Appendix

August 25, 2016

Appendix to "How to increase turnout in low salience elections. Quasi-experimental evidence on the effect of simultaneous second-order elections on political participation." Additional tables and figures appear in the order they are referenced in the paper. The sectioning of the appendix mirrors that of the article.

3 Research Design (and Data)

3.1 Dataset and main dependent variable

The following paragraphs describe our dataset and the construction of our dependent variable.

Citizens in Germany generally vote on four levels. On the European level, elections to the European Parliament (EE) take place every five years. Elections on federal level (GE), for the German parliament (Bundestag) take place every four years. Elections on federal state level for federal state parliaments take, depending on state election laws, place every four to mostly five years. Elections on local level comprise elections for local councils, district councils, mayors and district administrators. Councils are elected every five to six years, depending on state regulations. Mayors and district administrators are directly elected every five to nine years (except for the city states) depending on state and community regulations (Glejdura, 1972).

To analyze the effect of concurrent local elections on EE turnout we assembled two datasets – one dataset of municipal-level election returns for Federal and European Elections in the 2009-2014 period in Lower Saxony and another dataset of state-level returns for all eight European elections and Federal Election held in Germany since 1979. To analyze the effect of concurrent elections on turnout and vote shares, we draw on variation in the timing of European and local elections on the municipal (in the state of Lower Saxony). We generalize our findings with election data on the state level (for all of Germany).

As dependent variable, we primarily use the difference of EE turnout to turnout in the preceding GE as variable of interest. By calculating this turnout differential we control for level differences in what we call 'maximum turnout potential'. This strategy cancels out all time-constant factors that affect turnout similarly for European and Federal elections (demographics, socialization etc.). Our estimate of the turnout effect

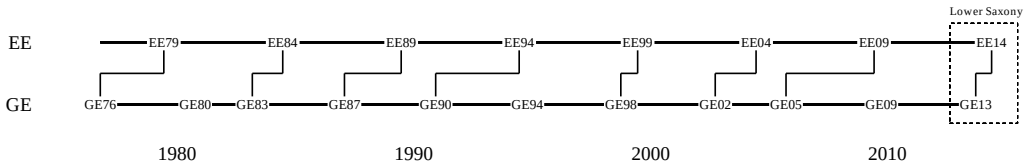

Figure 1: *Timeline of EE elections (EE) and general elections (GE) indicating which GE serves as baseline - 'maximum turnout potential' - for which EE election.*

of local elections is then based on the difference in the turnout decline from federal to EP elections. We also opt for GEs because they are temporally closer to any given EE than the preceding EE and thereby the parallel trends assumption implied by our DiD design is more likely to be met (cf. Fig. 1). In the case of the May 2014 EP election the preceding General election was in September 2013.

Depending on the specification, state or time fixed effects are included and the data may be time-series cross-sectional or, in the case of Lower Saxony, cross-sectional – details are provided in the corresponding tables and discussion of our two cases further below.

3.2 Data sources

The following list describes the datasets used in our analysis, with dataset names as found in the replication files.

- Dataset on European and General Elections in Lower Saxony, 1998-2014 (dataset nds_ee_ge_1998-2014.dta)

  Contains data on Federal and European Election results on municipality level for all elections between 1998 and 2014 in municipality border of 01.01.2014 provided by Landesamt für Statistik Niedersachsen (LSN) [Statistical Office of Lower Saxony], online at: `http://www1.nls.niedersachsen.de/`, accessed 01.02.2015, therein "Dataset K5000310" for European Elections 1999, 2004, 2009, 2013 and General Elections 1998, 2002, 2005, 2009, 2013 on level "Einheits-/Samtgemeinde" [community/joint community].

  The csoe2014 variable on concurrent mayoral elections in 2014 stems from data provided by the Office of the Elections Administrator in Lower Saxony (2014), "Direktwahlen EW14 in Niedersachsen", online at: `http://www.landeswahlleiter.niedersachsen.de/download/83177/Direktwahl-Termine_2014_Gesamtuebersicht_.pdf`, accessed 01.02.2015, therein municipality level elections.

- Dataset on incumbent mayors of Lower Saxony as of March 2014 (dataset nds_balance_2014.dta)

  Contains data on incumbent mayors in municipalities of Lower Saxony as of March 2014 provided by Landesamt für Statistik Niedersachsen (LSN) [Statistical Office of Lower Saxony], personal communication with Michael Kölbel, "Landesamt für

Statistik Niedersachsen (LSN) - Dezernat 14 - Informationsservice,Öffentlichkeitsarbeit", 22.04.2015.

- Dataset on mayoral elections in Lower Saxony in 2006 (dataset nds_balance_2006.dta)

  Contains data on mayoral elections in 2006 provided by Landesamt für Statistik Niedersachsen (LSN) [Statistical Office of Lower Saxony], "Ergebnisse der Direktwahlen am 10. September 2006 und der Stichwahlen am 24. September 2006 nach Schlüssel des Wahlortes" [Results of the mayoral elections on 10 September 2006 and the mayoral run-off elections on 24 September 2006 by ID of municipality], online at: `http://www.nls.niedersachsen.de/KW2006/UebersichtSchluessel.html`, accessed 01.08.2015, and all subpages with municipality level results therein.

- Dataset on timing of mayoral elections in Lower Saxony since 1997 (BM_all_merged.csv)

  Contains data on timing of mayoral elections in Lower Saxony. The file contains the dates of mayoral elections since 1997 for the municipalities of Lower Saxony. The dataset is compiled foremost from annual cross-sectional datasets on all incumbent mayors in Lower Saxony and their election date since 2004. These data are provided by Landesamt für Statistik Niedersachsen (LSN) [Statistical Office of Lower Saxony], personal communication with Michael Kölbel, "Landesamt für Statistik Niedersachsen (LSN) - Dezernat 14 - Informationsservice, Öffentlichkeitsarbeit", 19.01.2016. The dataset is completed with data on election dates on first round and run-off mayoral elections in Lower Saxony from 1997-2004. These data are provided by the Niedersächsische Landeswahlleiterin [Office of the Elections Administrator of Lower Saxony], personal communication with Hiltrud Scheferling, "Niedersächsische Landeswahlleiterin , Geschäftsstelle", 28.01.2016.

- Dataset on results of all European and General Elections since 1949 on statelevel (dataset turnout+ep+btw+todif2.csv)

  Contains data on results of all European and General Elections since 1949 on statelevel. Own data collection from multiple sources.

  Additionally, dataset federal_placebo.dta is a reduced form of turnout+ep+btw+todif2.csv containing all European Election Results in Germany on state-level and the result of the temporally closest General Election on state-level.

