

Advanced Quantitative Methods

Assignment II

Do Voters Polarize When Radical Parties Enter Parliament?: Replicating and extending the article of Bischof & Wagner

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Article for replication: *"Do Voters Polarize When Radical Parties Enter Parliament?"* by Daniel Bischof and Markus Wagner

Contributions

Mathilde Frederikke Nilsson and Anna Sophie Carlé Bayer are jointly responsible for section 1 and 6.

Mathilde Frederikke Nilsson is responsible for section: 2; 3; 3.2, 4.2; 5; 5.1.

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1 Introduction

“*Do Voters Polarize When Radical Parties Enter Parliament?*” Daniel Bischof and Markus Wagner ask in their article from 2019 (Bischof & Wagner 2019: 888). They argue that radical parties’ first entry into parliament leads to increased polarization among voters due to legitimization and backlash effects. The article examines the short- and long-term effects of radical parties’ entry into parliament in three studies: 1) a panel data study of the Dutch voters at the 2002 election where LPF entered parliament, 2) a study estimating time-series cross-sectional models on Eurobarometer data from 17 countries and 3) a generalized synthetic control model using the same data (ibid.).

In this paper, we examine the conclusions of Bischof and Wagner’s article by replicating, extending and discussing their study. First, we review the theoretical assumptions on which the article is based. Secondly, we replicate the results of the article with the original data. Thirdly, we extend the results by adding country level trends to table 3 and graphing the results and we test whether short-term polarization effects can be found at the German 2017 federal election. Finally, we discuss the study’s limitations, how they affect the inferences that can be drawn and we present possible methodological improvements to strengthen the inferences.

2 Theoretical assumptions of original article

The article by Bischof and Wagner builds on the expectation that the entry of radical right parties into parliament increases ideological polarization among voters. Polarization refers to the tendency where the variance of ideological positions increases because extreme views expand the variance. This effect of elite polarization, signaled by radical right parties first entrance into parliament, is argued to lead to institutional recognition and legitimization of radical right parties which has both short- and long-term effects on voter polarization (Bischof & Wagner 2019: 889).

In the short-term, two co-existing effects will mutually lead to voter polarization. Radical-right parties’ entry into parliament will have a legitimization effect because social norms shift and voters with extreme political views will feel social acceptance rather than shame about their radical political view (ibid.: 890). Because a radical-right party’s entry into parliament signals popularity and success, the political position of that party will be legitimized. Altogether, the legitimization hypothesis expects that: “*After a radical party enters parliament for the first time, people identifying with that party and its views will move further to the*

ideological extremes” (ibid.: 891). An opposite consequence expected to lead to additional short-term voter polarization is the backlash among people identifying with parties on the opposite side of the political spectrum. The backlash is expected to strengthen the opposition towards radical views among other individuals and a need to act against the legitimization of radical positions. The backlash effect hypothesis expects that: *“After a radical party enters parliament for the first time, people identifying with opposing parties will move further to the ideological extremes”* (ibid.). Combined, the legitimization and backlash effect resulting from radical-right parties entry into parliament are expected to lead to short-term voter polarization.

In addition to short-term effects, accompanying long-term effects of radical-right parties entry in parliament is outlined in the article. The long-term polarization hypothesis expects that: *“Voter-level ideological polarization will increase after a radical party enters parliament for the first time”* (ibid.: 892). Parties in parliament are provided various resources and better access to the media and the authors expect that through mechanisms of persuasion, party cuing and issue ownership, the newly gained resources of the radical-right parties may lead to a shift in voter positions and long-term polarization effects (ibid.).

3 Replication of the original article

In this section, we present our replication of the main results of the three studies of Bischof and Wagner’s article.

3.1 Study 1: Short-term polarization

Bischof and Wagner study the short-term effect of a radical-right party’s entry into parliament by using an individual-level panel study of the Dutch voters at the 2002 parliamentary election where the radical-right party, ‘Lijst Pim Fortuyn’ (LPF), entered parliament (ibid.). Data is compiled just before and after the election and includes respondent’s left-right self-placement in both waves (ibid.: 893). The short-term effect on voter polarization after the entry of a radical-right party is the empirical main finding of study 1.

