Online Appendix

The National Effects of Subnational Representation: Access to Regional Parliaments and National Electoral Performance*

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Abstract

According to scholarly wisdom, party competition at the subnational level plays a negligible role in national elections. We provide theory and evidence that qualifies this view. Subnational elections determine entrance into subnational parliaments, which provides essential organizational resources: members and money. Since in most cases the same political actors compete at all levels of government, they can make use of these resources to improve their status in national party competition. We test our argument exploiting two institutional features of the German multi-level electoral context: the discontinuities generated by the five percent electoral threshold in German state elections, and the occurance of German state elections at different times in the federal election cycle. We find that parties that marginally cross the threshold for state parliamentary representation gain more members, and eventually perform better in national elections, but only if the party has sufficient time to organize between the state and the federal election. Consistent with our organizational explanation, bottom-up effects are more pronounced where state parliamentary parties receive more financial resources. Alternative mechanisms are tested, and receive no empirical support.

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Appendix

Randomization Inference

To determine the window in which the localized random assignment assumption holds, we test for sequentially nested windows whether any covariate imbalances between parties that marginally cross the 5%-threshold (the treated observations) and parties that marginally do not enter parliament (the untreated observations) are greater than those we would expect to occur from sampling variability alone (Cattaneo, Frandsen and Titiunik 2013). For the general analysis, we first extract the f-statistic regressing parliamentary presence on the following pre-treatment covariates: state vote share at time t-1, state election year, FDP, Green Party, and state dummies. For party membership the following covariates are available: party membership at time t-1, year, FDP, Green Party, and state dummies. We then compare the resulting f-statistic to the mean of the f-statistics we obtain after simulating local random assignment around the 5%-threshold within the chosen window 5.000 times. The sampling distribution of any test statistic (in our case the f-statistic) can be approximated by a large random sample of all possible local random assignments. The collection of f-statistics hence "represents the exact sampling distribution under the null hypothesis that no covariates have any effect on the assigned treatment" (Gerber and Green 2012, 107). The resulting p-value indicates whether we can reject the sharp null hypothesis that the covariates taken together have no effect on localized treatment assignment within the chosen window. A low p-value would therefore indicate that we can reject that imbalances could have occurred due to sampling variability. We choose a conservative significance level of $\alpha = 0.15$ to test whether the local randomization assumption is rejected in each window. We start at a 0.5 percentage points window on each side of the threshold, and raise it sequentially by .1 percentage points on either side of the threshold testing symmetric windows of 0.5, 0.6, 0.7 percentage points and so forth until the sharp null hypothesis is rejected with a p-value lower than 0.15. The detailed results of this exercise are shown in (Table A.1).

For the analysis we follow the procedure outlined in Ho and Imai (2006) and in Gerber and Green (2012). We first calculate the differences-in-means between treated and untreated observations (within the chosen window for which the local randomization assumption holds) using the observations in our existing data set. In order to see if estimated differences in the outcome variable could simply be due to sampling variability, we simulate 5.000 hypothetical local randomization outcomes around the 5%-threshold under the assumption of the "sharp null hypothesis" that the LATE is zero for all units.

Under the sharp-null missing outcomes are equal to the observed outcomes (Gerber and Green 2012, 62). We then go on to compare the differences-in-means estimate that we received from our data to the mean of all differences-in-means estimates over 5.000 hypothetical local randomization outcomes under the assumption of no treatment effect for no observation. To construct 95% confidence intervals we approximate the full schedule of potential outcomes assuming a localized version of SUTVA and that the treatment effect is the same for all observations directly surrounding the 5% threshold (Cattaneo, Frandsen and Titiunik 2013). Adapting the method of forming confidence intervals outlined in Gerber and Green to local quasi random assignment, for observations within the window below the threshold, missing "treated" values are imputed by adding the estimated LATE to the observed untreated values (2012, 66f). For treated observations, missing "untreated" values are imputed by substracting the estimated LATE from the observed treated values. We then list the estimated LATE from each local randomization in ascending order, where the 2.5th percentile marks the bottom of the 95% confidence interval, and the estimate at the 97.5th percentile marks the top (ibid). The interpretation of this confidence interval is that if we imagine a series of hypothetical reruns of our state elections under identical conditions, 95 out of 100 local randomized outcomes in the window directly surrounding the threshold will generate intervals that bracket the true LATE.

Table A.1: Randomization Inference Window Test
(Cut-Off p $\leq$ .15; chosen window in bold)

% on each side	0.5%	0.6%	0.7%	0.8%	0.9%	1.0%	1.1%	1.2%	1.3%	1.4%	1.5%	1.6%	1.7%
Balance test: Full sample													
P-values	0.385	0.297	**0.191**	0.078	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N [treated]	41	50	50	58	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N [control]	32	32	44	44	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Balance test: # days $\leq$ 870													
P-values	0.216	**0.163**	0.143	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
N [treated]	27	35	35	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N [control]	19	19	26	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Balance test: # days > 870													
P-values	0.758	0.666	0.746	0.562	0.698	0.328	**0.328**	0.146	n/a	n/a	n/a	n/a	n/a
N [treated]	13	14	14	17	17	23	23	23	n/a	n/a	n/a	n/a	n/a
N [control]	12	12	17	17	21	23	23	28	n/a	n/a	n/a	n/a	n/a
Balance test: Party membership													
P-values	0.477	0.252	0.190	0.289	0.403	0.264	0.415	0.455	0.351	0.351	0.289	**0.157**	0.145
N [treated]	12	16	19	22	22	23	27	28	32	32	32	34	36
N [control]	6	7	7	7	11	13	13	13	15	15	20	22	22

The entries in the top of every section denote the p-value associated with the sharp-null stemming from balance tests across sequential windows around the 5% threshold.

Table A.2: Main Analysis with Fixed Effects

	Year	Party	State	Year × Party	Year × State	State × Party
			IK Bandwidth ($h = 5.48$)			
Treatment	1.809**	1.408**	1.705**	1.417**	2.631**	1.814**
Effect	(0.701)	(0.679)	(0.857)	(0.652)	(0.960)	(0.789)
n	445	445	445	445	445	445
			Half-IK Bandwidth ($h = 2.74$)			
Treatment	1.311	1.442	0.924	1.195	3.814	2.111*
Effect	(0.963)	(0.947)	(1.317)	(1.235)	(2.182)	(1.123)
n	155	155	155	155	155	155
			Double-IK Bandwidth ($h = 10.96$)			
Treatment	1.885**	1.519**	1.891**	1.504**	2.475**	1.842**
Effect	(0.660)	(0.630)	(0.770)	(0.587)	(0.861)	(0.726)
n	445	445	445	445	445	445

Note: The entries denote the treatment effect (τ) of entering the state parliament on the party's vote share in the same state in the next federal election. The heading of each column denotes the type of fixed effects included in the analysis. In all models, standard errors are clustered at the state-election level. *p<.10; **p<.05, two-tailed tests.

Table A.3: State Parliamentary Representation and Seats Gained in the Next Federal Election

	Full Sample	Below Median	Above Median
		IK Bandwidth	
Treatment Effect	2.943 (1.261)**	0.546 (1.562)	4.758 (2.579)*
95% CIs	[0.471—5.415]	[-2.516—3.608]	[-0.297—9.813]
Bandwidth (h)	4.82	3.51	5.02
n [treated]	455	202	193
n [control]	1741	285	1144
		Half-IK Bandwidth	
Treatment Effect	2.157 (1.627)	0.724 (1.731)	5.325 (3.520)
CIs	[-1.032—5.346]	[-2.669–4.117]	[-1.574—12.224]
Bandwidth (h)	2.41	1.75	2.51
n [treated]	288	106	124
n [control]	332	104	148
		Double-IK Bandwidth	
Treatment Effect	3.400 (1.136)**	2.630 (1.310)**	4.332 (2.270)*
CIs	[-1.173—5.627]	[0.621–5.197]	[-0.117—8.781]
Bandwidth (h)	9.64	7.02	10.04
n [treated]	468	253	193
n [control]	2696	1316	1144
		Fixed Bandwidth ($h = 4$)	
Treatment Effect	2.640 (1.359)*	1.024 (1.498)	5.130 (2.875)*
CIs	[-0.024—5.304]	[-1.912–3.961]	[-0.505—10.765]
Bandwidth (h)	4	4	4
n [treated]	404	218	166
n [control]	717	364	294
		Placebo Outcome, $V_{s,t-1}$: # days > 870	
	IK bandwidth	Half-IK Bandwidth	Double-IK Bandwidth
Treatment Effect	1.662 (1.719)	0.836 (2.093)	2.217 (1.623)
CIs	[-1.707—5.031]	[-3.266—4.938]	[-0.964—5.398]
Bandwidth (h)	5.06	2.53	10.12
n [treated]	192	124	192
n [control]	1124	143	1124

Note: The table replicates Table 1 of the main text, using number of seats obtained in the same state in the next federal election as the dependent variable. Estimation and interpretation follow the logic explicated in the main text. *p<.10; **p<.05, two-tailed tests.

