalities and thus for small and large elections. We use the median number of votes in the municipality in the lottery sample as the point of division (i.e., 2422 votes). As is noted in the main text of HMSTT (and in Appendix B), ties usually appear in elections held in slightly smaller municipalities (those with a small number of voters). This means that our experimental estimate may mostly apply to such elections. As we reported earlier, the experimental estimate is very close to zero both in small and in large elections. However, our forcing variable, v_{it}, can get values really close to zero only when parties get a large amount of votes. This tends to happen in larger elections. The RDD estimates, which use the narrowest bandwidths, may thus mostly apply to them. To check whether the discrepancy between the experimental and the RDD estimates is driven by the size of the municipalities, Tables E3 and E4 reports parts of our RDD analysis separately for small and large municipalities. The results show that our conclusions are not driven by the size of the elections. The bias-correction procedure of Calonico et al. (2014a) reproduces the experimental estimate (Panel C) for IK and CTT bandwidths, except for the cubic specification. Adjusting the MSE-optimal bandwidths with the adjustment factor suggested by Calonico et al. (2016a) brings all the RDD estimates in line with the experimental estimate (Panel D).

Table E3. RDD results for small municipalities.

Outcome: Elected next election

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Bandwidth optimized for local linear specification						
	Linear		Quadratic		Cubic	
Elected (conventional)	0.112	0.036	0.034	0.013	0.011	0.002
95% confidence interval (clustered)	[0.090, 0.135]	[-0.001, 0.072]	[0.001, 0.067]	[-0.044, 0.071]	[-0.033, 0.055]	[-0.076, 0.079]
N	23967	10611	23967	10611	23967	10611
Bandwidth	4.01	1.41	4.01	1.41	4.01	1.41
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel B: 0.5 * bandwidth optimized for local linear specification						
	(7)	(8)	(9)	(10)	(11)	(12)
	Linear		Quadratic		Cubic	
Elected (conventional)	0.051	0.018	0.017	0.007	0.010	0.039
95% confidence interval (clustered)	[0.021, 0.082]	[-0.035, 0.072]	[-0.030, 0.064]	[-0.078, 0.092]	[-0.054, 0.074]	[-0.100, 0.178]
N	14563	5598	14563	5598	14563	5598
Bandwidth	2.00	0.71	2.00	0.71	2.00	0.71
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel C: Bandwidths optimized for each specification, CCT-procedure						
	(13)	(14)	(15)	(16)	(17)	(18)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.034	0.013	0.014	0.012	0.012	0.010
95% confidence interval (robust)	[0.000, 0.068]	[-0.046, 0.073]	[-0.045, 0.073]	[-0.036, 0.060]	[-0.057, 0.081]	[-0.035, 0.054]
N	23967	10611	17625	22640	20274	29461
Bandwidth	4.01	1.41	2.51	3.62	3.05	6.53
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel D: Adjusted optimal bandwidths for each specification, CCT-procedure						
	(19)	(20)	(21)	(22)	(23)	(24)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.019	0.011	0.003	0.010	0.001	0.016
95% confidence interval (robust)	[-0.025, 0.062]	[-0.073, 0.096]	[-0.085, 0.091]	[-0.058, 0.079]	[-0.103, 0.105]	[-0.046, 0.078]
N	16738	6557	10373	14448	12645	22713
Bandwidth	2.37	0.83	1.38	1.98	1.70	3.64
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT

Notes: Table shows estimated incumbency advantage using local polynomial regressions within various bandwidths. Confidence intervals in panels A and B use standard errors clustered at municipality level.Panels C and D use the same main and bias bandwidths. Unit of observation is a candidate *i* at year *t*. Sample includes only small elections in which at most 2422 votes were given.

Table E4. RDD results for large municipalities.

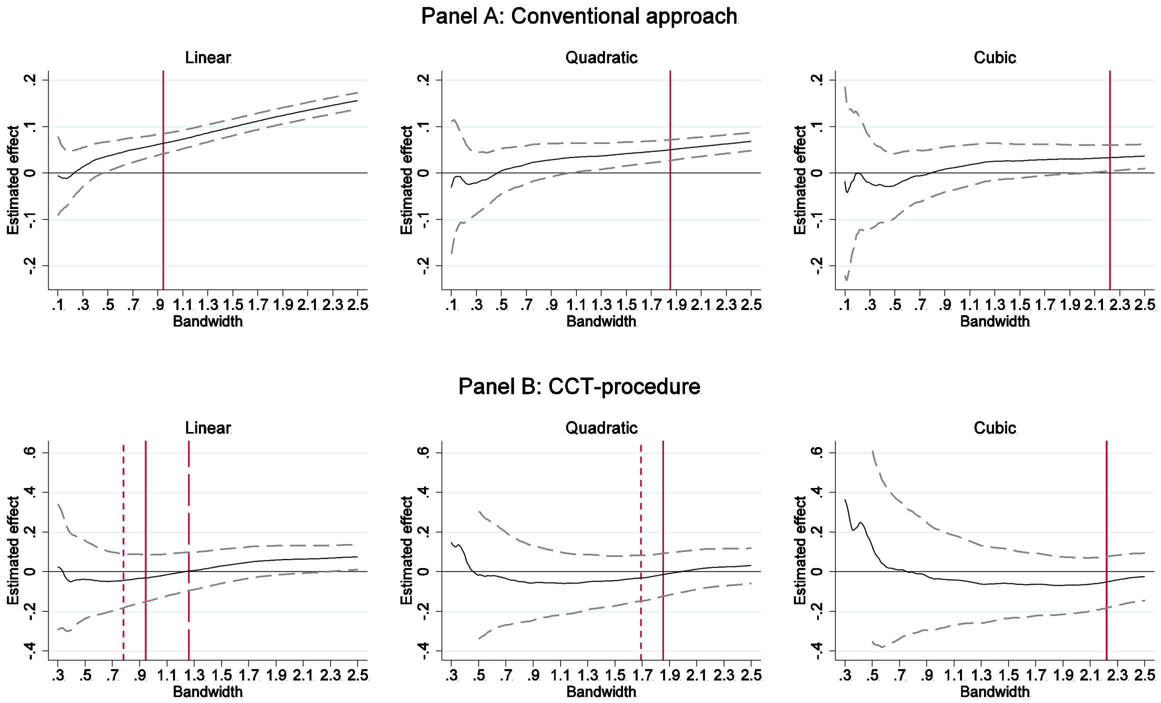
Outcome: Elected next election

Panel A: Bandwidth optimized for local linear specification						
	(1)	(2)	(3)	(4)	(5)	(6)
	Linear		Quadratic		Cubic	
Elected	0.051	0.064	0.010	0.024	-0.026	-0.007
95% confidence interval (clustered)	[0.019, 0.082]	[0.036, 0.091]	[-0.038, 0.058]	[-0.020, 0.067]	[-0.090, 0.038]	[-0.063, 0.049]
N	17665	22917	17665	22917	17665	22917
Bandwidth	0.62	1.11	0.62	1.11	0.62	1.11
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel B: 0.5 * bandwidth optimized for local linear specification						
	(7)	(8)	(9)	(10)	(11)	(12)
	Linear		Quadratic		Cubic	
Elected	0.010	0.028	-0.035	-0.026	-0.031	-0.039
95% confidence interval (clustered)	[-0.035, 0.056]	[-0.012, 0.067]	[-0.103, 0.034]	[-0.086, 0.035]	[-0.129, 0.067]	[-0.121, 0.043]
N	8945	11344	8945	11344	8945	11344
Bandwidth	0.31	0.55	0.31	0.55	0.31	0.55
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel C: Bandwidths optimized for each specification, CCT-procedure						
	(13)	(14)	(15)	(16)	(17)	(18)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.010	0.024	0.026	0.037	0.016	0.041
95% confidence interval (robust)	[-0.035, 0.055]	[-0.016, 0.063]	[-0.013, 0.065]	[0.005, 0.068]	[-0.030, 0.061]	[0.012, 0.070]
N	17665	22917	42757	64160	50079	88588
Bandwidth	0.62	1.11	1.38	2.12	1.60	4.00
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel D: Adjusted optimal bandwidths for each specification, CCT-procedure						
	(19)	(20)	(21)	(22)	(23)	(24)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	-0.029	-0.016	-0.017	0.014	-0.035	0.023
95% confidence interval (robust)	[-0.094, 0.036]	[-0.071, 0.040]	[-0.075, 0.041]	[-0.031, 0.058]	[-0.104, 0.034]	[-0.017, 0.062]
N	9939	12571	20183	32711	24196	63415
Bandwidth	0.35	0.44	0.71	1.09	0.84	2.09
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT

Notes: Table shows estimated incumbency advantage using local polynomial regressions within various bandwidths. Confidence intervals in panels A and B use standard errors clustered at municipality level.Panels C and D use the same main and bias bandwidths. Unit of observation is a candidate *i* at year *t*. Sample includes only large elections in which more than 2422 voters voted.

Robustness test #4: Heterogeneity in the personal incumbency effect

Figure E1: This figure shows RDD point estimates and their 95 % confidence intervals for a wide range of bandwidths, obtained using only those party-lists that were involved in the lotteries. When these party-lists are used, increasing the bandwidths adds new candidates from the same lists, but does not add new lists or municipalities to the sample. The reason for reporting these results is that, besides the bias caused by the potentially incorrect linear approximation, the point estimates may increase due to heterogeneity in the personal incumbency effect across municipalities (and thus party-lists). Our baseline RDD may identify the effect for a different set of municipalities than what we have in the experimental sample. Moreover, we are in practice pooling many different thresholds located for example at different absolute number of votes to be located at the same normalized zero location in the forcing variable. In this exercise we are pooling exactly the same thresholds in both the experimental and RD sample. In Figure E1, we report the results both using the conventional approach (Panel A) and the CCT-procedure (Panel B) with the bias bandwidth fixed to the RD effect bandwidth. The findings reported below do not support the explanation of heterogeneous treatment effects, as the patterns that we find here are similar to those reported in the main text of HMSTT (Figure 2).