- Dataset on Federal and European Elections in municipalities on the state borders Lower Saxony, Hessia and North Rhine-Westphalia 2009-2014 (dataset federal_geogr_disc.dta)

  Bordering municipalities were selected using dataset "VG250", with municipality borders effective 31.12.2012, from "Bundesamt für Kartographie und Geodäsie" [Federal Office for Cartography and Geodesy], online at `http://www.bkg.bund.deorhttp://www.geodatenzentrum.de/` ; this data was also used to calculate municipality centroids (using the software QGIS).

  Municipality-level turnout data for European and General Elections:

  - for North-Rhine Westphalia and Hessia from "Regionaldatenbank Deutschland" of the "Statistische Ämter des Bundes und der Länder" [Federal Statistical Office and Statistical Offices of the Federal States], online at www.regionalstatistik.de, therein "Dataset 14211 Allgemeine Europawahlstatistik [European Election Statistics]" and "Dataset 14111 Allgemeine Bundestagswahlstatistik [General Election Statistics]"
  - for Lower Saxony see dataset nds_ee_ge_1998-2014.dta

  Municipality-level data on concurrent second order elections:

  - for North-Rhine Westphalia see federal level dataset (all of North Rhine Westphalia held communal elections together with the 2014 European Elections)
  - for Hessia: Hessisches Statistisches Landesamt [Statistical Office of Hessia], data online at `http://www.statistik-hessen.de/themenauswahl/wahlen/daten/index.html`, accessed 2015-02-01 -¿ Datafile "Liste der letzten Direktwahl aller hessischen Landkreise und Gemeinden (ZIP-Format) [List of last direct mayoral elections in Hessian districts and municipalities]"
  - for Lower Saxony see dataset nds_ee_ge_1998-2014.dta

- Dataset on average turnout in 2013 and 2014 mayoral elections in Lower Saxony (dataset nds_counterfactual_to.xlsx)

  For 2013 singular ME run-off data: Office of the Elections Administrator in Lower Saxony (2013), "Stichwahlen in Niedersachsen am 06. Oktober 2013 (vorläufige Ergebnisse und Wahlbeteiligungen)", online at: `http://www.landeswahlleiter.niedersachsen.de/download/81038/Vorlaeufige_Ergebnisse_und_Wahlbeteiligungen_der_Stichwahlen_am_6._Oktober_2013.pdf`, accessed 01.02.2015

  For 2014 singular ME run-off data: Office of the Elections Administrator in Lower Saxony (2014), "Vorläufige Ergebnisse der Stichwahlen in Niedersachsen am 15. Juni 2014", online at: `http://www.landeswahlleiter.niedersachsen.de/download/88003/Vorlaeufige_Ergebnisse_der_Stichwahlen_am_15._Juni_2014.pdf`, accessed 01.02.2015

- Data from survey in Lower Saxony before and after the 2014 European election (medw_survey_lower_saxony.dta)

  Survey conducted in Lower Saxony before and after the 2014 European election. Part of the Making Electoral Democracy Work project (Blais 2010).

3.3 Maximum turnout potential

To estimate the effect of CSOE on EP election turnout we use the difference of EP turnout to turnout in the temporally closest federal election as dependent variable. By calculating this turnout differential we control for state level differences in what we call 'maximum turnout potential'. This strategy serves to cancel out all state level factors that similarly affect state and federal elections (demographics, socialization etc.).

As a first placebo test, we note that turnout in federal elections is not substantially or significantly affected by concurrent second-order elections. Results of the estimation are given in table 1. This results supports our argument that turnout in the federal election does indeed capture what we call maximum turnout potential.

	Model 1
Local	0.010
	(0.011)
Land	0.010
	(0.005)
R^2	0.946
Adj. R^2	0.766
Num. obs.	142

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table 1: *Estimating the (non-)effect of CSOE on turnout in federal elections. Fixed-effects model with state (within-transformation) and year (dummies, estimates omitted) fixed effects.*

3.4 Generalization of effects

Here, in the appendix we generalize our findings to the federal level. Here, the unit of analysis is an election result at the federal state level.[1]

Municipal elections are held state-wide and the date is set by the state government – our case of mayoral elections in Lower Saxony in 2014 was an exception to this rule. This means assuming exogeneity of concurrency is less plausible when the unit of analysis are municipal election results at the state level. Hence, our goal is not to estimate another treatment effect on a different level but to check for observable implications of our findings. If CSOE do indeed exert a causal and positive effect on turnout we should expect to see higher turnout in states which hold municipal elections concurrently with EE than in those that do not.

The functional form for our models estimated on a panel of state-level EE election results is

$$(turnout_{it}^{EE} - turnout_{it}^{GE(preceding)}) = \beta_0 + \beta_1 D_{it} + \beta_2 O_{it} + \epsilon_i \tag{1}$$

$$(turnout_{it}^{EE} - turnout_{it}^{GE(preceding)}) = \beta_0 + \beta_1 D_{it} + \beta_2 O_{it} + \zeta_i + \tau_t + \epsilon_{it} \tag{2}$$

$$turnout_{it}^{EE} = \beta_0 + \beta_1 D_{it} + \beta_2 O_{it} + \zeta_i + \tau_t + \epsilon_{it} \tag{3}$$

The results for these models are reported in Table 8. D_{it} as before, is the treatment indicator, O_{it} is a dummy to indicate other concurrent ballots, state elections or referendums and ζ_i and τ_t are state and year fixed effects respectively.

[1] Further details on research design and results can be found in the appendix.

4 A quasi-experiment in Lower Saxony

4.1 Empirical tests for pre-treatment trends, placebo effects and balance of control and treatment group

4.1.1 Treatment effects and pre-treatment trends for the 1998-2004 European Elections

Table 2 tests whether trends between municipalities that held concurrent elections in 2014 differ in the 1998-2014 electoral periods. They do not, except of course for the treatment period (2014).

	(1)
	to
year=2004	-4.08***
	(0.40)
year=2009	-4.23***
	(0.28)
year=2014	0.35
	(0.38)
2014csoe=1 × year=2004	-0.40
	(0.49)
2014csoe=1 × year=2009	0.72
	(0.44)
2014csoe=1 × year=2014	10.8***
	(0.57)
Constant	44.8***
	(0.16)
N	1656.00
r2_a	0.70

Table 2: *The table shows results of a fixed effects regression with state and municipality fixed effects on turnout for the Lower Saxony European Elections (1999, 2004, 2009, 2014), with seperate year trends for communities that held concurrent mayoral elections in 2014. Standard errors clustered at community level are in parantheses. ** (*, ***) indicates p<0.05 (0.10, 0.01)*