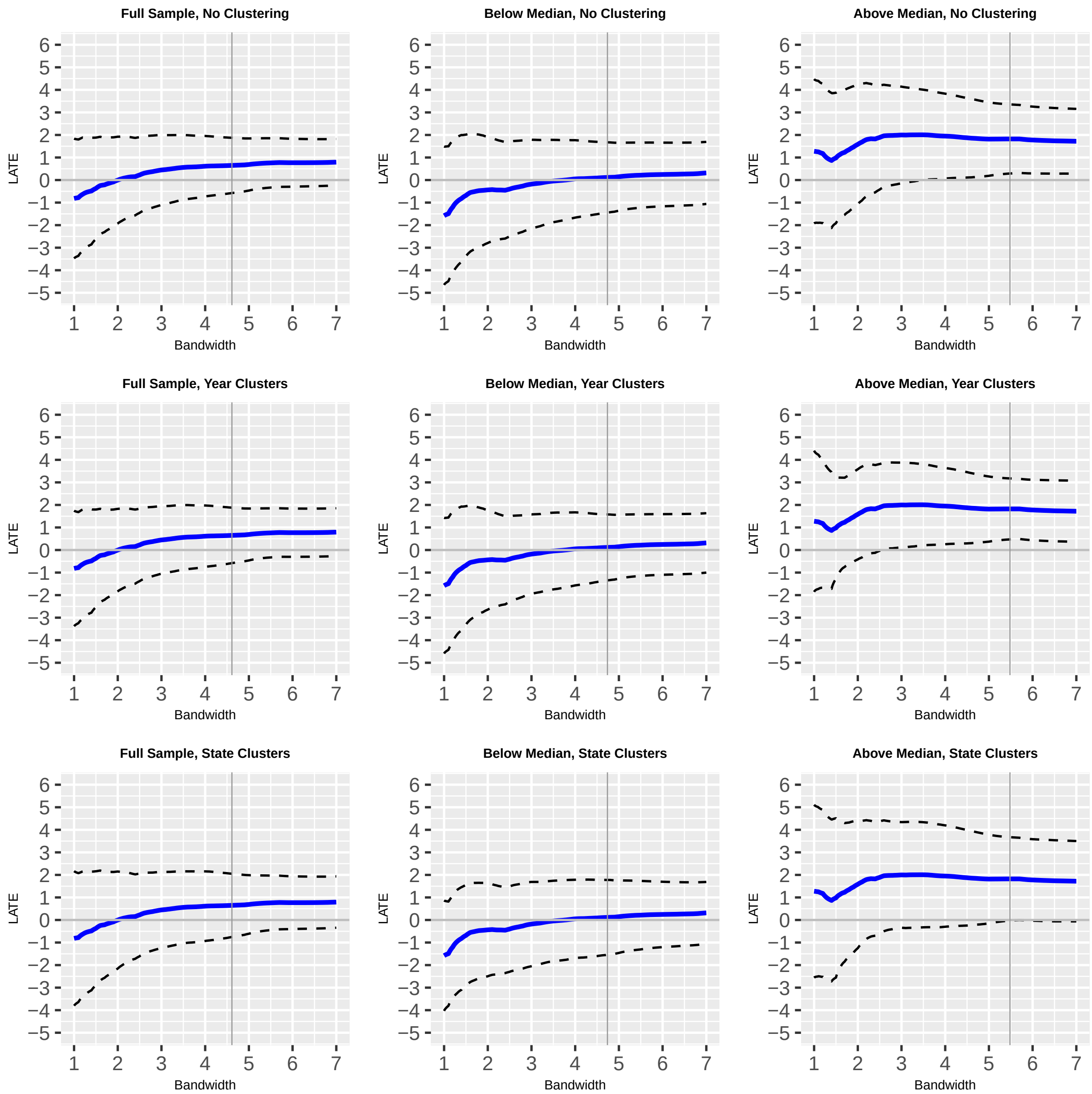

Figure A.1: Replicating the Main Analysis using Alternative Error Structures: No clustering, Year- and State-clustering.

Note: The solid black line in each graph denotes the local average treatment effect across different bandwidths, as denoted in the horizontal axis. The dashed curves denote the 95% CIs and the vertical dashed line indicates the IK bandwidth. The first row uses no clustering; the second clusters errors at the state election year level whereas the third column uses state-level clusters. The first column includes all observations. The second column includes only those observations in which the distance between state and federal election is below the median (851 days). The third column looks at observations in which the distance between state and federal election is above the median.

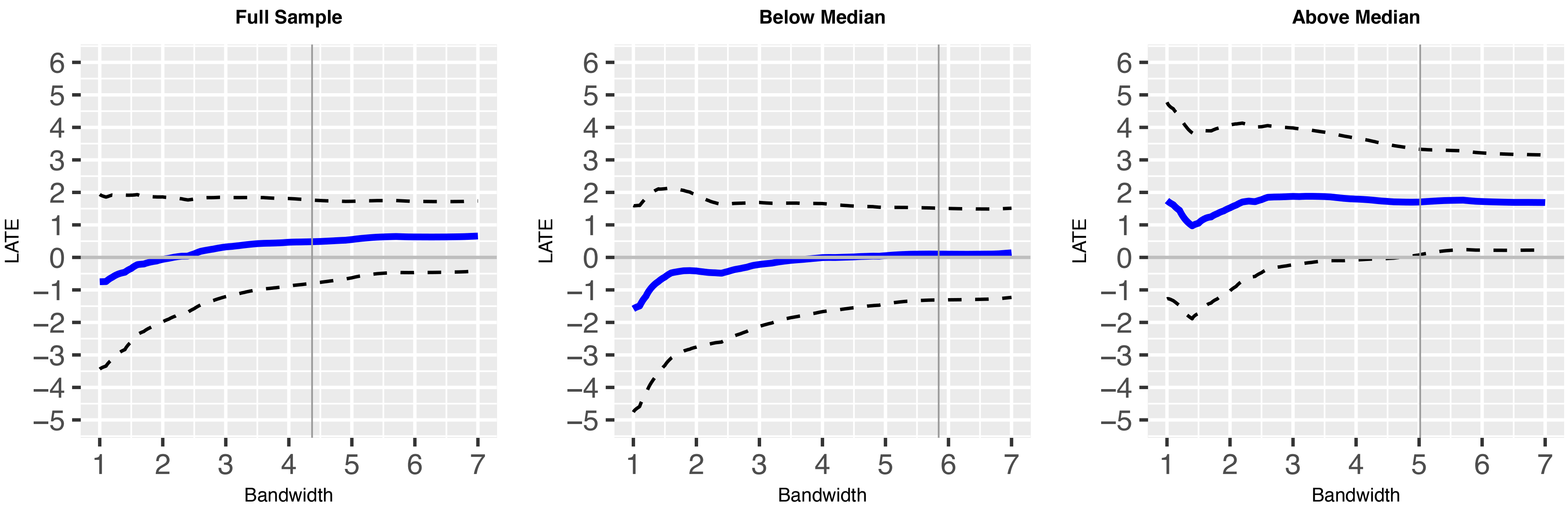

Figure A.2: Replicating the Main Analysis, Excluding Observations between 1959 and 1969

Note: The solid black line in each graph denotes the local average treatment effect across different bandwidths, as denoted in the horizontal axis. The dashed curves denote the 95% CIs and the vertical dashed line indicates the IK bandwidth. The first graph includes all observations. The second graph includes only those observations in which the distance between state and federal election is below the median (851 days). The third graph looks at observations in which the distance between state and federal election is above the median.

Splitting Groups According to the 2.5-Years Rule

Table A.4 and Figure A.3 replicate Table 2 and Figure 2 of the main text, using a different decision rule for the grouping of observations. In particular, instead of dividing between observations below and above the median distance between state and federal elections, we distinguish between observations in which the federal election took place up until 2.5 years since the state election and observations in which the federal election took place after at least 2.5 years had passed since the last state election.

Table A.4: Parametric Analysis of the impact of State Parliamentary Representation on Federal Vote Share.