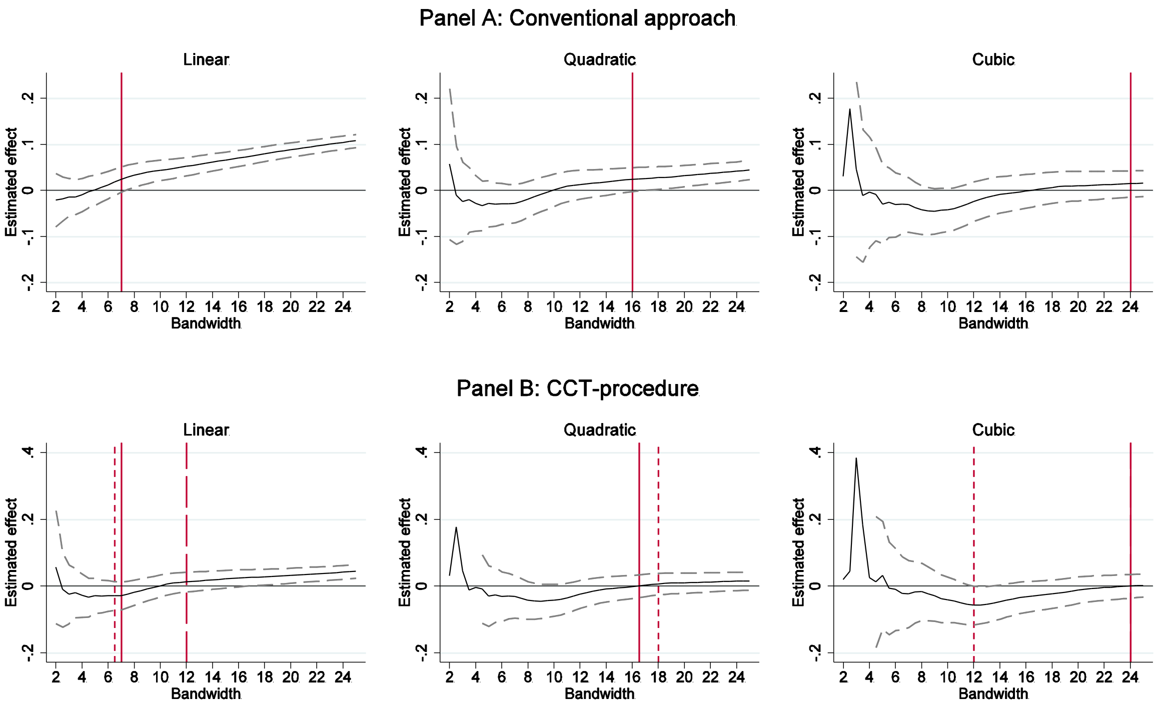


Notes: The graph displays the point estimates of incumbency advantage for various bandwidths using conventional approach (Panel A) and CCT-procedure (Panel B) with the same RD effect and bias bandwidth. Dashed lines mark the 95 % confidence intervals. In some of the figures, we do not display the confidence intervals for the smallest bandwidths in order to keep the scale of y-axes the same and thus the figures comparable. Red solid vertical line marks the optimal bandwidth chosen using IK implementation. Long-dashed vertical line marks the optimal CCT bandwidth and short-dashed line marks the adjusted CCT bandwidth. To keep the x-axes comparable, the (MSE-optimal and adjusted) CCT-bandwidths are shown only if they are smaller than 2.5. The sample includes only candidates from party lists that have lotteries.

Figure E1. RDD estimates using only party lists with lotteries.

Robustness test #5: Alternative definitions for the forcing variable.

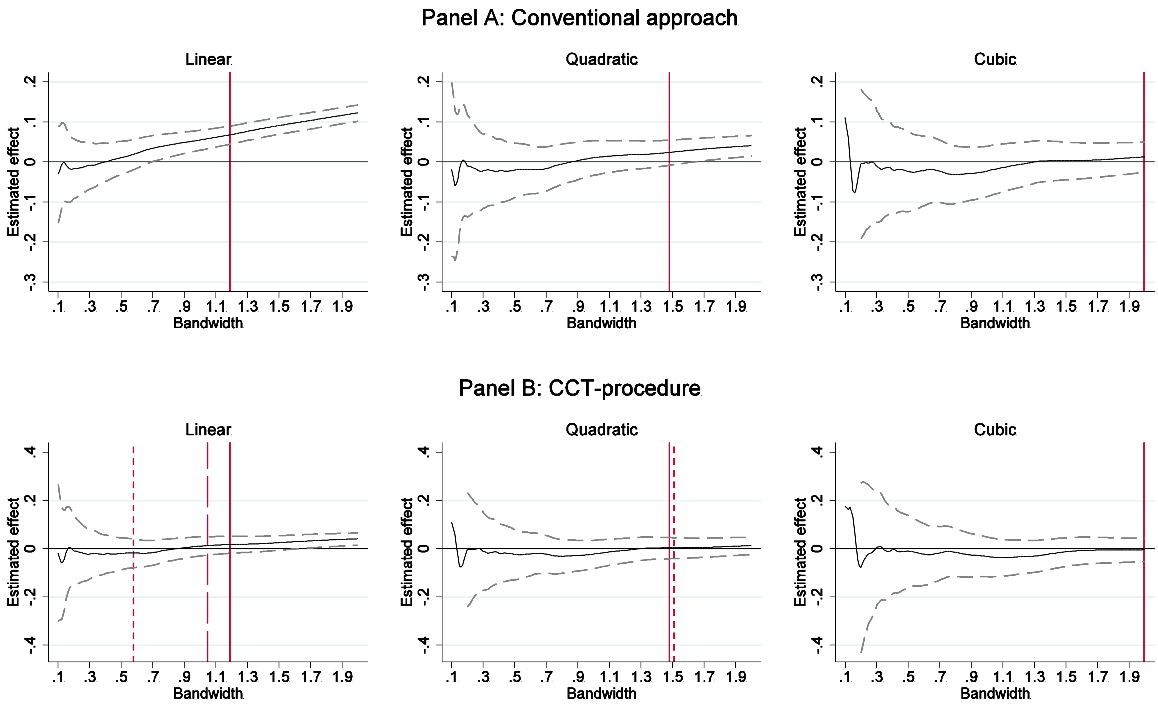
Figure E2: This figure reports RDD results when a non-scaled version of our forcing variable is used. The forcing variable is defined as in the main text of HMSTT, but is not scaled with the total number of votes the party got. We display the RDD estimates for linear, quadratic and cubic local polynomial specifications, separately for the conventional approach and the CCT-procedure. As the figure shows, the results that we obtain using this alternative forcing variable echo our baseline RDD results. The local linear polynomial produces biased results, but the higher order polynomials and bandwidths smaller than optimal work better. As Panel B shows, the bias-correction procedure of Calonico et al. (2014a) works well, especially if the MSE-optimal bandwidths are adjusted with the shrinkage factor suggested by Calonico et al. (2016a).



Notes: The graph displays the point estimates of incumbency advantage for various bandwidths using conventional approach (Panel A) and CCT-procedure (Panel B) with the same RD effect and bias bandwidth. Dashed lines mark the 95 % confidence intervals. In some of the figures, we do not display the confidence intervals for the smallest bandwidths in order to keep the scale of y-axes the same and thus the figures comparable. Red solid vertical line marks the optimal bandwidth chosen using IK implementation. Long-dashed vertical line marks the optimal CCT bandwidth and short-dashed line marks the adjusted CCT bandwidth. To keep the x-axes comparable, the (MSE-optimal and adjusted) CCT-bandwidths are shown only if they are smaller than 24. The forcing variable is as in the main text but not scaled with the total number of votes the party got.

Figure E2. RDD estimates using absolute vote margin, measured in number of votes, as the forcing variable.

Figure E3: This figure reports RDD results when another alternative version of our forcing variable is used. For this figure we define the cutoff as the number of votes of the first non-elected (last elected) candidate of the ordered party list for the elected (non-elected) candidates. The forcing variable is then the distance from this cutoff multiplied by 100 and divided by the number of party's votes. As the figure shows, the results echo our baseline RDD results. Moreover, as Panel B shows, the bias-correction procedure of Calonico et al. (2014a) works well, especially if the MSE-optimal bandwidths are adjusted with the shrinkage factor suggested by Calonico et al. (2016a).