4.1.2 Balance between treatment and control group characteristics in 2014

We conducted balance tests on pre-treatment covariates of mayoral elections (see Table 3. Specifically, we tested whether the distribution of mayoral party and gender of mayor is similar in both groups, whether treatment and control communities are equally distributed in the four regions of Lower Saxony, whether treatment correlates with different types of municipalities (rural community, city, joint (rural) community), whether mayors

had to face a runoff election, whether mayors are in a consecutive term, and how large the electorate in a municipality is (absolute and split into the subgroups used in the paper). Concerning most of these variables, we find no significant differences between both groups (following a simple two-sided t-test). Significant differences are present, first, only for the share of mayors in a consecutive term, which is a consequence of the selection process as in the treatment group communities following the regular elections cycle without replacements during the term are overrepresented. See below for a test showing that this does not bias our treatment effect. Significant differences are present, second, for the share of very small communities with less than 7500 inhabitants (overrepresented in the control group) - this does not bias our results, however, as the specific treatment effects for these subgroups estimated in the paper show as well as the parallelism of the pre-treatment trend by community size subgroups (see Table 3). Finally, especially the insignificance of differences in the share of mayors facing runoff elections is comforting, given potential concerns about differences in average competitiveness of treatment and control communities. Note however, that this result is based on a small subsample for two reasons: We do not observe the presence of runoff elections for the period mid-2011 to mid-2013 as the CDU government abolished runoff elections in mayoral races during this time. We were able to gather information on runoff elections only for selected timeframes where mayors were elected on a joint date in several communities.[2]

[2]These timeframes were: 9/10/2006 and 9/24/2006; 3/4/2007 and 4/22/2007; 9/22/2013 and 10/6/2013; 5/25/2014 and 6/15/2014 (all treatment observations); 9/28/2014 and 10/12/2014.

	Control mean	Treated mean	Diff-In-2014 Means(se)	N Control	N Treated
cdu	0.33	0.29	0.04 (0.05)	211	201
spd	0.30	0.32	-0.02 (0.05)	211	201
independent	0.37	0.39	-0.02 (0.05)	211	201
female	0.09	0.10	-0.01 (0.03)	211	201
region_braunschweig	0.21	0.16	0.05 (0.04)	211	201
region_hannover	0.24	0.20	0.03 (0.04)	211	201
region_lueneburg	0.25	0.26	-0.01 (0.04)	211	201
region_weser_ems	0.30	0.37	-0.07 (0.05)	211	201
community	0.37	0.40	-0.02 (0.05)	211	201
joint_community	0.31	0.29	0.01 (0.05)	211	201
city	0.32	0.31	0.01 (0.05)	211	201
runoff	0.29	0.22	0.07 (0.06)	58	201
mayor in consecutive term	0.26	0.46	-0.20*** (0.05)	211	201
eligibles	15261.31	14301.07	960.24 (2388.99)	213	201
pop<7500	0.37	0.27	0.10** (0.05)	213	201
7500<pop<15000	0.39	0.47	-0.08 (0.05)	213	201
15000<pop<30000	0.16	0.18	-0.02 (0.04)	213	201
pop>30000	0.08	0.08	0.00 (0.03)	213	201
Observations	414				

Table 3: *The table reports t-tests for differences in means comparing 2014 characteristics of treatment group and control group mayors.*

4.1.3 Trends by reelection-status

Given the imbalance between treatment and control group with respect to municipalities with mayors being in a consecutive term before European Elections 2014, we checked whether our results hold controlling for reelection-status. Figure 2 below shows the trend in EE turnout for communities with and without reelected mayors by 2014 treatment status. But while communities with reelected mayors of the control group seem to exhibit higher EE election turnout [2.09 (1.24)] in 2004, significant on the 10%-level, this is neither the case in 1998 nor 2009. Especially the parallel trend of control group mayors by reelection status between 2009 and 2013 suggests that our results are not biased.

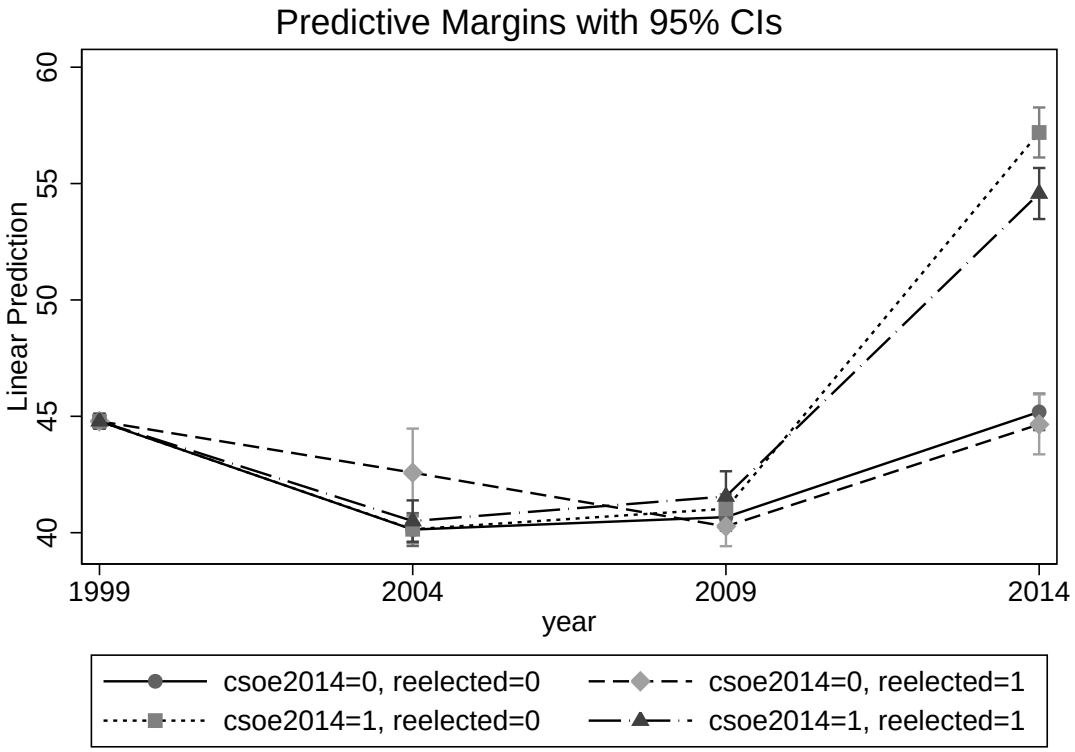

Figure 2: *Predictions for EE and GE turnout of an average community in Lower Saxony by treatment status in 2014 and whether a mayor was a reelected mayor in 2014, with 95% confidence intervals. 1999 is the baseline year. Predictions follow from regressions with municipality and year fixed effects, clustered at the community level. Election results are in 2014 administrative boundaries with data from the Statistical Office of Lower Saxony (`http://www.statistik.niedersachsen.de`.). Reelection status is observed for 406 out of 414 municipalities.*

4.1.4 Balance between treatment and control groups in 2006

To directly compare the competitiveness levels of mayoral elections in both groups, we would need to observe our treatment and control group at a different point in time. Optimally, we would even observe both groups in a situation where treatment and control observations vote at the same point in time, to hold the general political environment constant. As the last regular mayoral election cycle had its last election in 2006, we

compare our treatment and control observations at this point in time (see Table 4). Importantly, we only observe 97, and thus less than half, of our control communities in 2006 – the sample is therefore potentially biased. Nonetheless, it is reassuring that when testing for differences in turnout levels, average number of parties competing and the share of mayors facing runoff elections we find no significant differences between both groups. Additionally, we checked for differences in the average number of eligible, age of elected mayor, community type, party affiliation of the election winner, relative vote share of leading first-round candidate,[3] absolute margin between first-round leader and runner-up (within contested municipalities), and share of municipalities with margin less than 5 percentage points (within contested municipalities). On the 5% level, the only significant differences rests in an elected mayors age, higher in the control group, which makes sense as these communities in the following were more likely to not sustain a full electoral cycle. This indicates that resignations were not driven by strategic considerations, but more likely age-related. Additionally, the community type rural municipality seems to be over- and SPD-led municipalities underrepresented in the treatment group (differences significant on the 10% level), which points towards a potential bias in the 97 control communities observable here as these differences are not observed for 2014 see Table 3).