	One Polynomial	Two Polynomials	Three Polynomials
$X_{i,s.t}$	1.259 (0.100)**	2.041 (0.469)**	2.245 (1.374)
$D_{i,s,t}$	0.376 (0.685)	-0.485 (1.013)	-0.776 (1.395)
Above 2.5 Years	-0.432 (0.687)	-1.248 (1.208)	-1.091 (1.670)
$X_{i,s.t} \times D_{i,s,t}$	-0.448 (0.278)*	-1.144 (0.868)	-0.786 (2.430)
$X_{i,s.t}\times$ Above 2.5 Years	-0.127 (0.153)	-0.919 (0.751)	-0.673 (2.070)
$D_{i,s,t}\times$ Above 2.5 Years	1.430 (1.007)	2.170 (1.607)	3.443 (2.047)*
$X_{i,s.t} \times D_{i,s,t}\times$ Above 2.5 Years	-0.293 (0.377)	0.584 (1.390)	-3.730 (3.728)
$X^2_{i,s.t}$		0.133 (0.069)*	0.221 (0.508)
$X^2_{i,s.t} \times D_{i,s,t}$		-0.151 (0.182)	-0.544 (1.227)
$X^2_{i,s.t}\times$ Above 2.5 Years		-0.135 (0.110)	-0.036 (0.747)
$X^2_{i,s.t} \times D_{i,s,t}\times$ Above 2.5 Years		0.118 (0.278)	2.190 (1.766)
$X^3_{i,s.t}$			0.010 (0.055)
$X^3_{i,s.t} \times D_{i,s,t}$			0.032 (0.169)
$X^3_{i,s.t}\times$ Above 2.5 Years			-0.011 (0.080)
$X^3_{i,s.t} \times D_{i,s,t}\times$ Above 2.5 Years			-0.308 (0.250)
Intercept	6.160 (0.446)**	6.963 (0.750)**	7.063 (1.041)**
n (clusters)	901 (191)	901 (191)	901 (191)
Average Treatment Effects			
τ: Below Median ($D_{i,s,t}$)	0.376 (0.685)	-0.485 (1.013)	-0.776 (1.395)
τ: Above Median ($D_{i,s,t} + D_{i,s,t}\times$ Above Median)	1.806 (0.765)**	1.684 (1.257)	2.667 (1.488)*

Note: The entries denote OLS estimates, with $X_{i,s,t}$ being the forcing variable (state vote share of party i, in state s and election t) and $D_{i,s,t}$ a binary indicator switching on for observations above the threshold. Errors are clustered at the state-election level. Analytical standard errors are shown in the last two rows of the table. *p<.10; **p<.05, two-tailed tests.

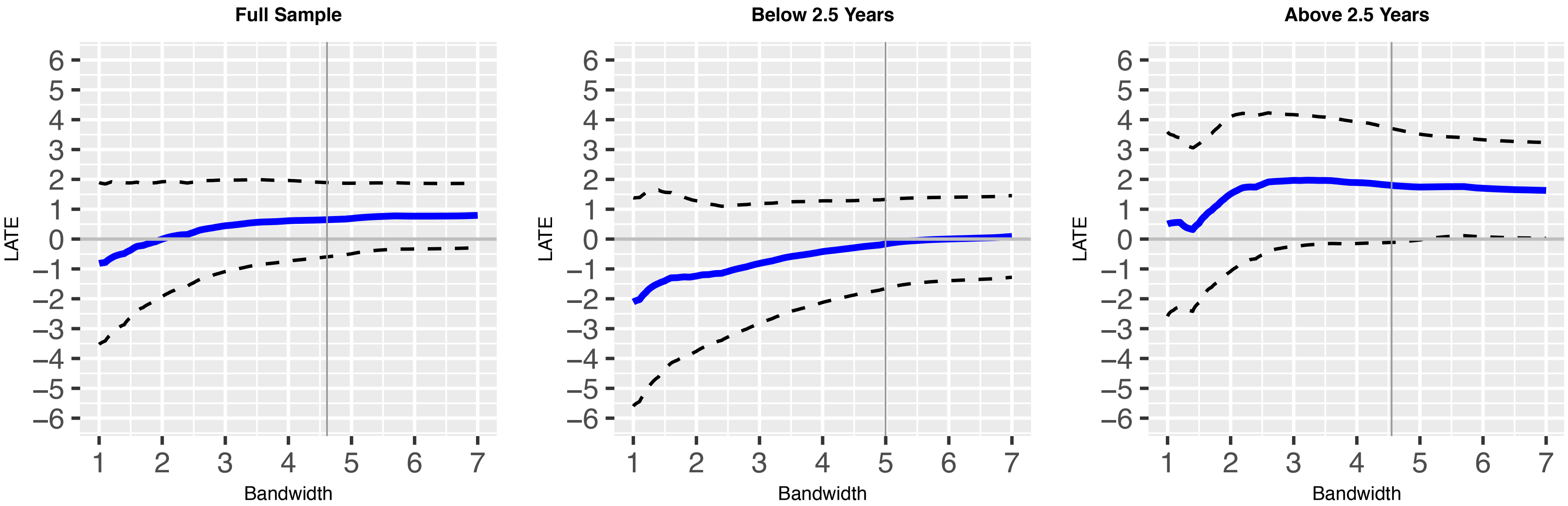

Figure A.3: Local Linear Regression Estimates Across Different Bandwidths, Below and Above 2.5 Years.
Note: The first graph presents the estimates from the full sample, whereas the last two graphs split observations according to whether the federal election has taken place below (second column) or above (third column) 2.5 years. The black solid line denotes the LATE across the range of bandwidths, whereas the dashed curves capture the 95% confidence intervals.

Sorting

We implement the McCrary test, which examines the presence of a significant gap in the density of the assignment variable at the cutoff point. The test is shown in Figure A.4. We focus on the first row of the graph. The first column includes all observations, whereas the second and third columns use only those below and above median distance between state and federal election respectively. We find a significant jump in the density of the state vote share at election t at the cutoff point. The θ statistic of the test is 1.15, which, with a with standard error 0.41, returns a p-value$<$0.01, thus leading us to reject the null of no sorting. The same conclusions is derived from the second column, which includes only observations with close distance between state and federal election. For these observations, $\theta = 1.02$ (std. error 0.45), rejecting the null of no-sorting at $p < .05$. We find no evidence for sorting in the last column of the first row, however, which looks at observations with considerable distance between state and federal election. θ is 0.54, with a standard error of 0.38, generating a p-value of 0.16, which does not allow us to reject the null of no sorting at conventional levels of statistical significance.

Although the pattern of sorting found is unlikely to drive our results, it still leaves open potential room for manipulation in the assignment variable, even in the last group of observations. We try to further address this possibility by considering one potential reason for such manipulation. Between 1959 and 1969, even if the total amount of subventions was contingent upon the party's vote share, it was only available to parliamentary insiders. This rule could have generated higher incentives among parties to even marginally try to cross the threshold.[1] We thus replicate the sorting analysis excluding all observations with state elections during this period. We thus include only observations before 1959 and after 1969. The results are shown in the second row of Figure A.4. Sorting has been reduced in all three cases, but mainly so in the last column, which includes the set of observations with longer distance between state and federal elections. θ is now 0.42 (std. error 0.61) with p-value very close to 0.5. Clearly, there is no evidence of sorting among this group of observations.[2] Looking back at Figure A.2 reminds us that that the results remain robust to the exclusion of these observations from the analysis.

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[1] The simultaneous presence of direct subsidies and parliamentary benefits arising from entering parliament also creates a problem of compound treatment effect for this particular period. Excluding these observations thus helps to also address this alternative mechanism for the treatment effects.

[2] The equivalent figures are $\theta = 0.88$ (std. error 0.39, $p<.05$) and $\theta = 0.83$ (std. error 0.41, $p<.05$) for the first and second column of the second row respectively.