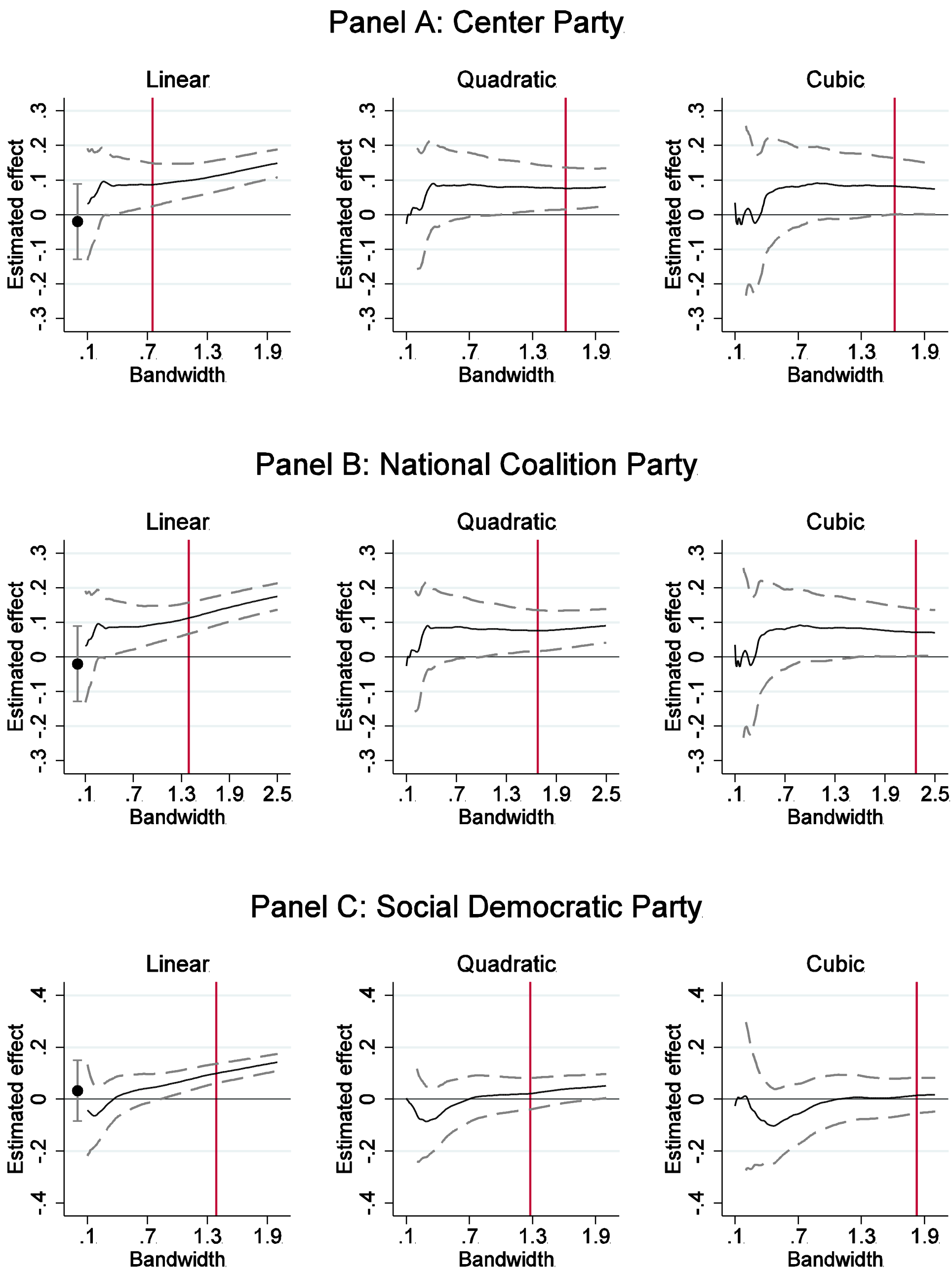


Notes: The graph displays the point estimates of incumbency advantage for various bandwidths using conventional approach (Panel A) and CCT-procedure (Panel B) with the same RD effect and bias bandwidth. Dashed lines mark the 95 % confidence intervals. In some of the figures, we do not display the confidence intervals for the smallest bandwidths in order to keep the scale of y-axes the same and thus the figures comparable. Red solid vertical line marks the optimal bandwidth chosen using IK implementation. Long-dashed vertical line marks the optimal CCT bandwidth and short-dashed line marks the adjusted CCT bandwidth. To keep the x-axes comparable, the (MSE-optimal and adjusted) CCT-bandwidths are shown only if they are smaller than 2. The forcing variable is then the distance from this cutoff multiplied by 100 and divided by the number of party's votes.

Figure E3. RDD estimates using the distance to the first non-elected (or last elected) candidate as the forcing variable.

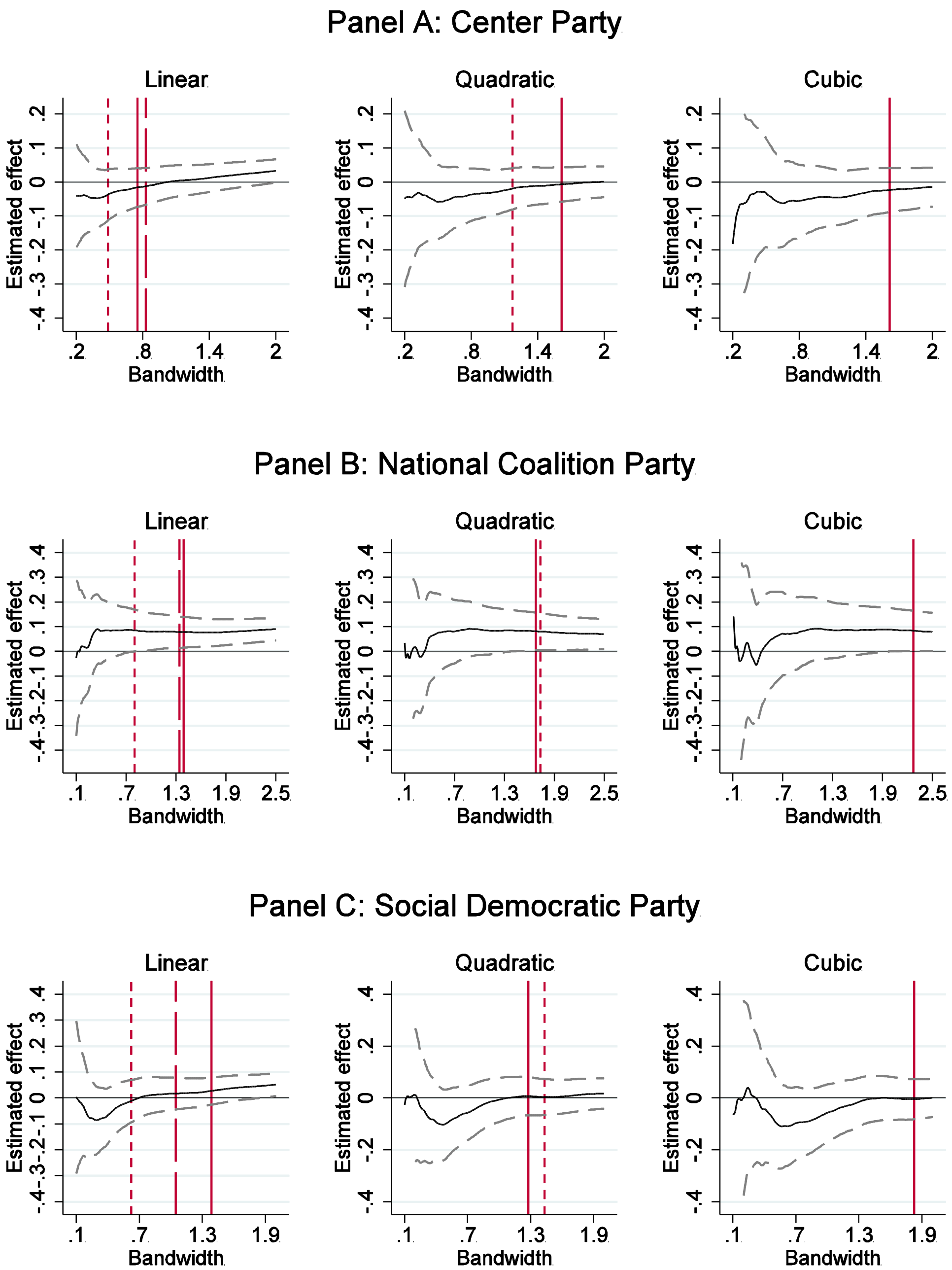
Robustness test #6: Heterogeneity in the effect between parties.

Figures E4 and E5: These figure reports graphically the RDD results separately for each of the three large parties (Panel A: Center Party, Panel B: National Coalition Party and Panel C: Social Democratic Party). Figure E4 shows results from conventional RDD estimations and Figure E5 reports the estimates obtained using CCT-procedure. The graphs allow us to study whether there is heterogeneity in the effect between the parties. Our motivation to look at such heterogeneity is that it could be an alternative explanation for the disparity between the experimental estimate and non-experimental RDD estimates. Suppose, for example, that there is no incumbency advantage within party A but a positive advantage within party B. Then if party A is more often involved in lotteries and if for some reason party B is overrepresented in the RDD samples (that are based on larger bandwidths), we might observe that the experimental estimate is zero and that RDD estimates produce a positive effect, especially when larger bandwidths are used. Figures E4 and E5 allow us to rule out such explanations. It seems that there is no substantial heterogeneity in the within party personal incumbency advantage between parties. As Figure E5 shows, the bias-correction procedure of Calonico et al. (2014a) works relatively well here, especially if the MSE-optimal bandwidths are adjusted with the shrinkage factor suggested by Calonico et al. (2016a)



Notes: The graph displays the point estimates of incumbency advantage for various bandwidths. Dashed lines show the 95 % confidence intervals. In some of the figures, we do not display the confidence intervals for the smallest bandwidths in order to keep the scale of the y-axes the same and thus the figures comparable. Red vertical line marks the optimal bandwidth chosen using IK implementation. The figure for linear specification also displays the estimate from the lottery sample and its 95 % confidence interval.

Figure E4. RDD estimates for different parties, conventional approach.



Notes: The graph displays the point estimates of incumbency advantage for various bandwidths. Dashed lines show the 95 % confidence intervals. In some of the figures, we do not display the confidence intervals for the smallest bandwidths in order to keep the scale of y-axes the same and thus the figures comparable. Red solid vertical line marks the optimal bandwidth chosen using IK implementation. Long-dashed vertical line marks the optimal CCT bandwidth and short-dashed line marks the adjusted CCT bandwidth. To keep the x-axes comparable within panels, the (MSE-optimal and adjusted) CCT-bandwidths are shown only if they are smaller than 2 (Panels A and C) or 2.5 (Panel B).

Figure E5. RDD estimates for different parties, CCT-procedure.

Robustness test #7: Excluding from the sample those who do not rerun

Tables E5 and E6: These tables report RDD results for a sample from which those who do not rerun are excluded. Table E5 reports the results for our main outcome, the effect of getting elected at period *t* on getting elected at period *t+1*. In Table E6, we look at an alternative outcome, incumbency advantage in vote share *t+1*. As we reported earlier (in Appendix B), the experimental estimates suggest no effect on these outcome variables when the sample from which those who do not rerun are excluded. Our motivation to report these results is that the previous literature is mixed on how those who do not rerun should be treated: For instance, Uppal (2010) report the results for a sample that includes all candidates and for a sample that only includes those who rerun, whereas de Magalhaes (2014) argues in favor of including all the candidates.