[3]One note of caution is warranted here: We estimated this comparison and the winning margin variables drawing on the share of mayors from the SPD, CDU, Green Party, FDP and "All Others". We had to combine the vote share of "all other" competing candidates to one variable due to data limitations, and have to assume it is only one "other" candidate running there. However, it is rare that more than one strong independent candidate runs in a municipality.

	(1)				
	Control/mean	Treated/mean	Diff-In-2014-Means/se	N Controls	N Treated
turnout_2006	57.33	56.82	0.51 (0.80)	97	200
number_candidates	2.86	2.67	0.19 (0.15)	97	200
runoff_election	0.32	0.23	0.08 (0.05)	97	200
eligible_voters	18742.85	14795.11	3947.74 (3523.00)	97	200
age	51.43	49.24	2.19** (0.87)	97	200
city municipality	0.33	0.32	0.01 (0.06)	97	200
joint municipality	0.38	0.29	0.09 (0.06)	97	200
rural municipality	0.29	0.39	-0.10* (0.06)	97	200
CDU win	0.28	0.32	-0.04 (0.06)	97	200
other party win	0.28	0.35	-0.08 (0.06)	97	200
SPD win	0.44	0.33	0.11* (0.06)	97	200
relative winner's vote share	63.74	64.61	-0.87 (2.19)	97	200
margin to runner-up	27.61	28.19	-0.58 (2.75)	86	179
share of municipalities with margin less 5 percentage points	0.14	0.15	-0.01 (0.05)	86	179
N	297				

Table 4: *The table reports t-tests for differences in means comparing outcomes and characteristics of the 2006 mayoral elections in Lower Saxony, involving 297 municipalities, of which 200 are in the 2014 treatment group and 97 are in the 2014 control group. The last two rows draw only on municipalities with more than one candidate competing.*

4.1.5 Placebo tests for treatment regressions

In the following, we report placebo regressions, drawing on the turnout for the 2009 European Parliament and 2009 Federal Parliament election (election held on 27 September 2009), both unaffected by CSOE.

Table 5 shows three placebo tests:

Model 1 provides our core placebo test for the full sample with a single dummy for communities that held CSOE in 2014. Our test results indicate that the respective trend coefficient is very small, at 0.08 percentage points, and statistically insignificant. We can therefore plausibly assume that CSOE and non-CSOE-communities in 2014 do not differ in (pre-treatment) turnout trends. In the manuscript, we also report results of a sub-group analysis to learn on heterogeneity of the CSOE effect. To test whether the number of local candidates running and EP turnout might be endogenous, e.g. via local political culture, we assess whether turnout trends in these sub-groups are correlated with treatment assignment. Model 2 tests pre-treatment differences where CSOEs are held contested (more than one candidate running) vs. uncontested in 2014. Model 3 finally assesses whether communities with CSOE of different size (population >5000, >10000, >30000) follow different trends. Again, the respective coefficients in Model 2 and 3 are substantially small and far from conventional levels of significance.

	DiD (EP2009-FE2009)		
	(1)	(2)	(3)
	D.to	D.to	D.to
CSOE	-0.037		0.30
	(0.30)		(0.67)
uncontested CSOE		-0.14	
		(0.73)	
contested CSOE		-0.10	
		(0.32)	
close CSOE		0.19	
		(0.45)	
population=7500			-0.63
			(0.52)
population=15000			-0.36
			(0.52)
population=30000			-0.25
			(0.58)
csoe=1 × population=7500			-0.45
			(0.82)
csoe=1 × population=15000			-0.22
			(0.89)
csoe=1 × population=30000			-0.44
			(0.91)
Constant	-33.0***	-33.0***	-32.7***
	(0.21)	(0.21)	(0.37)
N	414.00	414.00	414.00
r2_a	-0.00	-0.01	-0.00

Table 5: *The table shows results of a regression with on the difference in 2009 turnout between European and Federal Elections on: a dummy indicating communities with occurence of CSOEs in 2014 (Model 1); the csoe-dummy split into subgroups of competitiveness (only one candidate ('uncontested') in concurrent mayoral elections 2014, two or more candidates ('contested') or two or more candidates with winning margin smaller than 10 percentage points ('close') in concurrent mayoral elections 2014) (Model 2); Model 3 reports results with an interaction term between concurrent elections and dummies for communities with population ¿ 7500, ¿10.000 and ¿30.000. Robust standard erros in parentheses. ** (*, ***) indicates p<0.05 (0.10, 0.01)*

4.2 Using the preceding EE instead of the temporally closest GE as baseline period

	Turnout rate
	DiD (EP2014-EE2009)
Constant	4.6**
	(0.3)
Mayoral election	10.1**
	(0.5)
Observations	414
Adjusted R^2	0.5
Note:	*p<0.05; **p<0.01

Table 6: *Lower Saxony ATE analysis. Results of cross-sectional OLS regressions of 2014 turnout trend between the 2014 European Election and the 2009 European Election on treatment indicator of concurrently held mayoral election)*

4.3 Treatment intensity subgroup analysis

The following table (Table 7) shows that regression model underlying Figure 5 in the manuscript.