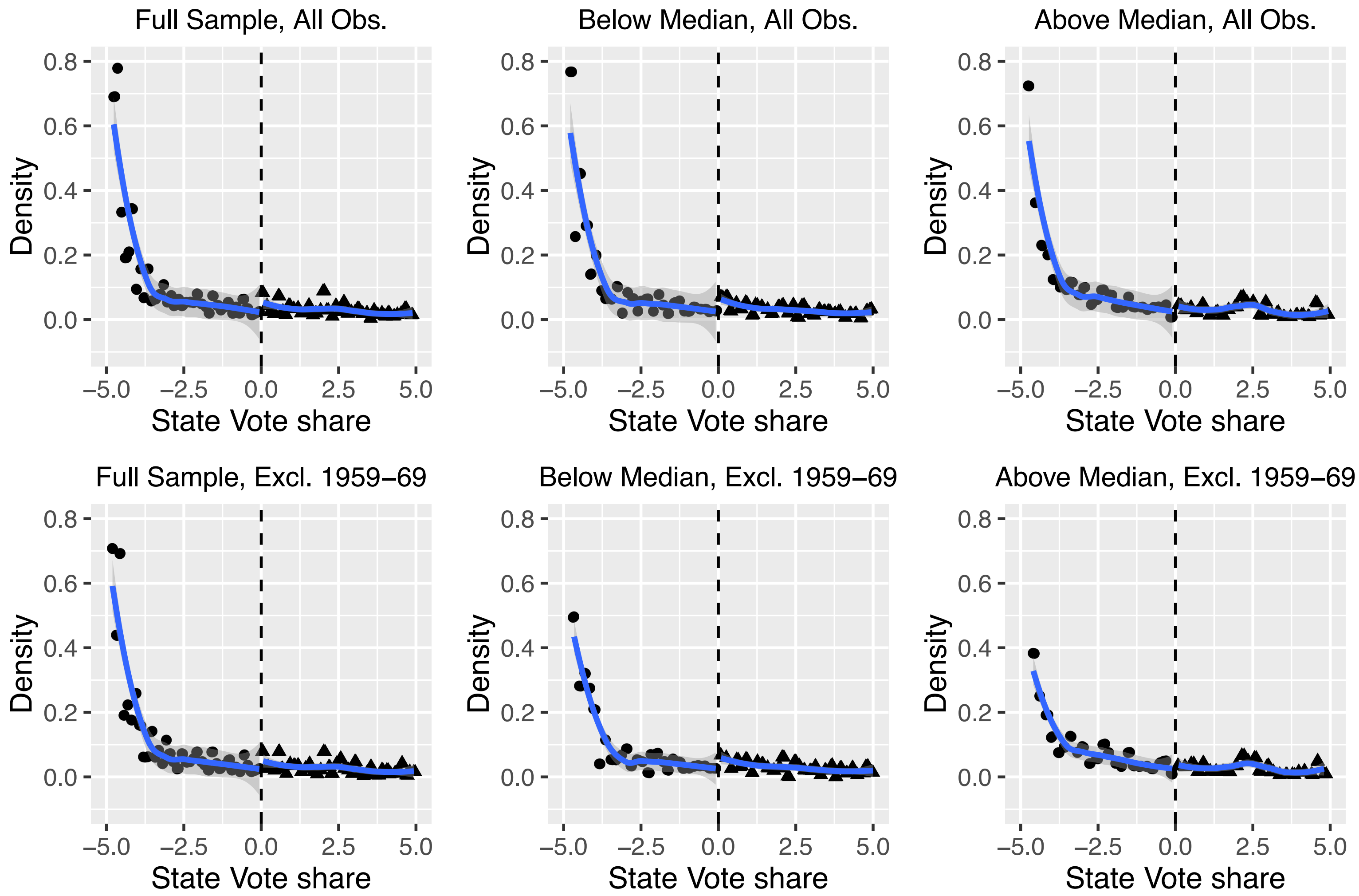


Figure A.4: A Density Inspection for Manipulation in the Forcing Variable

Note: Each dot represents a local average treatment effect, given that the federal election took place at least as many days as denoted in the x-axis since the state election. The blue local regression curve summarizes the overall pattern.

Table A.5: Balance Checks, Full Sample

	RD Estimates	95% Lower Bound	95% Upper Bound	IK Bandwidth
Extreme right	-0.058 (0.074)	-0.203	0.088	2.45
East Germany	-0.015 (0.097)	-0.205	0.174	2.07
Year	3.056 (3.000)	-2.824	8.936	3.95
Year^2	12064.3 (11881)	-11222	35351	3.96
Post-1989	0.122 (0.090)	-0.054	0.298	2.95
FDP	-0.175 (0.109)	-0.388	0.038	2.01
Greens	0.179 (0.081)**	0.020	0.338	2.63
Baden-Württemberg	0.017 (0.034)	-0.050	0.083	2.36
Bayern	-0.039 (0.053)	-0.143	0.065	1.96
Berlin	0.004 (0.058)	-0.110	0.118	1.80
Brandenburg	0.040 (0.021)**	-0.000	0.081	2.06
Bremen	0.047 (0.046)	-0.043	0.137	2.47
Hamburg	-0.218 (0.102)**	-0.418	-.0174	1.55
Hessen	0.059 (0.067)	-0.074	0.192	1.66
Mecklenburg-Vorpommern	-0.023 (0.034)	-0.089	0.043	1.86
Niedersachsen	-0.068 (0.059)	-0.184	(0.048)	2.36
Nordrhein-Westfalen	0.051 (0.057)	-0.062	0.162	2.35
Rheinland-Pfalz	-0.006 (0.042)	-0.088	0.076	2.41
Saarland	0.154 (0.051)**	0.055	0.254	2.49
Sachsen	0.065 (0.044)	-0.021	0.151	2.24
Sachsen-Anhalt	-0.043 (0.062)	-0.165	0.079	2.36
Schleswig-Holstein	-0.005 (0.065)	-0.133	0.124	2.67
Thüringen	-0.058 (0.033)*	-0.123	0.007	2.09

Note: The entries in the first column denote the treatment effect (τ) of entering the state parliament on various placebo outcomes. Standard errors, clustered at the state-election level, in parentheses. *p<.10; **p<.05, two-tailed tests.

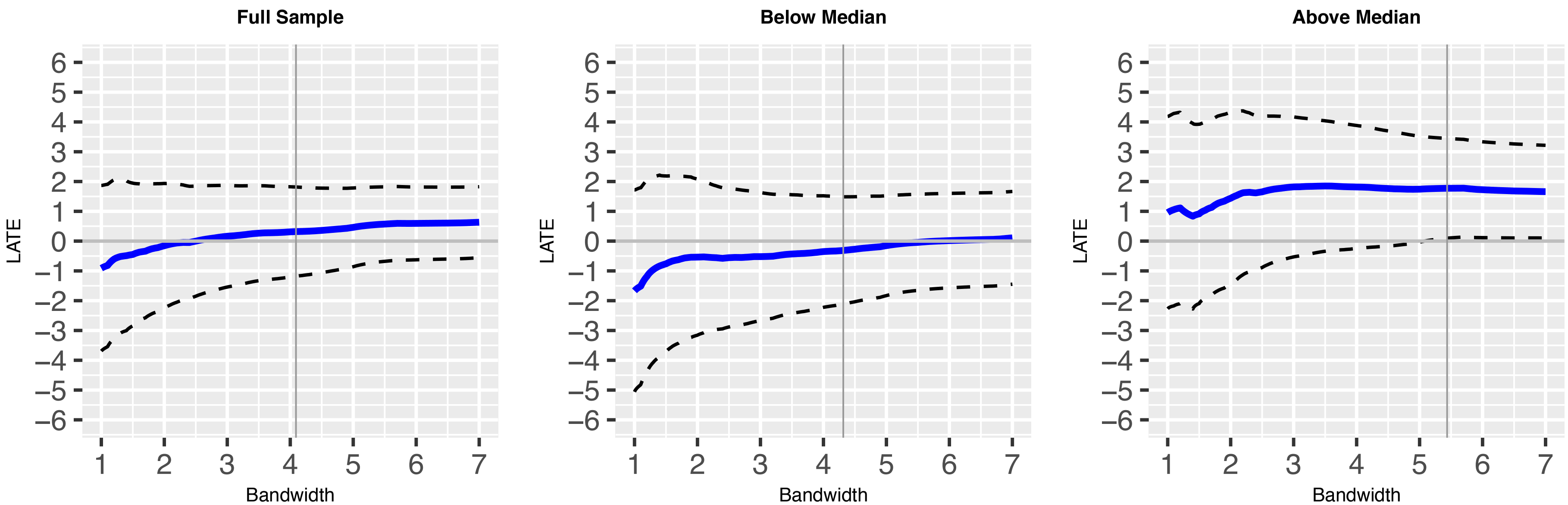


Figure A.5: Replicating the Main Analysis, Excluding the states of Saarland and Thuringen.

Note: The solid black line in each graph denotes the local average treatment effect across different bandwidths, as denoted in the horizontal axis. The dashed curves denote the 95% CIs and the vertical dashed line indicates the IK bandwidth. The first graph includes all observations. The second graph includes only those observations in which the distance between state and federal election is below the median (851 days). The third graph looks at observations in which the distance between state and federal election is above the median.

Within-Group Jumps

We use both the within-group median and the within-group mean for each set of analysis. Among parties with $0 < X_{i,s,t} < 5$, none of whom achieves parliamentary representation, those below the median are compared to those above the median. The same comparison takes place separately for parties with $5 < X_{i,s,t} < 10$, all of whom enter the state parliament. The results appear in Table A.6.

Table A.6: Robustness Check: Within-Group Jumps

	Within-Group Jumps		Within-Group Jumps	
	$c = 0.7$ Median	$c = 1.23$ Mean	$c = 7$ Median	$c = 7.11$ Mean
	IK Bandwidth			
Tr Effect	0.167 (0.236)	-0.766 (0.501)	1.028 (1.215)	-0.313 (1.668)
95% CIs	[-0.295—0.630]	[-1.628—0.973]	[-1.353—3.409]	[-3.582—2.956]
Bandwidth (h)	1.405	1.175	1.114	1.592
n [treated]	86	52	38	35
n [control]	164	171	26	44
	Bandwidth: $h = 2.5$			
Tr. Effect	0.225 0.215	-0.204 (0.410)	-0.451 (1.393)	-0.119 (1.455)
95% CIs	[-0.197—0.647]	[-1.619—0.967]	[-3.181—2.279]	[-2.970—2.733]
n [treated]	123	97	50	49
n [control]	164	206	54	62

Note: The first two columns compare parties with $c \leq X_{i,s,t} < 5\%$ and parties with $0\% \leq X_{i,s,t} < c$. None of these parties has achieved parliamentary representation. The last two columns compare parties with $5\% \leq X_{i,s,t} < c$ and parties with $c \leq X_{i,s,t} \leq 10\%$. All parties enter the parliament in the last two colums. We use the median vote share of parties with $0\% < X_{i,s,t} < 5\%$ and with $5\% < X_{i,s,t} < 10\%$ to create the comparison groups in columns one and three respectively. We limit our observations to the 0-10% interval. We also use the mean cutoff point, i.e. $c = 1.23$ for parties with $X_{i,s,t} < 5\%$ and $c = 7.11$ for parties with$X_{i,s,t} \leq 5\%$.