We again find that the standard implementation (local linear with IK optimal bandwidth) of RDD generates a positive and significant effect in both tables. We also find that undersmoothing appears to work (with one exception in Table E5, Panel B), and that the use of higher degree local polynomials without adjusting the bandwidth reproduces the experimental estimate in the sense that we do no reject the null hypothesis of no effect. These insignificant findings are largely, but not in each case, due to greater standard errors, as the estimated effects do not systematically become closer to zero as the more flexible approaches are used.

In Table E5, CCT-procedure suggests that there could be a small and statistically significant effect on getting elected at *t+1*. However, most of these estimates lose their statistical significance once we adjust the bandwidths following Calonico et al. (2016). The estimated effects are mostly smaller, but the conclusion of a zero effect is largely due to increased standard errors. Table E6 shows that, again, the local linear RDD with IK and CCT optimal bandwidths generates a positive and significant effect. However, both richer polynomials and the CCT-procedure recover the experimental estimate, irrespectively of whether the bandwidths are adjusted or not.

Table E5. RDD estimates using rerunners only, elected next election.

Outcome: Elected next election

Panel A: Bandwidth optimized for local linear specification						
	(1)	(2)	(3)	(4)	(5)	(6)
	Linear		Quadratic		Cubic	
Elected	0.067	0.075	0.051	0.053	0.037	0.043
95% confidence interval (clustered)	[0.026, 0.109]	[0.038, 0.112]	[-0.010, 0.111]	[-0.002, 0.108]	[-0.047, 0.121]	[-0.030, 0.115]
N	12058	15079	12058	15079	12058	15079
Bandwidth	0.54	0.69	0.54	0.69	0.54	0.69
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel B: 0.5 * bandwidth optimized for local linear specification						
	(7)	(8)	(9)	(10)	(11)	(12)
	Linear		Quadratic		Cubic	
Elected	0.048	0.057	0.034	0.035	0.056	0.034
95% confidence interval (clustered)	[-0.010, 0.107]	[0.006, 0.109]	[-0.055, 0.124]	[-0.044, 0.114]	[-0.077, 0.190]	[-0.077, 0.144]
N	6209	7745	6209	7745	6209	7745
Bandwidth	0.27	0.34	0.27	0.34	0.27	0.34
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel C: Bandwidths optimized for each specification, CCT-procedure						
	(13)	(14)	(15)	(16)	(17)	(18)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.051	0.053	0.059	0.056	0.060	0.051
95% confidence interval (robust)	[-0.009, 0.110]	[0.001, 0.105]	[0.013, 0.105]	[0.016, 0.097]	[0.012, 0.108]	[0.014, 0.087]
N	12058	15079	31503	39265	42257	56704
Bandwidth	0.54	0.69	1.47	1.90	2.10	3.62
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel D: Adjusted optimal bandwidths for each specification, CCT-procedure						
	(19)	(20)	(21)	(22)	(23)	(24)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.030	0.038	0.043	0.052	0.045	0.061
95% confidence interval (robust)	[-0.056, 0.116]	[-0.035, 0.112]	[-0.025, 0.111]	[-0.006, 0.110]	[-0.025, 0.115]	[0.010, 0.111]
N	7017	8783	16780	21631	24365	39851
Bandwidth	0.31	0.39	0.77	0.99	1.12	1.93
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT

Notes: Table shows estimated incumbency advantage using local polynomial regressions within various bandwidths. Sample includes only rerunning candidates. Confidence intervals in panels A and B use standard errors clustered at municipality level.Panels C and D use the same main and bias bandwidths. Unit of observation is a candidate *i* at year *t* .

Table E6. RDD estimates using rerunners only, vote share next election.

Outcome: Vote share next election						
Panel A: Bandwidth optimized for local linear specification						
	(1)	(2)	(3)	(4)	(5)	(6)
	Linear		Quadratic		Cubic	
Elected	0.049	0.049	0.047	0.047	0.049	0.052
95% confidence interval (clustered)	[0.002, 0.096]	[0.002, 0.097]	[-0.017, 0.111]	[-0.019, 0.113]	[-0.037, 0.134]	[-0.037, 0.141]
N	16668	15697	16668	15697	16668	15697
Bandwidth	0.76	0.72	0.76	0.72	0.76	0.72
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel B: 0.5 * bandwidth optimized for local linear specification						
	(7)	(8)	(9)	(10)	(11)	(12)
	Linear		Quadratic		Cubic	
Elected	0.058	0.060	0.037	0.026	-0.028	-0.028
95% confidence interval (clustered)	[-0.003, 0.118]	[-0.002, 0.122]	[-0.053, 0.127]	[-0.066, 0.119]	[-0.145, 0.089]	[-0.148, 0.093]
N	16668	15697	16668	15697	16668	15697
Bandwidth	0.38	0.36	0.38	0.36	0.38	0.36
Bandwidth selection method	0.5 * IK	0.5 * CCT	0.5 * IK	0.5 * CCT	0.5 * IK	0.5 * CCT
Panel C: Bandwidths optimized for each specification, CCT-procedure						
	(13)	(14)	(15)	(16)	(17)	(18)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.047	0.047	0.028	0.029	0.038	0.030
95% confidence interval (robust)	[-0.028, 0.122]	[-0.030, 0.124]	[-0.041, 0.097]	[-0.037, 0.095]	[-0.031, 0.106]	[-0.033, 0.092]
N	16668	15697	35817	39168	49438	55966
Bandwidth	0.76	0.72	1.70	1.89	2.72	3.51
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT
Panel D: Adjusted optimal bandwidths for each specification, CCT-procedure						
	(19)	(20)	(21)	(22)	(23)	(24)
	Linear		Quadratic		Cubic	
Elected (bias-corrected)	0.051	0.046	0.052	0.048	0.056	0.038
95% confidence interval (robust)	[-0.044, 0.146]	[-0.051, 0.143]	[-0.038, 0.143]	[-0.039, 0.134]	[-0.033, 0.145]	[-0.042, 0.117]
N	9709	9129	19329	21566	31212	38886
Bandwidth	0.43	0.41	0.89	0.99	1.45	1.87
Bandwidth selection method	IK	CCT	IK	CCT	IK	CCT

Notes : Table shows estimated incumbency advantage using local polynomial regressions within various bandwidths. Sample includes only rerunning candidates. Confidence intervals in panels A and B use standard errors clustered at municipality level.Panels C and D use the same main and bias bandwidths. Unit of observation is a candidate *i* at year *t* .

Robustness test #8: New rdrobust package

We have re-estimated the most relevant specifications of our analysis using the new MSE- and CER-bandwidths, made available by the updated version of rdrobust software (see Calonico et al. 2016b). The CER-optimal bandwidth is based on a higher-order Edgeworth expansion. This bandwidth optimizes coverage error but does not necessarily have desirable properties for point estimation. The updated software also allows for clustering when calculating the standard errors and the bandwidths.

Tables E7 and E8: Table E7 reports conventional point estimates in Panel A, bias-corrected point estimates in Panels B and C, and confidence intervals allowing for clustering at the municipality level. In Panel A of Table E7, we use the conventional approach and the bandwidth is selected optimally either for the local linear specification (columns (1)-(4)) or the local quadratic specification (columns (5) and (6)) using the new MSE- and CER-bandwidths. Panels B and C report results obtained using the CCT-procedure. In Panel B, we estimate the bandwidths for the RDD effect and bias separately, while these two are fixed to be equal in Panel C. The results largely echo our earlier findings and support our earlier conclusions. In particular, fitting local polynomials within optimal bandwidths may lead to misleading results if the bandwidths are too wide. The new implementation of the MSE-optimal bandwidth is similar to the CCT implementation in the older version of rdrobust software. The results that the new MSE implementation produces are therefore similar to what we report for the CCT implementation. More generally, it seems that the exact way of implementing the MSE-optimal bandwidth is less relevant than following the recommendations of Calonico et al. (2016a); what reproduces the experimental estimate in our data is fitting polynomials of degree p+1 within the optimal bandwidth for p or setting the RDD effect and bias bandwidths equal (Panel C). We also allowed for different bandwidths for the treatment and the control groups; that did not substantially affect the results (not reported). Table E8 replicates Table E7 but reports non-clustered (but heteroscedastic-robust) standard errors. As can be seen, the results are similar, if no clustering is used.

Table E7. RDD estimates with new MSE and CER-optimal bandwidths (clustered standard errors).

Panel A: Conventional approach						
	(1)	(2)	(3)	(4)	(5)	(6)
	Linear		Quadratic (bandwidth for p = 1)		Quadratic (bandwidth for p = 2)	
Elected	0.051	0.038	0.021	0.006	0.059	0.041
95% confidence interval (clustered)	[0.026, 0.077]	[0.006, 0.069]	[-0.019, 0.061]	[-0.041, 0.054]	[0.039, 0.080]	[0.016, 0.067]
N	26463	18804	26463	18804	80971	57225
R^2	0.05	0.03	0.05	0.03	0.17	0.12
Bandwidth	0.73	0.52	0.73	0.52	2.18	1.48
Bandwidth implementation	MSE	CER	MSE	CER	MSE	CER
Panel B: CCT-procedure with optimal bandwidths						
	(7)	(8)	(9)	(10)	(11)	(12)
	Linear		Quadratic (bandwidth for p = 1)		Quadratic (bandwidth for p = 2)	
Elected (bias-corrected)	0.045	0.034	-0.005	-0.024	0.055	0.040
95% confidence interval (clustered)	[0.019, 0.071]	[0.003, 0.065]	[-0.058, 0.048]	[-0.091, 0.042]	[0.034, 0.076]	[0.014, 0.067]
N	14506	10415	14506	10415	41983	27580
RD effect bandwidth	0.73	0.52	0.73	0.52	2.18	1.48
Bias bandwidth	3.01	3.01	3.01	3.01	6.34	6.34
Bandwidth implementation	MSE	CER	MSE	CER	MSE	CER
Panel C: CCT-procedure with RD effect bandwidth equal to bias bandwidth						
	(13)	(14)	(15)	(16)	(17)	(18)
	Linear		Quadratic (bandwidth for p = 1)		Quadratic (bandwidth for p = 2)	
Elected (bias-corrected)	0.021	0.006	-0.005	-0.024	0.033	0.026
95% confidence interval (clustered)	[-0.018, 0.060]	[-0.040, 0.053]	[-0.058, 0.048]	[-0.091, 0.042]	[0.004, 0.061]	[-0.010, 0.062]
N	14506	10415	14506	10415	41983	27580
RD effect bandwidth	0.73	0.52	0.73	0.52	2.18	1.48
Bias bandwidth	0.73	0.52	0.73	0.52	2.18	1.48
Bandwidth implementation	MSE	CER	MSE	CER	MSE	CER

Notes: Table shows estimated incumbency advantage using local polynomial regressions within various bandwidths. All estimations use a triangular kernel. Confidence intervals account for clustering at municipality level. Unit of observation is a candidate *i* at year *t*. The MSE bandwidth is a newer implementation of the estimation of the MSE-optimal bandwidth choice (see Calonico et al. 2016b).