	Dependent variable:
	DiD (EP2014-GE2013)
Constant	−28.7**
	(0.2)
Uncont./City	2.5
	(3.7)
Cont./City	6.8**
	(1.1)
Close/City	5.5
	(3.7)
Uncont./Town	2.9
	(1.8)
Cont./Town	9.4**
	(0.7)
Close/Town	11.9**
	(1.8)
Uncont./Small Town	4.3**
	(0.8)
Cont./Small Town	11.5**
	(0.5)
Close/Small Town	12.3**
	(1.2)
Uncont./Village	5.6**
	(0.9)
Cont./Village	14.9**
	(0.7)
Close/Village	18.2**
	(1.7)
Observations	416
Adjusted R^2	0.7
Note:	*p<0.05, **p<0.01

Table 7: *ATE estimates for treatment intensity subgroups. Sub- groups are defined by the size of the municipality and the competitiveness of the mayoral race. Results are reported visually by means of a coefficient plot in Figure 5 in the manuscript.*

4.4 Generalization of effects

To assess the external validity of our results we conduct an analysis of the variation in concurrent EEs and local elections between the 16 German states over the last 35 years. For this, we no longer analyze mayoral elections but local council elections which in all the 16 states are held at one point in time across the whole state, usually every five to six years, depending on state regulations. We report differences between states with and without CSOEs of around ten to thirteen percentage points, very much in line with our findings from Lower Saxony. Because states set CSOEs independently our case for identification is not as strong as for Lower Saxony. Consequently, these results should only be regarded as indicative and we avoid to speak of 'treatment effects'.

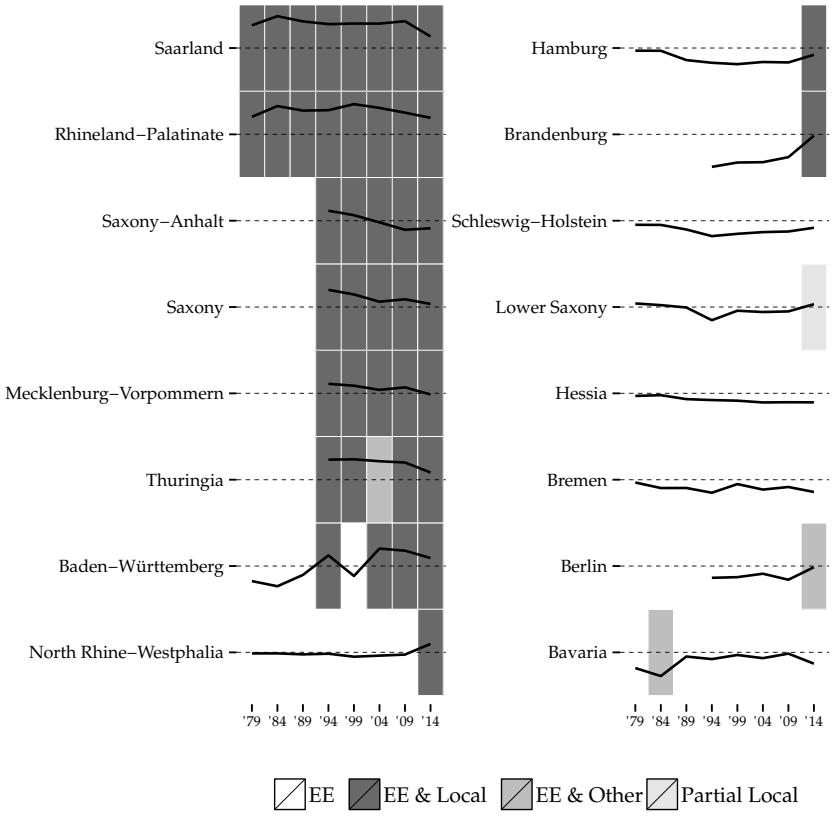

Figure 3: *Concurrency of EE, state-level and local elections. Boxes indicate concurrency of EE elections with local elections, state-level elections (light gray) – in Thuringia – or a state-wide referendum (dark gray) – in Bavaria and Berlin – or partial local elections (lighter gray) – in Lower Saxony. (Dashed) horizontal lines indicate mean turnout in a given EE election.*

We assembled a data set on state-level election returns for all eight European elections held in Germany since 1979 and all general elections in the same period.[4] Concurrency in general depends on the overlap of European and local electoral cycles (Fig. 3).[5] The

[4]West Germany (ten states) participated in EE between 1979 to 1989, after reunification this number rose to 16 states.

[5]Term length for elected offices at the local level most often are five years matching the legislative term of the European Parliament which is why once they are held together EP and local elections synchronize, unless election days are explicitly set apart (Fig. 3)

'effect' of CSOE can easily be 'seen' in the case of Baden-Württemberg. This state always saw below-average turnout in EE up until 1994 when, for the first time, it held local elections concurrently with European elections. EE turnout dropped below the national average again in 1999, when the European and local election were held on different dates, and returned to and remained at above-average levels when electoral calendars were resynchronized from 2004 onwards.

In the following, we present our results for three different models. First, we estimate a pooled model on the dataset of all eight EE elections regressing the difference between turnout in the EE and the preceding GE on our treatment variable indicating whether a state held local elections in parallel with the EE (Tab. 8, model 1).[6] The difference in turnout between GE and EE elections is always negative reflecting the fact that European elections generally see lower turnout than general elections. In states that did not hold concurrent elections the difference in turnout between national and European elections is on average -32.3 percentage points.[7] The turnout differential between European and general election is less pronounced in states that held local elections: the estimated *average difference between CSOE- and no-CSOE states* is 14.7 percentage points.

	(1)	(2)	(3)
Local	14.7**	10.5**	11.7**
	(1.2)	(2.8)	(3.3)
Intercept	-32.3**	-24.6**	64.4**
	(0.8)	(1.4)	(1.7)
State Fixed-Effects	No	Yes	Yes
Year Fixed-Effects	No	Yes	Yes
R^2	0.477	0.845	0.905
N	110	110	110

Standard errors in parentheses
* $p < .05$, ** $p < .01$

Table 8: *Regression models on a panel of state-level EE results with the difference in turnout in a EE and the preceding GE as dependent variable (1) and concurrent local elections and concurrent other elections or referendums as independent variable, with (2) the same specification but with additional state and year fixed effects, and with (3) only EE turnout as the dependent variable and the aforementioned independent variables and fixed effects – all with clustered standard errors. All models include a dummy variable to indicate concurrent state elections or referendums (only three cases) which is not reported in the table.*

Second, by adding state and time fixed-effects to the specification of model 1 we estimate the change in turnout resulting in the move from a stand-alone EE to concurrent European and local elections (Tab. 8, model 2). The *average turnout increase in states that introduced CSOE* is 11.7 percentage points. Third, we extend the classical

[6] Cameron, Gelbach, and Miller (2008) caution against the use of conventional standard error adjustments in panel data analysis with a small number of clusters advocating the use of bootstrapping as alternative. We present results with clustered standard errors here and results with bootstrapped standard errors in the appendix, Table 7. No substantial change in standard error estimates and corresponding significance levels occurs.

[7] Models 2 and 3 include state fixed effects which are estimated via the within-transformation. The intercept displayed is the average value of the fixed effects and as such does not lend itself to such a straightforward interpretation.

Difference-in-differences set-up to multiple time-periods by regressing EE turnout on our local elections dummy, another elections or referendums dummy as well as state and year fixed effects (Tab. 8, model 3).