Table A.7: Parliamentary Funding per state, adjusted by number of parties in the parliament and by state population size, 2010 data

State	Parliamentary Funding per capita & per party	Total Parliamentary Expenditure (in million euros)
Baden-Württemberg	0.102	5.488
Nordrhein-Westfalen	0.110	9.802
Niedersachsen	0.117	6.837
Bayern	0.234	14.673
Schleswig-Holstein	0.248	4.211
Hessen	0.276	8.383
Rheinland-Pfalz	0.331	3.973
Sachsen	0.410	10.221
Berlin	0.415	7.172
Hamburg	0.447	3.972
Brandenburg	0.460	5.762
Sachsen-Anhalt	0.559	5.192
Saarland	0.629	3.200
Thüringen	0.671	7.494
Mecklenburg-Vorpommern	0.685	5.629
Bremen	1.670	5.516

Note: The dashed horizontal line denotes the distinction between states with low and states . with high levels of parliamentary funding. Data Sources: "Landeshaushalte" as published online: http://www.haushaltssteuerung.de/landeshaushalte.html

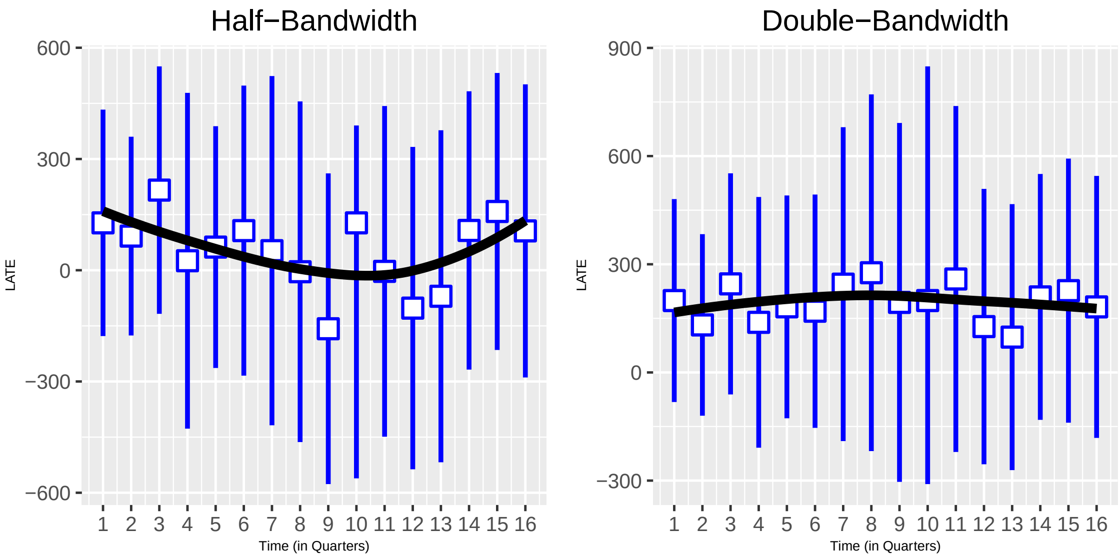


Figure A.6: Testing the Media Hypothesis by Using Half and Double the IK bandwidth.

Note: Both graphs replicate Figure 4. The first panel uses half the IK bandwidth for each quarter, whereas the second panel uses the double of the IK bandwidth. Each spike denotes the average treatment effect of entering state parliament on media mentions on the party, evaluated at the cutoff point, i.e. the 5% threshold. The empty squares represent estimates stemming from local linear regression, using the IK bandwidth. Each spike presents a quarter of the year. Vertical axes denote the 95% confidence intervals.

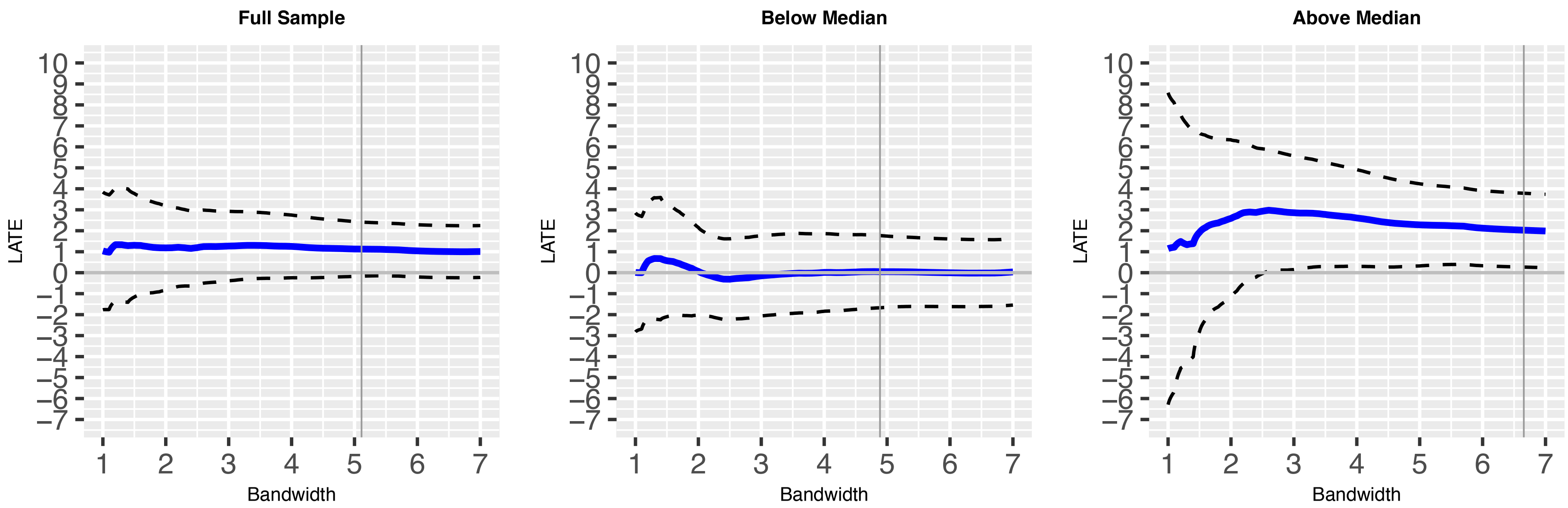


Figure A.7: Replicating the Main Analysis, Excluding the FDP.

Note: The solid black line in each graph denotes the local average treatment effect across different bandwidths, as denoted in the horizontal axis. The dashed curves denote the 95% CIs and the vertical dashed line indicates the IK bandwidth. The first graph includes all observations. The second graph includes only those observations in which the distance between state and federal election is below the median (851 days). The third graph looks at observations in which the distance between state and federal election is above the median.

The (non-)Moderating Role of Experience

To examine whether experience qualifies the effect of parliamentary representation, we estimate the following model:

$$\begin{aligned}
Y_{i,s,t+1} = \beta_0 &+ \beta_1 X^*_{i,s,t} + \beta_2 D_{i,s,t} + \beta_3 Exp_{i,s,t-1} + \beta_4 AM_{s,t} \\
&+ \beta_5 X^*_{i,s,t} D_{i,s,t} + \beta_6 X^*_{i,s,t} Exp_{i,s,t-1} + \beta_7 X^*_{i,s,t} AM_{s,t} \\
&+ \beta_8 D_{i,s,t} Exp_{i,s,t} + \beta_9 D_{i,s,t} AM_{s,t} + \beta_{10} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{11} X^*_{i,s,t} D_{i,s,t} Exp_{i,s,t} + \beta_{12} X^*_{i,s,t} D_{i,s,t} AM_{s,t} \\
&+ \beta_{13} X^*_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + \beta_{14} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{15} X^*_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + u_{ist}
\end{aligned}$$

where $Y_{i,s,t+1}$ denotes the vote share of party i, at state s in the federal election that follows the state election t; $D_{i,s,t}$ is a binary indicator of parties that crossed the threshold in the state election; $Exp_{i,s,t}$ is also a dummy variable that switches on for parties that crossed the threshold in the state election $t-1$ and thus can be considered as having already parliamentary experience. $AM_{s,t}$ (*Above Median*) denotes observations with more than median distance between the state election t and the federal election $t+1$. Finally, let $X_{i,s,t}$ represent the assignment variable, i.e. parties' vote share at state election t. If c is the electoral threshold, then: $X^*_{i,s,t} = X_{i,s,t} - c$.