Table E8. RDD estimates with new MSE and CER-optimal bandwidths (non-clustered standard errors).

Outcome: Elected next election

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Conventional approach						
	Linear		Quadratic (bandwidth for p = 1)		Quadratic (bandwidth for p = 2)	
Elected	0.051	0.028	0.020	-0.012	0.060	0.034
95% confidence interval (non-clustered)	[0.026, 0.076]	[-0.006, 0.062]	[-0.017, 0.058]	[-0.067, 0.043]	[0.039, 0.081]	[0.005, 0.064]
N	26221	14404	26221	14404	81696	42090
R^2	0.05	0.02	0.05	0.02	0.17	0.09
Bandwidth	0.72	0.40	0.72	0.40	2.20	1.11
Bandwidth selection method	MSE	CER	MSE	CER	MSE	CER
Panel B: Bias-correction with optimal bandwidths						
	(7)	(8)	(9)	(10)	(11)	(12)
	Linear		Quadratic (bandwidth for p = 1)		Quadratic (bandwidth for p = 2)	
Elected (bias-corrected)	0.045	0.026	-0.005	-0.026	0.056	0.034
95% confidence interval (non-clustered)	[0.020, 0.070]	[-0.008, 0.060]	[-0.059, 0.048]	[-0.109, 0.056]	[0.035, 0.077]	[0.005, 0.063]
N	26221	14404	26221	14404	81696	42090
Bandwidth	0.72	0.40	0.72	0.40	2.20	1.11
Bias bandwidth	3.05	3.05	3.05	3.05	6.53	6.53
Bandwidth selection method	MSE	CER	MSE	CER	MSE	CER
Panel C: Bias-correction with main bandwidth equal to pilot bandwidth						
	(13)	(14)	(15)	(16)	(17)	(18)
	Linear		Quadratic (bandwidth for p = 1)		Quadratic (bandwidth for p = 2)	
Elected (bias-corrected)	0.020	-0.012	-0.005	-0.026	0.033	0.018
95% confidence interval (non-clustered)	[-0.017, 0.058]	[-0.067, 0.044]	[-0.059, 0.048]	[-0.109, 0.056]	[0.006, 0.060]	[-0.022, 0.058]
N	26221	14404	26221	14404	81696	42090
Bandwidth	0.72	0.40	0.72	0.40	2.20	1.11
Bias bandwidth	0.72	0.40	0.72	0.40	2.20	1.11
Bandwidth selection method	MSE	CER	MSE	CER	MSE	CER

Notes : Table shows estimated incumbency advantage using local polynomial regressions within various bandwidths. All estimations use a triangular kernel. Confidence intervals are computed using heteroskedasticity-robust standard errors. Unit of observation is a candidate *i* at year *t* .

Appendix F: Supplementary information to Section 4.3 (When is RDD as good as randomly assigned?)

This appendix reports the means tests of covariate balance within small bandwidths near the cutoff as well as a brief analysis of when RDD is as good as randomly assigned using the approach proposed by Cattaneo et al. (2015).

Means tests of covariate balance within small bandwidths near the cutoff

The tests reported below do not control for the slopes (or curvature) of the forcing variable nearby the cutoff. They are not tests of whether the covariates develop smoothly over the cutoff, but rather tests for whether the treatment is as good as randomly assigned. The sample that only includes the lotteries (i.e., when the neighborhood is degenerate at the cutoff), the randomization assumption is satisfied in our data. The subsample that we use to explore the plausibility of the randomization assumption excludes the randomized candidates.

Table F1 and **F2:** Table F1 looks at the covariate balance of candidate characteristics. It reports the means of the candidate characteristics for small bandwidths on both sides of the cutoff as well as a *t*-test for the difference of the means. For example, when incumbency status (elected at *t*-1) is used, we find that bandwidths 0.04 or smaller are as-good-as-random at the 5% significance level (923 observations). Based on a minimum *p*-value criterion among all the covariates (but not correcting for multiple testing), it seems that bandwidths 0.02 or smaller would be as-good-as random at the 5% significance level (128 observations). These numbers are obtained by starting from the zero bandwidth and widening the bandwidth until the first statistically significant coefficient is found. This is a conservative approach in the sense that if we started from wider bandwidths and decreased their length until no significant differences are found, we would get somewhat larger bandwidth estimates. For example, based on Table F1, a bandwidth of 0.05 would be as-good-as-random (but 0.10 or larger would not). Table F2 reproduces the analysis of Table F1 for municipality-level covariates. As the table shows, they are balanced, as they should be by construction.

Table F1. Covariate balance within small bandwidths (candidate characteristics).

Bandwidth = 0.01

	Elected (N = 37)			Not elected (N = 38)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	37	0.49	0.20	38	0.46	0.18	0.02
Number of votes	37	291	230	38	282	208	9
Female	37	0.49	0.51	38	0.47	0.51	0.01
Age	37	47.62	9.91	38	49.74	11.86	-2.12
Incumbent	37	0.41	0.50	38	0.55	0.50	-0.15
Municipal employee	37	0.43	0.50	38	0.37	0.49	0.06
Wage income	27	34676	17829	28	35972	21286	-1296
Capital income	27	1670	6528	28	1426	3137	244
High professional	37	0.49	0.51	38	0.34	0.48	0.14
Entrepreneur	37	0.08	0.28	38	0.05	0.23	0.03
Student	37	0.00	0.00	38	0.03	0.16	-0.03
Unemployed	37	0.03	0.16	38	0.00	0.00	0.03
University degree	33	0.30	0.47	32	0.22	0.42	0.08

Bandwidth = 0.05

	Elected (N = 729)			Not elected (N = 761)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	729	0.90	0.44	761	0.85	0.43	0.05
Number of votes	729	102	111	761	102	111	0
Female	729	0.41	0.49	761	0.37	0.48	0.04
Age	729	47.04	11.79	761	47.01	12.43	0.03
Incumbent	729	0.39	0.49	761	0.34	0.48	0.05
Municipal employee	729	0.30	0.46	761	0.26	0.44	0.03
Wage income	542	27672	17445	576	27397	18042	275
Capital income	542	5547	65197	576	1884	5972	3663
High professional	729	0.26	0.44	761	0.27	0.44	-0.01
Entrepreneur	729	0.17	0.37	761	0.18	0.38	-0.01
Student	729	0.02	0.15	761	0.03	0.17	-0.01
Unemployed	729	0.05	0.21	761	0.03	0.17	0.02
University degree	597	0.19	0.39	641	0.17	0.38	0.02

Bandwidth = 0.10

	Elected (N = 1778)			Not elected (N = 1906)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	1778	1.02	0.53	1906	0.95	0.50	0.07
Number of votes	1778	90	104	1906	87	101	3
Female	1778	0.38	0.49	1906	0.39	0.49	0.00
Age	1778	46.45	11.79	1906	46.47	11.94	-0.03
Incumbent	1778	0.36	0.48	1906	0.31	0.46	0.05**
Municipal employee	1778	0.27	0.45	1906	0.27	0.44	0.01
Wage income	1334	26729	17385	1437	27470	20890	-741
Capital income	1334	3635	42060	1437	3080	24308	556
High professional	1778	0.25	0.43	1906	0.25	0.43	0.00
Entrepreneur	1778	0.19	0.39	1906	0.19	0.39	0.00
Student	1778	0.02	0.14	1906	0.03	0.18	-0.01**
Unemployed	1778	0.04	0.20	1906	0.03	0.18	0.01
University degree	1466	0.19	0.39	1576	0.17	0.38	0.02

Bandwidth = 0.20

	Elected (N = 3508)			Not elected (N = 3891)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	3508	1.11	0.58	3891	0.98	0.54	0.12
Number of votes	3508	85	101	3891	81	96	5
Female	3508	0.36	0.48	3891	0.40	0.49	-0.03**
Age	3508	46.51	11.59	3891	46.17	12.02	0.34
Incumbent	3508	0.36	0.48	3891	0.29	0.45	0.07**
Municipal employee	3508	0.26	0.44	3891	0.27	0.44	0.00
Wage income	2610	26852	18849	2892	26414	21339	439
Capital income	2610	3068	30512	2892	3416	27048	-347
High professional	3508	0.24	0.43	3889	0.24	0.43	0.00
Entrepreneur	3508	0.21	0.40	3889	0.19	0.39	0.02
Student	3508	0.02	0.15	3889	0.03	0.18	-0.01*
Unemployed	3508	0.04	0.20	3889	0.04	0.19	0.00
University degree	2858	0.18	0.39	3201	0.17	0.38	0.01