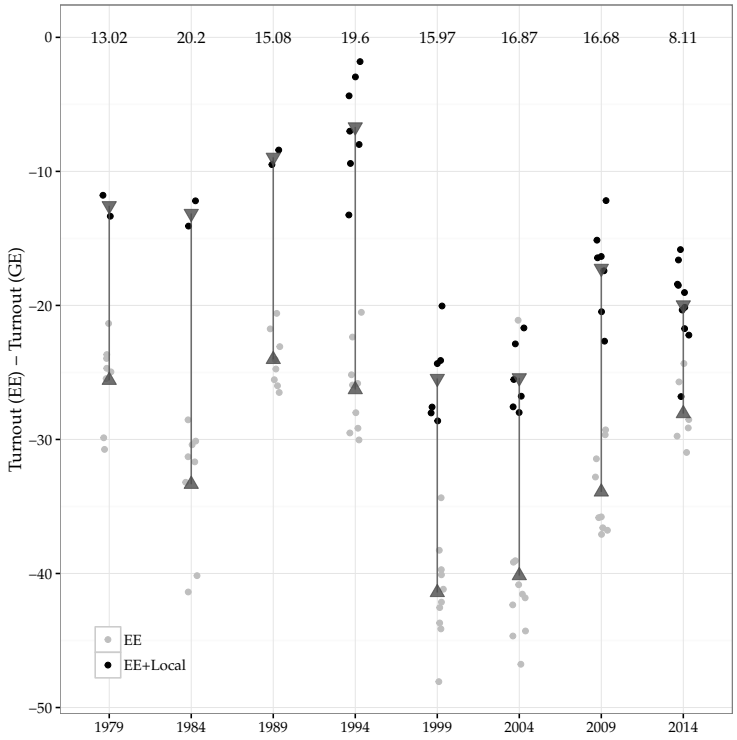

Figure 4: *Difference-in-differences estimates for the turnout effect of concurrent local elections by European Election. Difference between turnout in European election (EE) and preceding general election (GE) on y-axis. Election-specific difference-in-difference estimates – all significant at the .1% level – are printed in the top part of the graph.*

These estimates are consistently higher than our estimates obtained from the data from Lower Saxony described above. Although the argument for exogeneity of treatment is less strong for state-level data we believe it is unlikely that these differences are indicative of strong bias. Note that if there is any systematic relationship between turnout levels and CSOE it is that states with lower turnout should be more likely to opt for concurrency than states with higher turnout. Indeed, it is former East German states that have consistently synced local with European elections and that also have consistently lower turnout levels than former West German states. Note also that in most German states, elections to the municipal council and to the mayoral office, if it is an elected office[8], are held concurrently and therefore see higher turnout than stand-alone mayoral elections which translates into a stronger CSOE effect.

To assess the heterogeneity of our results over time we also estimated separate 'Difference-in-differences' models. We again use the difference in turnout to the preceding GE for each EE and now obtain the *election-specific average difference between CSOE- and no-CSOE states*. For each and every European election, average turnout in states with concurrent local elections is consistently higher than in states without, with

[8]In some states the mayor is elected by the municipal council.

average differences varying from 8 to 20 percentage points (Fig. 4).[9]

Finally, the robustness in our results is supported by placebo tests (presented in the appendix, table 9) that show that CSOE-states are unlikely to be on a differing turnout trend compared to non-CSOE states and that shifting the treatment period forward does not yield substantially or statistically significant results. Last but not least, we get similar CSOE effects when exploiting the geographic discontinuity of concurrency for municipalities at state borders (Table 10 and figure 2 in the appendix), where our identifying assumptions are more likely to be met. Overall, this provides some evidence that the estimates we present here likely approximate treatment effects of concurrent local elections at the state level.

In this section we have tried to generalize our results to the full population of European elections in Germany on the basis of state-level returns. The fact that state governments set the term lengths and dates for municipal elections gives rise to endogeneity concerns. Nevertheless, the results presented here suggest that a CSOE effect is at play, too, which may even be higher when full municipal elections are held concurrently with EE – although we are unable to quantify it exactly.

4.4.1 Alternative estimation of state-level results

Cameron, Gelbach, and Miller (2008) caution against the use of conventional standard error adjustments in panel data analysis with a small number of clusters advocating the use of bootstrapping as alternative. Therefore, we present results with clustered standard errors in the text and present results with bootstrapped standard errors here in the appendix. The bootstrapped results are based on 1000 bootstrap replications. No substantial change in standard error estimates and corresponding significance levels occurs.

[9]There are only two exceptions where a single CSOE state experienced turnout lower than any non-CSOE state: Firstly, in 2004 Thuringia did not hold concurrent local elections but concurrent state elections which is why it experienced considerably higher turnout than one would expect from a state without CSOE. Secondly, Hamburg which in 2014 held CSOE for the first time still saw less than average turnout when compared to other states in 2014. Note however that the state did see an increase in turnout vis-à-vis the prior European election 2009 and that Hamburg is one of the three German city states which consistently obtain lower turnout than larger states. One reasons for this is that local elections are less salient as districts are merely administrative units with less autonomy than municipalities.

	(1)	(2)	(3)
Local	14.7**	10.5**	11.7**
	(1.5)	(3.6)	(3.9)
Intercept	-32.3**	-24.6**	64.4**
	(0.9)	(1.8)	(2.2)
State Fixed-Effects	No	Yes	Yes
Year Fixed-Effects	No	Yes	Yes
R^2	0.477	0.845	0.905
N	110	110	110

Standard errors in parentheses
* $p < .05$, ** $p < .01$

Table 9: *Regression models on a panel of state-level EE results with the difference in turnout in a EE and the preceding GE as dependent variable (1) and concurrent local elections and concurrent other elections or referendums as independent variable, with (2) the same specification but with additional state and year fixed effects, and with (3) EE turnout as the dependent variable and the aforementioned independent variables and fixed effects – all with bootstrapped standard errors. All models include a dummy variable to indicate concurrent state elections or referendums (only three cases) which is not reported in the table.*

4.4.2 Using the closest GE instead of the preceding GE as baseline period

As explained in the paper and above we choose the preceding federal election, which is not necessarily the temporally closest GE to an EE. We difference against turnout in the GE because we want to capture the 'maximum turnout potential' at the time of the election. GE then are always in an untreated 'control' state as concurrent second-order elections do not change GE, i.e. first-order, turnout. Arguably, GE turnout delivers the best approximation of 'maximum turnout potential' when temporal distance between the elections is minimized.

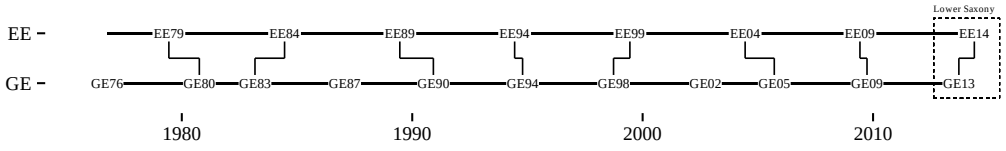

Figure 5: *Timeline of EE elections (EE) and general elections (GE) indicating which GE serves as baseline - 'maximum turnout potential' - for which EE election.*

When looking at the temporally closest elections, the preceding GE is the temporally closest GE in three cases while in five cases the temporally closest GE postdates the EE (see Fig. 5). The average absolute temporal distance between a European and the closest general election is 0.75 years while the average absolute distance between EE and preceding GE is 2.25 years.