Our interest lies in the moderating effect of experience. To capture this effect, we estimate four different quantities of interest. All of them constitute local average treatment effect, as evaluated at the cutoff point, i.e. the 5% electoral threshold. Thus, for all quantities of interest, $X^*_{i,s,t} = 0$.

- The average effect of parliamentary representation on federal vote share for a party *without experience* in a federal election that comes *near* the previous state election: β_2 (Part 1, Row 1 of Table 6).
- The average effect of parliamentary representation on federal vote share for a party *with experience* in a federal election that takes place *near* the previous state election: $\beta_2 + \beta_8$ (Part1, Row 2 of Table 6).
- The average effect of parliamentary representation on federal vote share for a party *without experience* in a federal election that comes *far* from the previous state election: $\beta_2 + \beta_9$ (Part 2, Row 1 of Table 6).
- The average effect of parliamentary representation on federal vote share for a

party *with experience* in a federal election that comes *far* from the previous state election: $\beta_2 + \beta_8 + \beta_9 + \beta_{14}$ (Part 2, Row 2 of Table 6).

Therefore, the moderating role of *Experience* in the impact of state parliamentary representation on federal vote share is given by:

- β_8 for elections below the median distance between state and federal election (Part 1, Row 3 of Table 6).
- $\beta_8 + \beta_{14}$ for elections above the median distance between state and federal election (Part 2, Row 3 of Table 6).

Analytical standard errors are estimated for each of these quantities. Bootstrapped standard errors provide substantively identical results.

This equation is then augmented to incorporate non-linearities in the relationship between the assignment variable and the outcome. The parameters providing the quantities of interest (shown in Table 6) remain the same in all three models (as described above, in the bullet points). However, the equation is expanded to incorporate the higher polynomials of the assignment variable. In particular, the second polynomial model is estimated as follows:

$$
\begin{aligned}
Y_{i,s,t+1} = \beta_0 &+ \beta_1 X^*_{i,s,t} + \beta_2 D_{i,s,t} + \beta_3 Exp_{i,s,t-1} + \beta_4 AM_{s,t} \\
&+ \beta_5 X^*_{i,s,t} D_{i,s,t} + \beta_6 X^*_{i,s,t} Exp_{i,s,t-1} + \beta_7 X^*_{i,s,t} AM_{s,t} \\
&+ \beta_8 D_{i,s,t} Exp_{i,s,t-1} + \beta_9 D_{i,s,t} AM_{s,t} + \beta_{10} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{11} X^*_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} + \beta_{12} X^*_{i,s,t} D_{i,s,t} AM_{s,t} \\
&+ \beta_{13} X^*_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + \beta_{14} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{15} X^*_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + \\
&+ \beta_{16} X^{2*}_{i,s,t} + \beta_{17} D_{i,s,t} X^{2*}_{i,s,t} + \beta_{18} Exp_{i,s,t-1} X^{2*}_{i,s,t} \\
&+ \beta_{19} AM_{s,t} X^{2*}_{i,s,t} + \beta_{20} X^{2*}_{i,s,t} D_{i,s,t} AM_{s,t} + \beta_{21} X^{2*}_{i,s,t} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{22} X^{2*}_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + u_{ist}
\end{aligned}
$$

where all terms are defined as above. Including three polynomials, the equation is qualified as follows:

$$
\begin{aligned}
Y_{i,s,t+1} = \beta_0 &+ \beta_1 X^*_{i,s,t} + \beta_2 D_{i,s,t} + \beta_3 Exp_{i,s,t-1} + \beta_4 AM_{s,t} \\
&+ \beta_5 X^*_{i,s,t} D_{i,s,t} + \beta_6 X^*_{i,s,t} Exp_{i,s,t-1} + \beta_7 X^*_{i,s,t} AM_{s,t} \\
&+ \beta_8 D_{i,s,t} Exp_{i,s,t-1} + \beta_9 D_{i,s,t} AM_{s,t} + \beta_{10} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{11} X^*_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} + \beta_{12} X^*_{i,s,t} D_{i,s,t} AM_{s,t} \\
&+ \beta_{13} X^*_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + \beta_{14} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{15} X^*_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + \\
&+ \beta_{16} X^{2*}_{i,s,t} + \beta_{17} D_{i,s,t} X^{2*}_{i,s,t} + \beta_{18} Exp_{i,s,t-1} X^{2*}_{i,s,t} \\
&+ \beta_{19} AM_{s,t} X^{2*}_{i,s,t} + \beta_{20} X^{2*}_{i,s,t} D_{i,s,t} AM_{s,t} + \beta_{21} X^{2*}_{i,s,t} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{22} X^{2*}_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} + \beta_{23} X^{2*}_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{24} X^{3*}_{i,s,t} + \beta_{25} D_{i,s,t} X^{3*}_{i,s,t} + \beta_{26} Exp_{i,s,t-1} X^{3*}_{i,s,t} \\
&+ \beta_{27} AM_{s,t} X^{3*}_{i,s,t} + \beta_{28} X^{3*}_{i,s,t} D_{i,s,t} AM_{s,t} + \beta_{29} X^{3*}_{i,s,t} Exp_{i,s,t-1} AM_{s,t} \\
&+ \beta_{30} X^{3*}_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} \\
&+ \beta_{31} X^{3*}_{i,s,t} D_{i,s,t} Exp_{i,s,t-1} AM_{s,t} + u_{ist}
\end{aligned}
$$

As already pointed out, the key parameters that provide the quantities of interest remain the same in all three models. Table A.8 diplays the full estimates from all three models.

Are there Time Trends in the Magnitude of the Effects?

We try to examine the presence of a time trend in the effect of state parliamentary presence on federal vote share by incorporating a linear time trend in the polynomial specification. Similar to the exercise regarding previous parliamentary experience, we include up to a third polynomial of the assignment variable (party's vote share at state election t). The three model specifications are identical to the ones employed when looking at the moderating effect of parliamentary experience, except from the fact that instead of $Exp_{i,s,t-1}$, we know use $Year_t$, which is a simple counter of the federal election year and ranges from 1947 to 2013. The first polynomial equation, then, takes the following form:

Table A.8: Does Experience Moderate the Effect of Parliamentary Representation on Federal Vote share?

	One Polynomial	Two Polynomials	Three Polynomials
$X_{i,s.t}$	1.345 (0.141)**	2.610 (0.587)**	2.795 (1.757)
$D_{i,s,t}$	0.231 (1.077)	-2.343 (1.363)*	-2.922 (1.630)*
$Exp_{i,s,t-1}$	0.094 (0.978)	-0.618 (1.576)	-0.788 (2.192)
$AM_{s,t}$	-1.621 (0.889)*	-1.891 (1.301)	-1.115 (1.519)
$X_{i,s.t} \times D_{i,s,t}$	-1.224 (0.418)**	1.037 (1.021)	3.716 (3.160)
$X_{i,s.t} \times Exp_{i,s,t-1}$	-0.027 (0.220)	-0.824 (0.959)	-1.184 (2.872)
$X_{i,s.t} \times AM_{s,t}$	-0.395 (0.195)**	-0.947 (0.755)	0.407 (2.267)
$D_{i,s,t} \times Exp_{i,s,t-1}$	-0.083 (1.561)	1.936 (2.090)	2.835 (2.601)
$D_{i,s,t} \times AM_{s,t}$	1.655 (1.681)	5.097 (1.866)**	4.879 (2.184)**
$Exp_{i,s,t} \times AM_{s,t}$	0.753 (1.285)	0.127 (2.057)	-0.565 (2.841)
$X_{i,s.t} \times D_{i,s,t} \times Exp_{i,s,t-1}$	0.735 (0.666)	-1.923 (1.663)	-5.002 (4.515)
$X_{i,s.t} \times D_{i,s,t} \times AM_{s,t}$	0.731 (0.565)	-5.006 (1.624)**	-9.451 (5.297)*
$X_{i,s.t} \times Exp_{i,s,t-1} \times AM_{s,t}$	0.190 (0.286)	-0.095 (1.266)	-1.289 (3.798)
$D_{i,s,t} \times Exp_{i,s,t-1} \times AM_{s,t}$	-0.010 (2.225)	-2.893 (2.765)	-1.644 (3.517)
$X_{i,s.t} \times D_{i,s,t} \times Exp_{i,s,t-1} \times AM_{s,t}$	-0.893 (0.833)	6.110 (2.581)**	7.284 (7.294)
$X^2_{i,s.t}$		0.220 (0.085)**	0.303 (0.669)
$X^2_{i,s.t} \times D_{i,s,t}$		-1.178 (0.213)**	-3.200 (1.598)**
$X^2_{i,s.t} \times Exp_{i,s,t-1}$		-0.142 (0.139)	-0.299 (1.067)
$X^2_{i,s.t} \times AM_{s,t}$		-0.109 (0.109)	0.449 (0.886)
$X^2_{i,s.t} \times D_{i,s,t} \times Exp_{i,s,t-1}$		1.085 (0.330)**	3.478 (2.029)*
$X^2_{i,s.t} \times D_{i,s,t} \times AM_{s,t}$		1.608 (0.336)**	3.132 (3.096)
$X^2_{i,s.t} \times Exp_{i,s,t-1} \times AM_{s,t}$		-0.032 (0.186)**	-0.522 (1.412)
$X^2_{i,s.t} \times D_{i,s,t} \times Exp_{i,s,t-1} \times AM_{s,t}$		-1.558 (0.504)**	-1.500 (3.734)
$X^3_{i,s.t}$			0.010 (0.074)
$X^3_{i,s.t} \times D_{i,s,t}$			0.308 (0.253)
$X^3_{i,s.t} \times Exp_{i,s,t}$			-0.019 (0.116)
$X^3_{i,s.t} \times AM_{s,t}$			0.065 (0.098)
$X^3_{i,s.t} \times D_{i,s,t} \times Exp_{i,s,t}$			-0.340 (0.299)
$X^3_{i,s.t} \times D_{i,s,t} \times AM_{s,t}$			-0.403 (0.431)
$X^3_{i,s.t} \times Exp_{i,s,t} \times AM_{s,t}$			-0.057 (0.153)
$X^3_{i,s.t} \times D_{i,s,t} \times Exp_{i,s,t} \times AM_{s,t}$			0.169 (0.508)
Intercept	6.436 (0.628)**	7.650 (0.971)**	7.727 (1.283)**
n (clusters)	901 (191)	901 (191)	901 (191)