Bandwidth = 0.30

	Elected (N = 5172)			Not elected (N = 5879)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	5172	1.16	0.62	5879	0.98	0.56	0.18*
Number of votes	5172	86	109	5879	77	91	9
Female	5172	0.36	0.48	5879	0.39	0.49	-0.03**
Age	5172	46.55	11.66	5879	46.28	12.05	0.27
Incumbent	5172	0.38	0.49	5879	0.28	0.45	0.10*
Municipal employee	5172	0.26	0.44	5879	0.26	0.44	0.00
Wage income	3829	26867	19027	4355	26305	20454	562
Capital income	3829	3131	26071	4355	3256	23362	-125
High professional	5172	0.23	0.42	5877	0.24	0.43	-0.01
Entrepreneur	5172	0.21	0.41	5877	0.19	0.39	0.03
Student	5172	0.02	0.15	5877	0.03	0.17	-0.01
Unemployed	5172	0.04	0.20	5877	0.04	0.20	0.00
University degree	4232	0.18	0.38	4832	0.17	0.38	0.01

Bandwidth = 0.40

	Elected (N = 6628)			Not elected (N = 7949)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	6628	1.19	0.63	7949	0.95	0.56	0.24**
Number of votes	6628	87	114	7949	76	89	11
Female	6628	0.36	0.48	7949	0.39	0.49	-0.03**
Age	6628	46.74	11.62	7949	46.19	12.18	0.55
Incumbent	6628	0.39	0.49	7949	0.26	0.44	0.13**
Municipal employee	6628	0.26	0.44	7949	0.25	0.43	0.01
Wage income	4909	26685	19495	5911	26144	19643	541
Capital income	4909	3187	23615	5911	2994	20907	193
High professional	6628	0.23	0.42	7947	0.24	0.42	-0.01
Entrepreneur	6628	0.21	0.41	7947	0.18	0.38	0.03*
Student	6628	0.02	0.15	7947	0.03	0.17	-0.01*
Unemployed	6628	0.04	0.20	7947	0.04	0.20	0.00
University degree	5402	0.18	0.38	6534	0.17	0.38	0.00

Bandwidth = 0.55

	Elected (N = 8710)			Not elected (N = 11348)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	8710	1.23	0.65	11348	0.92	0.56	0.32**
Number of votes	8710	87	113	11348	74	85	13
Female	8710	0.37	0.48	11348	0.40	0.49	-0.03**
Age	8710	46.77	11.56	11348	46.06	12.22	0.71*
Incumbent	8710	0.40	0.49	11348	0.24	0.43	0.16**
Municipal employee	8710	0.26	0.44	11348	0.25	0.43	0.01
Wage income	6468	26480	19009	8416	26115	19255	365
Capital income	6468	3315	23909	8416	2782	18532	533
High professional	8710	0.23	0.42	11345	0.24	0.42	-0.01
Entrepreneur	8710	0.22	0.41	11345	0.17	0.38	0.05**
Student	8710	0.02	0.15	11345	0.03	0.18	-0.01**
Unemployed	8710	0.04	0.20	11345	0.04	0.21	0.00
University degree	7091	0.17	0.38	9323	0.18	0.38	0.00

Bandwidth = 0.70

	Elected (N = 10632)			Not elected (N = 14888)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	10632	1.27	0.66	14888	0.87	0.56	0.40**
Number of votes	10632	87	112	14888	72	80	15
Female	10632	0.36	0.48	14888	0.40	0.49	-0.04**
Age	10632	46.84	11.50	14888	45.89	12.27	0.95**
Incumbent	10632	0.42	0.49	14888	0.21	0.41	0.21**
Municipal employee	10632	0.26	0.44	14888	0.25	0.43	0.01
Wage income	7876	26362	18766	10981	26203	26303	159
Capital income	7876	3505	23583	10981	2757	18799	748**
High professional	10631	0.22	0.42	14884	0.24	0.43	-0.01
Entrepreneur	10631	0.22	0.42	14884	0.17	0.38	0.06**
Student	10631	0.02	0.15	14884	0.03	0.18	-0.01**
Unemployed	10631	0.04	0.19	14884	0.04	0.21	-0.01
University degree	8634	0.17	0.37	12252	0.18	0.38	-0.01

Bandwidth = 1.00

	Elected (N = 14138)			Not elected (N = 23320)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Vote share	14138	1.34	0.69	23320	0.76	0.56	0.58**
Number of votes	14138	88	114	23320	66	71	22*
Female	14138	0.36	0.48	23320	0.41	0.49	-0.05**
Age	14138	47.01	11.40	23320	45.56	12.29	1.44**
Incumbent	14138	0.44	0.50	23320	0.17	0.37	0.27**
Municipal employee	14138	0.26	0.44	23320	0.25	0.43	0.01
Wage income	10438	26413	18889	17166	25903	23685	509
Capital income	10438	3691	24916	17166	2447	16276	1244***
High professional	14136	0.22	0.42	23314	0.24	0.42	-0.01
Entrepreneur	14136	0.23	0.42	23314	0.16	0.37	0.07**
Student	14136	0.23	0.15	23314	0.04	0.19	-0.01**
Unemployed	14136	0.23	0.19	23314	0.05	0.21	-0.01**
University degree	11490	0.23	0.38	19252	0.18	0.38	-0.01

Notes: * and ** denote 5 % and 1 % statistical significance of difference in means respectively. The significance of differences is tested using t test adjusted for clustering by municipality. 0.55 bandwidth equals roughly the optimal bandwidth chosen using Imbens and Kalyanaraman's (2008) algorithm. Sample includes only candidates running in 1996-2008 elections. Lotteries have been excluded. In 1996 elections income data are available only for candidates who run also in 2000, 2004 and 2008 elections. Income is expressed in euros.

Table F1 (continued). Covariate balance within small bandwidths (candidate characteristics).

Bandwidth = 0.01	Elected (N = 37)			Not elected (N = 38)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	37	0.32	0.47	38	0.34	0.48	-0.02
Social Democrats	37	0.32	0.47	38	0.32	0.47	0.01
Center Party	37	0.11	0.31	38	0.11	0.31	0.00
True Finns	37	0.00	0.00	38	0.00	0.00	0.00
Green Party	37	0.11	0.31	38	0.11	0.31	0.00
Socialist Party	37	0.08	0.28	38	0.08	0.27	0.00
Swedish Party	37	0.05	0.23	38	0.05	0.23	0.00
Christian Party	37	0.00	0.00	38	0.00	0.00	0.00
Other parties	37	0.00	0.00	38	0.00	0.00	0.00

Bandwidth = 0.05	Elected (N = 729)			Not elected (N = 761)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	729	0.18	0.38	761	0.18	0.38	0.00
Social Democrats	729	0.27	0.44	761	0.28	0.45	-0.01
Center Party	729	0.40	0.49	761	0.40	0.49	0.01
True Finns	729	0.00	0.04	761	0.00	0.04	0.00
Green Party	729	0.02	0.14	761	0.02	0.14	0.00
Socialist Party	729	0.04	0.20	761	0.04	0.19	0.00
Swedish Party	729	0.07	0.26	761	0.07	0.25	0.00
Christian Party	729	0.00	0.05	761	0.00	0.06	0.00
Other parties	729	0.02	0.12	761	0.01	0.12	0.00

Bandwidth = 0.10	Elected (N = 1778)			Not elected (N = 1906)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	1778	0.19	0.39	1906	0.18	0.39	0.00
Social Democrats	1778	0.24	0.43	1906	0.25	0.43	0.00
Center Party	1778	0.41	0.49	1906	0.41	0.49	0.00
True Finns	1778	0.00	0.06	1906	0.00	0.06	0.00
Green Party	1778	0.02	0.15	1906	0.02	0.15	0.00
Socialist Party	1778	0.06	0.23	1906	0.05	0.22	0.01
Swedish Party	1778	0.06	0.23	1906	0.05	0.23	0.00
Christian Party	1778	0.00	0.06	1906	0.00	0.07	0.00
Other parties	1778	0.02	0.14	1906	0.02	0.14	0.00

Bandwidth = 0.20	Elected (N = 3508)			Not elected (N = 3891)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	3508	0.18	0.39	3891	0.19	0.39	-0.01
Social Democrats	3508	0.24	0.43	3891	0.25	0.43	-0.01
Center Party	3508	0.41	0.49	3891	0.39	0.49	0.01
True Finns	3508	0.01	0.07	3891	0.01	0.07	0.00
Green Party	3508	0.02	0.15	3891	0.02	0.15	0.00
Socialist Party	3508	0.06	0.23	3891	0.05	0.23	0.00
Swedish Party	3508	0.06	0.24	3891	0.06	0.24	0.00
Christian Party	3508	0.01	0.08	3891	0.01	0.08	0.00
Other parties	3508	0.02	0.14	3891	0.02	0.14	0.00

Bandwidth = 0.30	Elected (N = 5172)			Not elected (N = 5879)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	5172	0.19	0.39	5879	0.19	0.40	-0.01
Social Democrats	5172	0.24	0.42	5879	0.25	0.43	-0.01
Center Party	5172	0.40	0.49	5879	0.38	0.49	0.02
True Finns	5172	0.01	0.08	5879	0.01	0.08	0.00
Green Party	5172	0.02	0.15	5879	0.02	0.15	0.00
Socialist Party	5172	0.06	0.23	5879	0.06	0.23	0.00
Swedish Party	5172	0.06	0.24	5879	0.06	0.23	0.00
Christian Party	5172	0.01	0.09	5879	0.01	0.10	0.00
Other parties	5172	0.02	0.14	5879	0.02	0.15	0.00

Bandwidth = 0.40	Elected (N = 6628)			Not elected (N = 7949)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	6628	0.18	0.39	7949	0.19	0.39	-0.01
Social Democrats	6628	0.23	0.42	7949	0.26	0.44	-0.02
Center Party	6628	0.41	0.49	7949	0.38	0.48	0.03
True Finns	6628	0.01	0.09	7949	0.01	0.08	0.00
Green Party	6628	0.02	0.14	7949	0.03	0.16	0.00
Socialist Party	6628	0.06	0.24	7949	0.06	0.23	0.00
Swedish Party	6628	0.06	0.23	7949	0.05	0.23	0.00
Christian Party	6628	0.01	0.10	7949	0.01	0.10	0.00
Other parties	6628	0.02	0.15	7949	0.02	0.15	0.00