Here we present results that we obtain when using the difference in turnout to the temporally closest GE rather than the preceding EE. We reproduce models 1 and 2 from Table 9. While this specification minimizes the temporal difference between 'control' and 'treatment' period it opens up the possibility that the EE influences turnout in the

subsequent GE. This is unlikely as not even concurrent elections influence turnout in a GE (see Tab. 1). Nevertheless, we opt for showing results for the difference to the preceding EE in the main text. It evades the problem just outlined and is closer to the classic DiD setup. The results obtained for the two difference operationalizations are substantially the same. No operationalization is strictly better than the other in terms of precision of the estimates or model fit.

	(1)	(2)
Local	13.7**	10.7**
	(1.4)	(2.7)
Intercept	-31.1**	-22.7**
	(0.9)	(1.4)
State Fixed-Effects	No	Yes
Year Fixed-Effects	No	Yes
R^2	0.401	0.860
N	110	110

Standard errors in parentheses
* $p < .05$, ** $p < .01$

Table 10: *Replication of Table 2, models 1 - 2, using the turnout differential between EE and closest GE. (1) Regresses the difference in turnout between EE and preceding GE on dummies for concurrent local elections and concurrent other elections or referendums. (2) adds state and year fixed effects tot specification – all with clustered standard errors. All models include a dummy variable to indicate concurrent state elections or referendums (only three cases) which is not reported in the table.*

4.4.3 Placebo tests

While the timing of EE is set at the European level, and plausibly exogenous to turnout and electoral preferences on the state level, the timing of local elections is not. State level discretion in election timing is potentially worrying and endogeneity thus might be a potential concern.[10] In our generalization exercise we therefore also analyzed the difference from land-level turnout potential (i.e. federal election turnout) and trends in our dependent variable to effectively control for all potential time constant confounders. Here, we conduct placebo tests to justify the assumptions of our research design.

We report two placebo tests in Table 11. Here, we on the one hand want to assess whether states that introduce and uphold CSOEs are on a different turnout trend as compared to non-CSOE states. For this, we replace the turnout to European elections with the closest Federal Election Turnout in the said state and estimate the effect of the CSOE placebo on the trend between those general elections. As reported in Model 1, the estimated placebo effect is positive, but small (0.84 percentage points), and insignificant.

On the other hand, in Model 2, we assess specifically the turnout trend for the introduction of CSOEs in several federal states in 2013 and estimate whether these states

[10]Clearly, the level of turnout varies e.g. between states introducing CSOEs, as most East German states, with generally lower turnout levels, conducted CSOEs with their first elections.

were on a differentiating trend in the 2004-2009 period. The dependent variable is the double difference of the 2009 and 2004 European elections to the 2005 and 2009 Federal elections ((2009EP-2009FE)-(2004EP-2005FE)). The estimated coefficient for the CSOE placebo is again positive, but small (around 1.2 percentage points) and insignificant (the coefficient size is similar to using a simple difference in difference on 2004-2009 EE turnout).[11] Overall, these placebo tests provide clear justification for our estimation strategy.

	Turnout rate	
	DiD:	DiDiD:
	1980-2013 closest FEs	(EE2009-GE2009)-(EE2004-GE2005)
Local election	0.84	1.233
	(1.10)	(1.47)
Constant	-2.47**	6.94**
	(0.63)	(0.73)
N	94	16
R^2	0.01	0.04

Standard errors in parentheses. * $p < .05$, ** $p < .01$

Table 11: *State level placebo regressions with robust standard errors. Model 1 regresses a dummy of CSOEs for the 1979-2014 EE election on the first differences between the closest Federal Parliament Elections. Model 2 reports estimates for a CSOE dummy indicating federal states introducing CSOEs in 2014 on the first difference of their 2005-2009 turnout trend, with the difference between EE turnout and the closest Federal Election turnout as dependent variable.*

4.5 Geographic Discontinuities

The following section provides additional evidence for the validity of the CSOE effect on turnout as described above. To corroborate our results we use a design based on geographic discontinuities and matching for the last electoral period 2009-2014 (Keele, Titiunik, and Zubizarreta, 2015; Keele and Titiunik, 2015b). Although our set-up is designed to account for time-constant state-level confounders, unobserved time-varying heterogeneity that could determine turnout and might be related to treatment is a potential confounder (i.e. changes in economic structure). Our design builds on the insight that a comparison of adjacent communities will improve the average balance of observable and unobservable confounders relative to any random pair of communities (Dube, Lester, and Reich, 2010). Placebo analysis give an indication for the plausbility of the design.[12] This analysis draws on the same dependent variables as above, thus taking time-constant confounders directly into account. As we do not expect treatment

[11] We additionally added a lead effect to the treatment model (Table 9, Model 1), which is insignificant and substantially small Kodzi (comp. for an overview on this idea of a Granger-test of causality 2010, p. 178).

[12] Successful placebo tests are especially important as crossing state borders implies 'compound treatment effects', i.e. not only the concurrency of local elections but as well other contextual variables change sharply. Identification of the CSOE effect therefore relies on what Keele and Titiunik (2015a) call the 'Compound Treatment Irrelevance Assumption'. Successful placebo test indicate, that other contextual variables are unlikely to be systematically related to turnout and can therefore be plausibly ignored.

heterogeneity along the border we restrict ourselves to a comparison of mean turnout differentials in adjacent communities.

We analyse specifically the adjacent communities along the border of Lower Saxony (with mayoral elections about half its communities in 2014) and Hessia (in general no CSOE, with the exceptio of few mayoral elections in 2014) as well as Lower Saxony and North-Rhine Westphalia (local council elections in all communities in 2014). Table 12 reports results of placebo estimates (Model 2) and treatment effect estimates (Model 1) following nearest neighbour matching on longitude and latitude of municipality centroids of all treatment and control communities along the border of Lower Saxony with Hessia and North-Rhine Westphalia, with the difference of turnout to the European Parliament elections to closest Federal Elections as dependent variable. Figure 6 shows the distribution of turnout by treatment status and border for the 2013-2014 (treatment) period and the 2009 (placebo) period.

As can be seen, the turnout differential of treated and control municipalities is remarkably similarly distributed in the pre-treatment period. There is no indication of a large and/or significant pre-treatment difference between communities that conducted CSOEs (placebo estimate of -1.02 percentage points). On the contrary, the estimated ATE of 11.45 percentage points in Model 1 of Table 12 is very much in line with the effect size estimated above. Additionally, the upper panel of Figure 6, especially the comparison of the CSOE effect along the border of Lower Saxony to North-Rhine Westphalia, reveals that concurrent mayoral (in Lower Saxony) and concurrent local council elections (in North-Rhine Westphalia) show a very similar CSOE effect.