Note: The entries denote OLS estimates, with standard errors clustered at the state-election level.*p<.10; **p<.05, two-tailed tests.

$$
\begin{aligned}
Y_{i,s,t+1} = \beta_0 &+ \beta_1 X^*_{i,s,t} + \beta_2 D_{i,s,t} + \beta_3 Year_t + \beta_4 AM_{s,t} \\
&+ \beta_5 X^*_{i,s,t} D_{i,s,t} + \beta_6 X^*_{i,s,t} Year_t + \beta_7 X^*_{i,s,t} AM_{s,t} \\
&+ \beta_8 D_{i,s,t} Year_t + \beta_9 D_{i,s,t} AM_{s,t} + \beta_{10} Year_t AM_{s,t} \\
&+ \beta_{11} X^*_{i,s,t} D_{i,s,t} Year_t + \beta_{12} X^*_{i,s,t} D_{i,s,t} AM_{s,t} \\
&+ \beta_{13} X^*_{i,s,t} Year_t AM_{s,t} + \beta_{14} D_{i,s,t} Year_t AM_{s,t} \\
&+ \beta_{15} X^*_{i,s,t} D_{i,s,t} Year_t AM_{s,t} + u_{ist}
\end{aligned}
$$

The second and third polynomial equations are simply expanded to add the higher order terms. The full results are shown in Table A.9. Figure A.8 visualizes the overall pattern. It shows how the predicted difference in the federal vote share of parties which just entered parliament versus those which were left out (thus, evaluating the treatment effect at $X_{i,s,t} = c$) has varied over time.[3] As shown in the first column of the Figure, among the set of observations with above-median distance between state and federal election, there seems to be a modest but positive time trend, with the parliamentary effects being more evident among recent elections. This conclusion, however, is qualified when looking at the higher polynomial specifications. Both the magnitude and the direction of the time-specific effects seem to be susceptible to the exact model specification. Taken as a whole, these findings do not allow out-of-sample generalizations. The evidence for a significant time trend in the effects seems to gain little support from this analysis.

[3] In particular, for observations with below-median distance between state and federal election, the treatment effects are given by: $\beta_2 + \beta_8 Year_t$; for observations above median distance, average conditional treatment effects, given the year of the election, are given by: $\beta_2 + \beta_8 Year_t + \beta_9 + \beta_{14} Year_t$. To be sure, the pattern is only a linear approximation of the underlying time-specific variation in the effect of parliamentary representation. Allowing quadratic trends might well qualify this picture. We have avoided higher-order time-trends because we do not have a strong theory as to why such non-linear effects might have emerged. We thus opted for a simpler specification, which is already very data demanding. Adding higher-order time trends would necessitate more information than is currently available in this data and would thus render the estimation uninformative.

Table A.9: Examining the Variation in the Magnitude of the Treatment Effects Over Time Using a Linear Time Trend.

	One Polynomial	Two Polynomials	Three Polynomials
$X_{i,s.t}$	7.795 (19.31)	59.00 (58.22)	-58.56 (196.8)
$D_{i,s,t}$	-15.98 (117.3)	-138.2 (146.1)	134.9 (173.1)
$Year_t$	-0.008 (0.043)	-0.024 (0.057)	0.000 (0.052)
$AM_{s,t}$	-64.01 (96.03)	-49.52 (140.7)	38.09 (168.6)
$X_{i,s.t} \times D_{i,s,t}$	-2.925 (39.31)	44.68 (119.8)	-330.3 (335.7)
$X_{i,s.t} \times Year_t$	-0.003 (0.010)	-0.029 (0.029)	0.030 (0.099)
$X_{i,s.t} \times AM_{s,t}$	-15.25 (21.79)	-21.24 (79.33)	169.7 (257.2)
$D_{i,s,t} \times Year_t$	0.008 (0.059)	0.069 (0.073)	-0.068 (0.087)
$D_{i,s,t} \times AM_{s,t}$	-33.92 (145.7)	223.2 (213.2)	-198.1 (281.5)
$Year_t \times AM_{s,t}$	0.032 (0.048)	0.024 (0.071)	-0.020 (0.085)
$X_{i,s.t} \times D_{i,s,t} \times Year_t$	0.001 (.020)	-0.023 (0.060)	0.166 (0.168)
$X_{i,s.t} \times D_{i,s,t} \times AM_{s,t}$	20.25 (51.39)	-296.9 (166.3)*	264.2 (530.8)
$D_{i,s,t} \times Year_t \times AM_{s,t}$	0.018 (0.073)	-0.111 (0.107)	0.101 (0.141)
$X_{i,s.t} \times Year_t \times AM_{s,t}$	0.008 (0.011)	0.010 (0.040)	-0.086 (0.129)
$X_{i,s.t} \times D_{i,s,t} \times Year_t \times AM_{s,t}$	-0.010 (0.026)	0.150 (0.084)*	-0.135 (0.266)
$X^2_{i,s.t}$		9.576 (8.516)	-44.32 (88.98)
$X^2_{i,s.t} \times D_{i,s,t}$		-28.54 (21.68)	264.5 (170.3)
$X^2_{i,s.t} \times Year_t$		-0.005 (0.004)	0.022 (0.045)
$X^2_{i,s.t} \times AM_{s,t}$		-1.810 (11.67)	83.83 (107.5)
$X^2_{i,s.t} \times D_{i,s,t} \times Year_t$		0.014 (0.011)	-0.133 (0.085)
$X^2_{i,s.t} \times D_{i,s,t} \times AM_{s,t}$		67.21 (33.05)**	-389.4 (254.8)
$X^2_{i,s.t} \times Year_t \times AM_{s,t}$		0.001 (0.006)	-0.042 (0.054)
$X^2_{i,s.t} \times D_{i,s,t} \times Year_t \times AM_{s,t}$		-0.034 (0.017)**	0.197 (0.128)
$X^3_{i,s.t}$			-6.626 (10.57)
$X^3_{i,s.t} \times D_{i,s,t}$			-24.72 (21.30)
$X^3_{i,s.t} \times Year_t$			0.003 (0.005)
$X^3_{i,s.t} \times AM_{s,t}$			10.42 (12.46)
$X^3_{i,s.t} \times D_{i,s,t} \times Year_t$			0.012 (0.011)
$X^3_{i,s.t} \times D_{i,s,t} \times AM_{s,t}$			38.40 (34.12)
$X^3_{i,s.t} \times Year_t \times AM_{s,t}$			-0.005 (0.006)
$X^3_{i,s.t} \times D_{i,s,t} \times Year_t \times AM_{s,t}$			-0.019 (0.017)
Intercept	22.51 (85.70)	56.06 (113.5)	6.869 (103.3)
n (clusters)	901 (191)	901 (191)	901 (191)

Note: The entries denote OLS estimates, with standard errors clustered at the state-election level.*p<.10; **p<.05, two-tailed tests.