Bandwidth = 0.55	Elected (N = 8710)			Not elected (N = 11348)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	8710	0.18	0.39	11348	0.20	0.40	-0.01
Social Democrats	8710	0.23	0.42	11348	0.26	0.44	-0.03
Center Party	8710	0.40	0.49	11348	0.36	0.48	0.04
True Finns	8710	0.01	0.09	11348	0.01	0.09	0.00
Green Party	8710	0.02	0.14	11348	0.03	0.16	-0.01
Socialist Party	8710	0.06	0.24	11348	0.06	0.23	0.00
Swedish Party	8710	0.06	0.24	11348	0.05	0.22	0.01
Christian Party	8710	0.01	0.10	11348	0.01	0.10	0.00
Other parties	8710	0.02	0.15	11348	0.02	0.15	0.00

Bandwidth = 0.70	Elected (N = 10632)			Not elected (N = 14888)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	10632	0.18	0.38	14888	0.20	0.40	-0.02
Social Democrats	10632	0.23	0.42	14888	0.27	0.44	0.04
Center Party	10632	0.41	0.49	14888	0.35	0.48	0.06
True Finns	10632	0.01	0.09	14888	0.01	0.08	0.00
Green Party	10632	0.02	0.14	14888	0.03	0.17	-0.01
Socialist Party	10632	0.06	0.24	14888	0.06	0.23	0.01
Swedish Party	10632	0.06	0.24	14888	0.05	0.22	0.01
Christian Party	10632	0.01	0.10	14888	0.01	0.10	0.00
Other parties	10632	0.02	0.15	14888	0.02	0.15	0.00

Bandwidth = 1.00	Elected (N = 14138)			Not elected (N = 23320)			
Variable	N	Mean	Std. dev.	N	Mean	Std. dev.	Difference
Coalition Party	14138	0.17	0.38	23320	0.21	0.41	-0.04
Social Democrats	14138	0.22	0.42	23320	0.29	0.45	-0.06*
Center Party	14138	0.42	0.49	23320	0.33	0.47	0.09*
True Finns	14138	0.01	0.09	23320	0.01	0.09	0.00
Green Party	14138	0.02	0.14	23320	0.03	0.18	-0.01
Socialist Party	14138	0.06	0.24	23320	0.06	0.23	0.01
Swedish Party	14138	0.06	0.24	23320	0.05	0.22	0.01
Christian Party	14138	0.01	0.11	23320	0.01	0.09	0.00
Other parties	14138	0.02	0.15	23320	0.02	0.14	0.00

Notes: * and ** denote 5 % and 1 % statistical significance of difference in means respectively. The significance of differences is tested using t test adjusted for clustering by municipality. 0.55 bandwidth equals roughly the optimal bandwidth chosen using Imbens and Kalyanaraman's (2008) algorithm. Sample includes only candidates running in 1996-2008 elections. Lotteries have been excluded. In 1996 elections income data are available only for candidates who run also in 2000, 2004 and 2008 elections. Income is expressed in euros.

Table F2. Covariate balance within small bandwidths (municipality characteristics).

Bandwidth = 0.01

Variable	Elected (N = 37) N	Mean	Std. dev.	Not elected (N = 38) N	Mean	Std. dev.	Difference
Total number of votes	37	85715	91807	38	81938	84156	3777
Coalition Party seat share	37	25.45	8.06	38	25.88	7.72	-0.42
Social Democrats seat share	37	24.72	7.91	38	24.62	7.11	0.11
Center Party seat share	37	13.84	17.27	38	12.52	15.01	1.32
True Finns seat share	37	1.68	3.14	38	1.46	2.71	0.21
Green Party seat share	37	10.72	7.85	38	10.48	7.44	0.24
Socialist Party seat share	37	9.68	6.17	38	10.19	6.11	-0.50
Swedish Party seat share	37	6.99	14.64	38	7.41	14.76	-0.41
Christian Party seat share	37	3.47	1.83	38	3.56	1.73	-0.08
Other parties' seat share	37	3.46	4.57	38	3.93	4.64	-0.47
Voter turnout	36	57.33	5.43	37	57.17	5.10	0.16
Population	37	190585	204484	38	182109	190372	8477
Share of 0-14-year-olds	36	16.85	2.72	37	16.73	2.39	0.12
Share of 15-64-year-olds	36	68.61	2.55	37	68.75	2.27	-0.14
Share of over-65-year-olds	36	14.54	3.01	37	14.52	2.68	0.02
Income per capita	36	23360	6682	37	23337	6347	23
Unemployment	37	13.63	7.06	38	13.34	6.58	0.29

Bandwidth = 0.05

Variable	Elected (N = 729) N	Mean	Std. dev.	Not elected (N = 761) N	Mean	Std. dev.	Difference
Total number of votes	729	20538	38928	761	21816	40254	-1278
Coalition Party seat share	729	19.88	10.11	761	20.28	10.02	-0.40
Social Democrats seat share	729	23.57	11.09	761	23.80	10.72	-0.23
Center Party seat share	729	27.84	21.17	761	27.21	20.81	0.63
True Finns seat share	729	1.67	3.13	761	1.70	3.41	-0.03
Green Party seat share	729	4.73	5.32	761	4.90	5.37	-0.16
Socialist Party seat share	729	9.42	7.76	761	9.25	7.46	0.17
Swedish Party seat share	729	5.58	17.11	761	5.61	16.78	-0.04
Christian Party seat share	729	3.72	3.47	761	3.92	3.73	-0.20
Other parties' seat share	729	3.34	6.16	761	3.22	5.97	0.11
Voter turnout	711	60.49	6.20	746	60.27	6.40	0.22
Population	720	44984	87091	750	48014	89200	-3030
Share of 0-14-year-olds	711	18.25	3.38	741	18.13	3.22	0.12
Share of 15-64-year-olds	711	65.48	3.10	741	65.64	3.09	-0.16
Share of over-65-year-olds	711	16.27	4.10	741	16.23	4.12	0.04
Income per capita	711	20848	5875	741	21072	5823	-224
Unemployment	720	14.05	6.10	750	13.79	5.96	0.27

Bandwidth = 0.10

Variable	Elected (N = 1778) N	Mean	Std. dev.	Not elected (N = 1906) N	Mean	Std. dev.	Difference
Total number of votes	1778	17428	36257	1906	18328	37762	-901
Coalition Party seat share	1778	19.47	10.24	1906	19.68	10.22	-0.20
Social Democrats seat share	1778	22.61	10.89	1906	22.80	10.65	-0.19
Center Party seat share	1778	30.78	21.57	1906	30.38	21.31	0.40
True Finns seat share	1778	1.78	3.63	1906	1.86	3.81	-0.08
Green Party seat share	1778	4.14	5.10	1906	4.20	5.20	-0.07
Socialist Party seat share	1778	9.03	7.82	1906	8.84	7.66	0.19
Swedish Party seat share	1778	4.99	15.85	1906	5.03	15.87	-0.04
Christian Party seat share	1778	3.54	3.60	1906	3.70	3.74	-0.16
Other parties' seat share	1778	3.52	6.39	1906	3.43	6.23	0.09
Voter turnout	1747	61.36	6.41	1872	61.38	6.47	-0.02
Population	1765	37731	79644	1885	39837	82836	-2105
Share of 0-14-year-olds	1750	18.34	3.31	1871	18.25	3.25	0.09
Share of 15-64-year-olds	1750	64.99	3.20	1871	65.05	3.22	-0.06
Share of over-65-year-olds	1750	16.67	4.36	1871	16.70	4.38	-0.03
Income per capita	1750	20478	5760	1871	20594	5769	-116
Unemployment	1765	13.91	6.00	1885	13.75	5.94	0.16

Bandwidth = 0.20

Variable	Elected (N = 3508) N	Mean	Std. dev.	Not elected (N = 3891) N	Mean	Std. dev.	Difference
Total number of votes	3508	15371	33726	3891	17537	38594	-2166
Coalition Party seat share	3508	19.01	10.43	3891	19.25	10.42	-0.24
Social Democrats seat share	3508	22.31	10.97	3891	22.64	10.87	-0.33
Center Party seat share	3508	31.80	21.41	3891	30.83	21.29	0.97
True Finns seat share	3508	1.65	3.48	3891	1.73	3.72	-0.08
Green Party seat share	3508	3.79	4.95	3891	3.99	5.13	-0.20
Socialist Party seat share	3508	8.82	7.84	3891	8.88	7.77	-0.06
Swedish Party seat share	3508	5.31	16.44	3891	5.38	16.51	-0.08
Christian Party seat share	3508	3.49	3.78	3891	3.52	3.72	-0.03
Other parties' seat share	3508	3.56	6.61	3891	3.62	6.65	-0.06
Voter turnout	3455	61.93	6.48	3833	61.76	6.47	0.18
Population	3490	33380	74698	3865	38006	84731	-4626
Share of 0-14-year-olds	3462	18.38	3.25	3836	18.28	3.23	0.10
Share of 15-64-year-olds	3462	64.73	3.20	3836	64.89	3.24	-0.16
Share of over-65-year-olds	3462	16.89	4.42	3836	16.84	4.41	0.06
Income per capita	3462	20213	5801	3836	20328	5637	-115
Unemployment	3490	13.98	6.06	3865	13.93	6.03	0.05