	(1)	(2)
	DiD EE2014 - GE2013	DiD EE2009 - GE2009
Mayoral/local election	11.45**	-1.020
	(0.977)	(0.955)
N	105	104

Standard errors in parentheses. * $p < .05$, ** $p < .01$

Table 12: *The table reports Average Treatment Effects (Model 1) and placebo estimates (Model 2) for communities along the state border of Lower Saxony (partly municipality-level mayoral elections) with North-Rhine Westphalia (municipality level local elections) and Hessia (partly municipality-level mayoral elections) following nearest neighbour matching of treated and control units on community centroid latitude and longitude with one match per observation (robust standard errors in parentheses).*

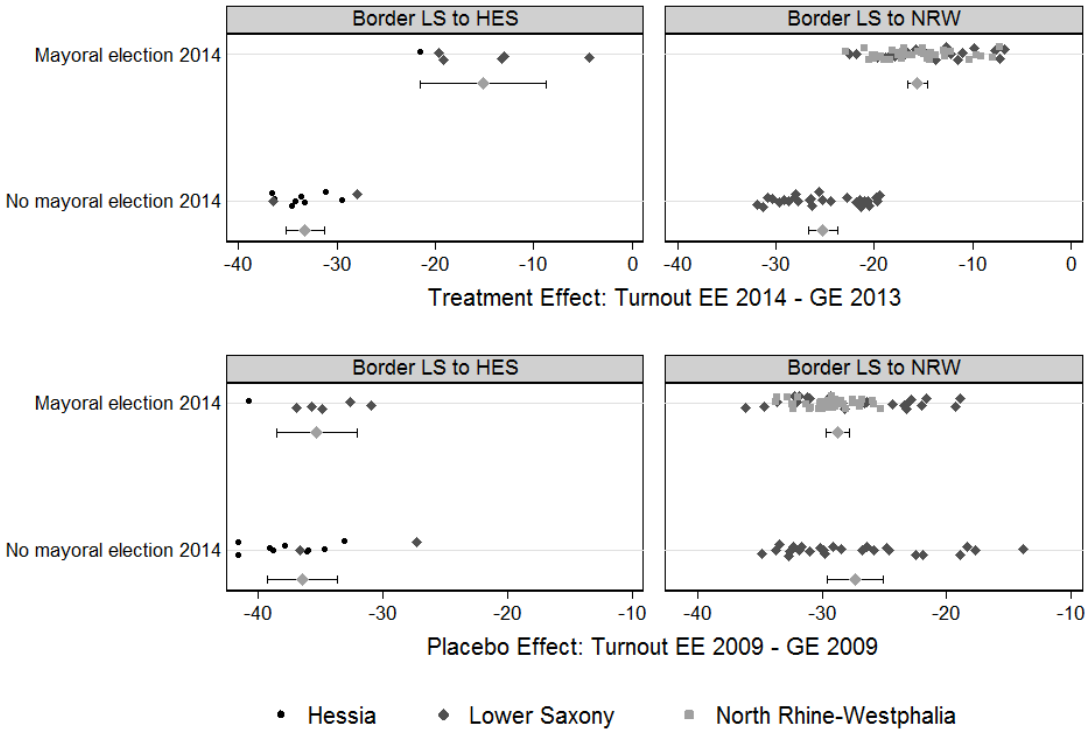

Figure 6: *The table shows a comparison of the turnout differential (European Election to closest Federal Election) for border communities in states primarily with or without CSOEs. The upper panel shows effects for the treatment period, the lower panel the placebo distribution for the pre-treatment period. Left panel compares municipalities in Hessia (HES; no CSOEs with few exceptions) with adjacent communities in Lower Saxony (LS; mostly CSOEs). Right panel compares adjacent communities in North Rhine-Westphalia (NRW; CSOEs) with municipalities in Lower Saxony (LS; partly CSOE). Grey diamonds with bars indicate the respective distribution means with 95% confidence intervals.*

5 Discussion

5.2 Who are the additional voters?

The natural follow-up question then is who these additional voters are. Are these voters which are primarily interested in the additional election that the SOE is combined with (voter type D in Figure 1 in the manuscript), or are these voters who only turn out in concurrent elections (voter type C)? The former would indicate that CSOEs increase turnout by combining different arena-specific sub-electorates, the latter that CSOEs motivate 'completely new' voters otherwise not participating in second-order elections.

This important question can only be answered with individual-level data. Unfortunately, available voter surveys are far from ideal, as they mostly focus on only one electoral arena, and do not address local contests and politics. The best survey data at our disposal is a voter survey on the 2014 EE in Lower Saxony by the Making Electoral Democracy Work project (Blais, 2010). We test an observable implication that might give some insight into the motivations of the additional voters. If the concurrency effect is driven by voters of type D, i.e. voters that would vote in a singular mayoral, but not in a singular EE, we would expect voters that are more interested in local politics to be more likely to turn out in EEs, if these are held concurrently with local elections. For lack of a better measure, we proxy interest in local politics with the degree of local attachment.[13] The treatment is whether the 2014 EE was held concurrently with a mayoral election in the respondent's home municipality.

Column 1 in Table 13 shows that average local attachment scores are balanced between the control and treatment group. Column 2 indicates that the general treatment effect replicates in the survey data. Column 3 shows that treated respondents with high local attachment are eight percentage points more likely to report EE turnout than their untreated counterparts.

	(1) Local Attachment	(2) Turnout	(3) Voted EE & Locally Attached
NO CSOE	7.5	0.68	0.55
CSOE	7.6	0.76	0.62
Differences	0.1 (0.57)	0.08 (0.01)	0.08 (0.04)
N	969	814	790

Table 13: *Voter survey data from Lower Saxony. Comparison of mean local attachment (column 1), turnout between municipalities that held concurrent mayoral elections and those that did not (2), and the share of voters with a local attachment (3). P-Values for difference-in-means (column 1) and χ^2-tests respectively (columns 2 and 3) in parentheses.*

Keeping the limited ability to identify different types of voters based on the available survey data in mind, our tentative conclusion is that there is a substantial amount of voters primarily interested in the local contest which turn out in EE because of the

[13] Respondents are asked to indicate the strength of their local attachment by answering the question 'How strongly attached to you feel to: your city/municipality?' on an 11-point scale from 0 to 10 with higher values indicating stronger attachment. We use this question as respondents were not asked about their interest or participation in local elections.

concurrency. It is less clear how we could identify type C voters, voters who only turn out in concurrent elections. Which types of voters are additionally drawn to the polls remains an important, but challenging question for future research endeavors.

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