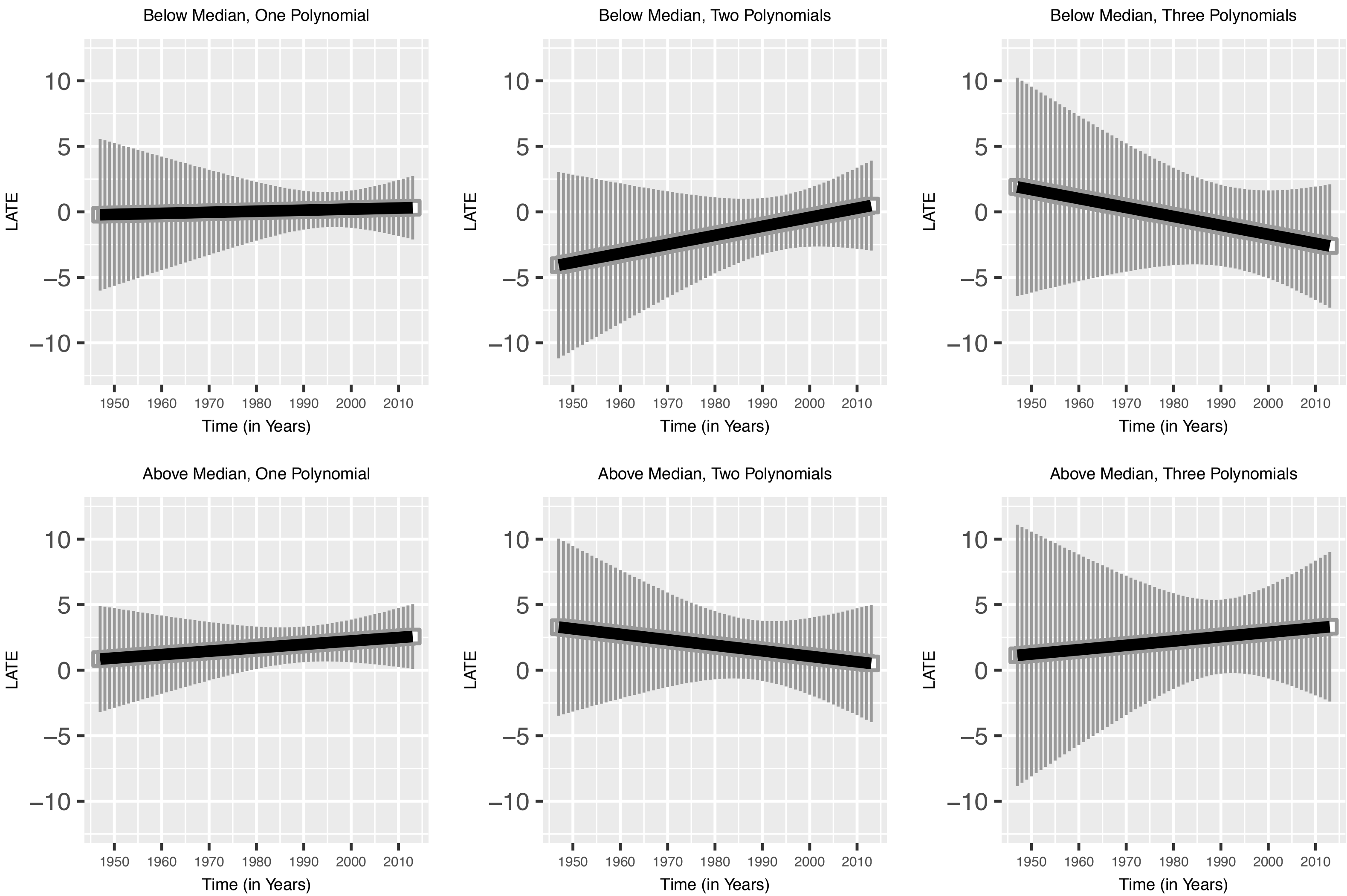
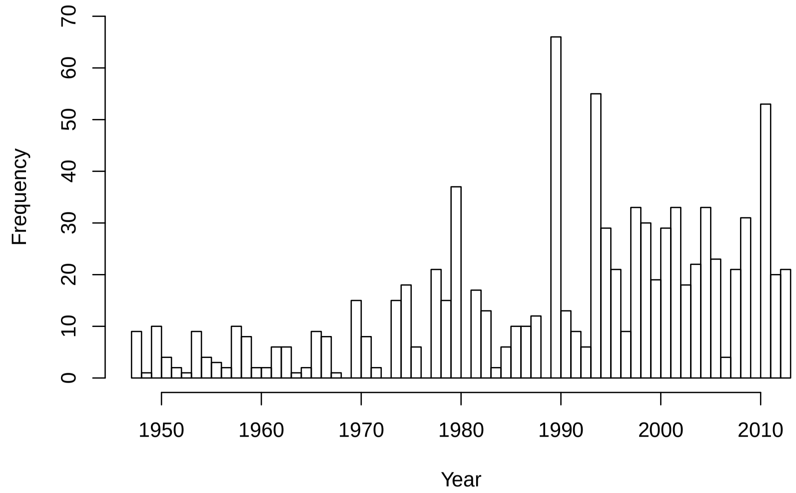


Figure A.8: Over-time Change in the Effect of Parliamentary Representation on Federal Vote Share.
Note: The solid black line denotes the difference in the vote share of parties that enter state parliament compared to parties without regional parliamentary representation, across the time period 1947-2013. The vertical grey lines map the 95% confidence intervals. Estimation draws on the procedure outlined in the Appendix.

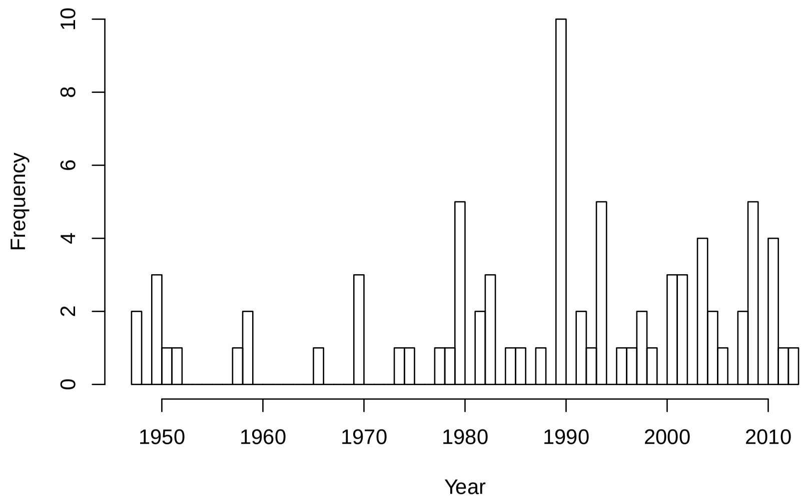
Table A.10: Parties included in analysis

	5.0% window		4.0% window		0.7% window	
	Partyname	N	Partyname	N	Partyname	N
1	FDP[a]	169	FDP[a]	158	FDP[a]	32
2	Grüne[b]	105	Grüne[b]	99	Grüne[b]	25
3	NPD	102	REP	52	NPD	5
4	REP	77	NPD	42	KPD	5
5	DRP/DKP	53	DRP/DKP	16	Die Linke	4
6	ÖDP	52	Die Linke	15	REP	4
7	Graue	34	Piraten	13	DVU	2
8	PBC	29	ÖDP	9	DRP/DKP	1
9	BÜSO	21	GB/BHE	8	GB/BHE	1
10	EAP	16	KPD	8	SSW	1
11	Piraten	16	DFU	7		
12	Die Linke	15	Graue	6		
13	Die Tierschutzpartei	15	DVU	5		
14	KPD	13	Freie Wähler	5		
15	Naturgesetz	12	DSU	4		
16	KBW	12	Familie	4		
17	Familie	11	PDS	4		
18	Freie Wähler	11	BP	3		
19	PDS	9	DP	3		
20	BP	8	SSW	3		
21	CM	8	AfD	1		
22	DFU	8	ASD	1		
23	Zentrum	8	BdD	1		
24	GB/BHE	8	BÜ90/Gr/UFV	1		
25	BdD	6	Forum	1		
26	DVU	6	Pro	1		
27	DG	5	Pro DM	1		
28	DP	5	Schill	1		
29	DSU	5	Zentrum	1		
30	FSU	5	50 Plus	1		
31	Die Frauen	4				
32	Die Partei	4				
33	SSW	4				
34	BIG	3				
35	MLPD	3				
36	Partioten	3				
37	UAP	3				
38	CBV	2				
39	HP	2				
40	LIGA	2				
41	Pro DM	2				
42	PSG	2				
43	RRP	2				
44	AfD	1				
45	APD	1				
46	APPD	1				
47	ASD	1				
48	AUD	1				
49	BFB-Die Offensive	1				
50	BÜ90/Gr/UFV	1				
51	BWK	1				
52	CBV	1				
53	CDU	1				
54	DPD	1				
55	Deutschland	1				
56	Die Violetten	1				
57	Forum	1				
58	Frauenliste	1				
59	Mündige Burger	1				
60	Öko	1				
61	Partei der Vernunft	1				
62	PASS	1				
63	PRO	1				
64	Rentner	1				
65	SPD	1				
66	STATT Partei	1				
67	Schill	1				
68	Volksabstimmung	1				
69	50 Plus	1				
N		905		474		80

Note: [a]and allies, includes FDP/DPS (Saarland) and DVP
[b]and allies, includes Bündnis90 (1990-1994 in Eastern German states)



(a) 5% window



(b) 0.7% window

Figure A.9: Number of cases over time

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