Bandwidth = 0.30

Variable	Elected (N = 5172) N	Mean	Std. dev.	Not elected (N = 5879) N	Mean	Std. dev.	Difference
Total number of votes	5172	15217	34682	5879	17398	38557	-2180
Coalition Party seat share	5172	18.89	10.39	5879	19.24	10.40	-0.35
Social Democrats seat share	5172	22.15	10.93	5879	22.59	10.89	-0.44
Center Party seat share	5172	32.38	21.35	5879	31.12	21.28	1.26
True Finns seat share	5172	1.66	3.54	5879	1.72	3.70	-0.06
Green Party seat share	5172	3.69	4.93	5879	3.93	5.09	-0.24
Socialist Party seat share	5172	8.69	7.80	5879	8.79	7.75	-0.11
Swedish Party seat share	5172	5.36	16.74	5879	5.32	16.39	0.04
Christian Party seat share	5172	3.46	3.72	5879	3.49	3.65	-0.03
Other parties' seat share	5172	3.53	6.57	5879	3.64	6.63	-0.11
Voter turnout	5100	62.12	6.53	5799	61.87	6.53	0.25
Population	5145	33041	76681	5842	37734	84822	-4693
Share of 0-14-year-olds	5103	18.34	3.25	5798	18.26	3.22	0.08
Share of 15-64-year-olds	5103	64.64	3.23	5798	64.83	3.28	-0.19
Share of over-65-year-olds	5103	17.02	4.48	5798	16.90	4.45	0.11
Income per capita	5103	20078	5719	5798	20259	5655	-181
Unemployment	5145	13.99	6.05	5842	13.97	6.01	0.02

Bandwidth = 0.40

Variable	Elected (N = 6628) N	Mean	Std. dev.	Not elected (N = 7949) N	Mean	Std. dev.	Difference
Total number of votes	6628	15007	35009	7949	18142	40267	-3135
Coalition Party seat share	6628	18.62	10.40	7949	19.30	10.37	-0.68
Social Democrats seat share	6628	21.89	10.94	7949	22.74	10.91	-0.84
Center Party seat share	6628	33.09	21.44	7949	31.06	21.28	2.03
True Finns seat share	6628	1.68	3.60	7949	1.70	3.68	-0.02
Green Party seat share	6628	3.60	4.92	7949	4.01	5.19	-0.41
Socialist Party seat share	6628	8.68	7.81	7949	8.80	7.69	-0.12
Swedish Party seat share	6628	5.28	16.68	7949	5.10	15.90	0.18
Christian Party seat share	6628	3.43	3.71	7949	3.51	3.64	-0.07
Other parties' seat share	6628	3.53	6.67	7949	3.64	6.69	-0.11
Voter turnout	6536	62.26	6.54	7836	61.82	6.51	0.44
Population	6597	32631	77601	7899	39354	88720	-6722
Share of 0-14-year-olds	6543	18.38	3.27	7838	18.25	3.22	0.12
Share of 15-64-year-olds	6543	64.58	3.24	7838	64.87	3.28	-0.30
Share of over-65-year-olds	6543	17.05	4.47	7838	16.88	4.41	0.17
Income per capita	6543	19989	5725	7838	20310	5702	-320
Unemployment	6597	14.05	6.12	7899	13.96	6.00	0.08

Bandwidth = 0.55

Variable	Elected (N = 8710) N	Mean	Std. dev.	Not elected (N = 11348) N	Mean	Std. dev.	Difference
Total number of votes	8710	14284	33359	11348	19657	43620	-5373
Coalition Party seat share	8710	18.43	10.47	11348	19.54	10.39	-1.11
Social Democrats seat share	8710	21.76	11.00	11348	22.90	10.90	-1.13
Center Party seat share	8710	33.42	21.52	11348	30.68	21.35	2.74
True Finns seat share	8710	1.68	3.70	11348	1.70	3.67	-0.02
Green Party seat share	8710	3.51	4.82	11348	4.19	5.39	-0.68
Socialist Party seat share	8710	8.67	7.79	11348	8.82	7.60	-0.14
Swedish Party seat share	8710	5.45	17.10	11348	4.95	15.36	0.49
Christian Party seat share	8710	3.37	3.71	11348	3.48	3.62	-0.11
Other parties' seat share	8710	3.53	6.68	11348	3.60	6.62	-0.07
Voter turnout	8590	62.39	6.57	11183	61.76	6.51	0.63
Population	8672	30986	73934	11284	42703	95855	-11717
Share of 0-14-year-olds	8606	18.37	3.30	11191	18.20	3.22	0.17
Share of 15-64-year-olds	8606	64.48	3.25	11191	64.94	3.34	-0.46
Share of over-65-year-olds	8606	17.14	4.52	11191	16.86	4.45	0.28
Income per capita	8606	19941	5669	11191	20339	5731	-398
Unemployment	8672	14.03	6.09	11284	13.96	6.02	0.06

Bandwidth = 0.70

Variable	Elected (N = 10632) N	Mean	Std. dev.	Not elected (N = 14888) N	Mean	Std. dev.	Difference
Total number of votes	10632	13755	32233	14888	22049	48155	-8295
Coalition Party seat share	10632	18.25	10.51	14888	19.75	10.40	-1.50
Social Democrats seat share	10632	21.61	11.04	14888	22.98	10.83	-1.37
Center Party seat share	10632	33.86	21.66	14888	30.06	21.42	3.81
True Finns seat share	10632	1.70	3.76	14888	1.70	3.63	0.00
Green Party seat share	10632	3.42	4.75	14888	4.45	5.61	-1.03
Socialist Party seat share	10632	8.64	7.83	14888	8.89	7.55	-0.24
Swedish Party seat share	10632	5.43	17.13	14888	4.91	15.05	0.52
Christian Party seat share	10632	3.36	3.69	14888	3.48	3.59	-0.11
Other parties' seat share	10632	3.52	6.67	14888	3.62	6.64	-0.10
Voter turnout	10477	62.49	6.57	14669	61.59	6.49	0.90
Population	10588	29837	71416	14805	47990	105723	-18153
Share of 0-14-year-olds	10498	18.38	3.29	14680	18.18	3.22	0.20
Share of 15-64-year-olds	10498	64.42	3.23	14680	65.09	3.37	-0.67
Share of over-65-year-olds	10498	17.20	4.51	14680	16.73	4.42	0.47
Income per capita	10498	19848	5652	14680	20432	5798	-585
Unemployment	10588	14.07	6.09	14805	13.94	6.01	0.13

Bandwidth = 1.00

Variable	Elected (N = 14138) N	Mean	Std. dev.	Not elected (N = 23320) N	Mean	Std. dev.	Difference
Total number of votes	14138	13094	30932	23320	26432	53737	-13338*
Coalition Party seat share	14138	18.16	10.48	23320	20.46	10.25	-2.31
Social Democrats seat share	14138	21.46	11.11	23320	23.39	10.63	-1.93
Center Party seat share	14138	34.37	21.75	23320	28.52	21.24	5.85
True Finns seat share	14138	1.72	3.80	23320	1.69	3.55	0.03
Green Party seat share	14138	3.28	4.66	23320	4.99	5.97	-1.72*
Socialist Party seat share	14138	8.57	7.80	23320	8.94	7.47	-0.38
Swedish Party seat share	14138	5.42	17.23	23320	4.79	14.45	0.63
Christian Party seat share	14138	3.36	3.73	23320	3.47	3.41	-0.11
Other parties' seat share	14138	3.48	6.84	23320	3.60	6.56	-0.12
Voter turnout	13937	62.66	6.59	22978	61.12	6.41	1.54
Population	14075	28404	68622	23190	57594	118321	-29190*
Share of 0-14-year-olds	13966	18.39	3.29	23001	18.08	3.18	0.31
Share of 15-64-year-olds	13966	64.32	3.22	23001	65.40	3.43	-1.08*
Share of over-65-year-olds	13966	17.29	4.51	23001	16.51	4.36	0.77
Income per capita	13966	19758	5631	23001	20716	5904	-958
Unemployment	14075	14.08	6.09	23190	13.82	5.98	0.26

Notes: * and ** denote 5 % and 1 % statistical significance of difference in means respectively. The significance of differences is tested using t test adjusted for clustering by municipality. 0.55 bandwidth equals roughly the optimal bandwidth chosen using Imbens and Kalyanaraman's (2008) algorithm. Sample includes only data for 1996-2008 elections. Income per capita is expressed in euros.

When is RDD as good as randomly assigned?

The recent literature emphasizes that the local randomization assumption is distinct from the key RDD assumption of no discontinuity in the conditional expectation function of potential outcome. The local randomization assumption is more stringent and not required for RDD. Which of these assumptions is invoked has implications on how to estimate the treatment effect of interest and how to test for the validity of the design (see e.g. de la Cuesta and Imai 2016).

Inspired by the approach proposed by Cattaneo et al. (2015), we explore the largest bandwidth in which the as-good-as-random assumption holds and then compare the sample means of the outcome variable across the cutoff. To determine the largest bandwidth in which the as-good-as-random assumption holds, we either look at the most important covariate or the minimum *p*-value among all the covariates. According to Eggers et al. (2015), incumbency status (elected at *t*–1) is a reasonable measure of candidate quality. If we use it, bandwidths 0.04 or smaller are as-good-as-random at the 5% significance level (923 non-experimental observations; see Table F1 above). Based on the minimum *p*-value among all the covariates (but not correcting for multiple testing), it seems that bandwidths 0.02 or smaller would be as-good-as random at the 5% significance level (128 observations; again see Table F1 above). These findings indicate that the approach proposed by Cattaneo et al. (2015) leads to rather conservative (small) samples in light of our other RDD findings. This is partly due to not correcting for multiple testing and partly due to the fact that in our election data, many covariates have rather steep slopes with respect to the forcing variable.

It seems that the approach proposed by Cattaneo et al. (2015) is able to reproduce the experimental estimate: When we use these conservative bandwidths, there is no statistically significant difference in the means of getting elected at *t*+1 elections around the cutoff: The difference is 0.010 (*p*-value 0.32) for the bandwidth of 0.04 and 0.064 (*p*-value 0.75) for the bandwidth of 0.02. However, the smaller bandwidth of 0.02 results in a sample too small to be informative. In that case, the insignificance result arises from the large standard error rather than from a smaller point-estimate. Note that we do not resort here to the randomization inference method proposed by Cattaneo et al. (2015), because we have quite a lot of observations within the two as-good-as-random bandwidths that we consider (see Cattaneo et al. 2016 for a Stata implementation of the randomization inference method).

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