Figure 1:
Descriptives: Did Polarization Increase after LPF Entrance? (Netherlands 2002)

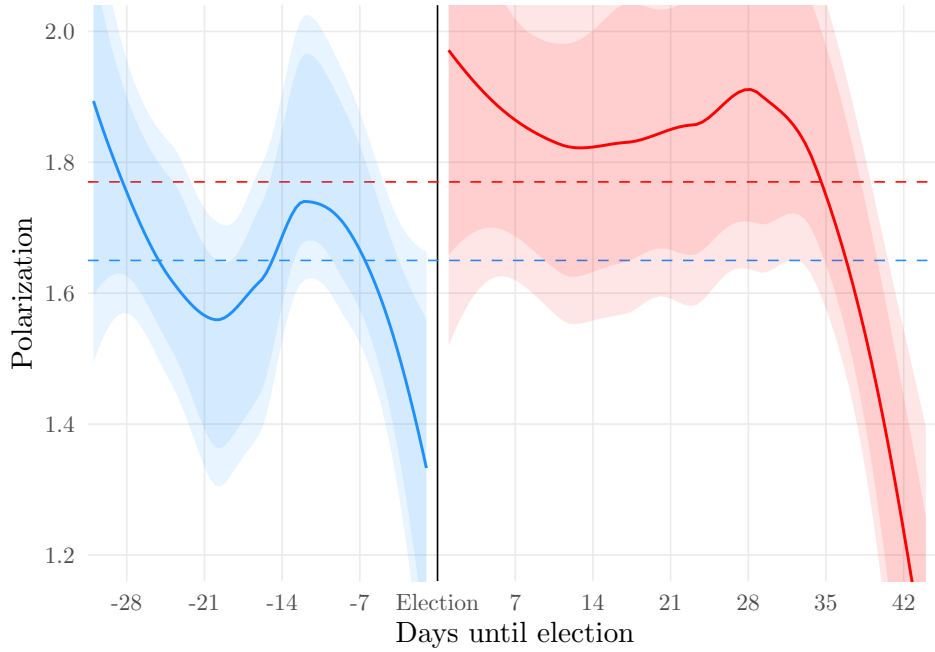
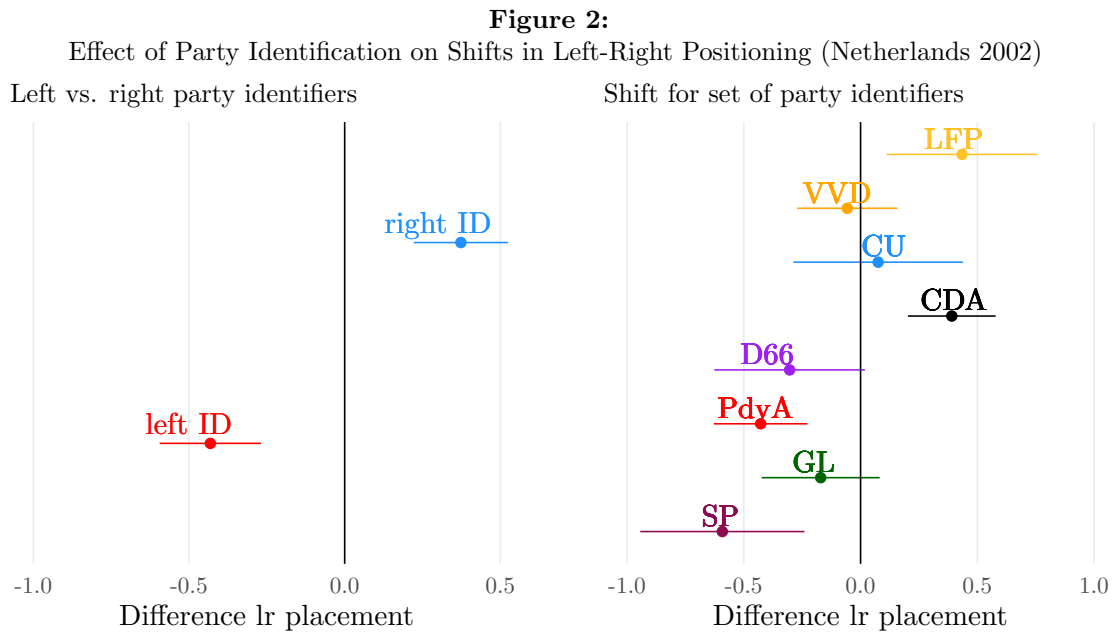


Figure 1 graphs the level of polarization and shows how polarization increases after the election where LPF enters parliament. The trend remains stable until the dip in polarization towards the end of the post-election panel which the authors explain by the fact that there were fewer respondents at the end of that panel wave (ibid.: 893-4).

Table 1:
Regression Estimates: Did Polarization Increase after the LPF Entrance? (Netherlands 2002)

	(1)	(2)	(3)	(4)	(5)
	Pre- and Post	Pre- and Post	Pre- and Post	Placebo:	Placebo:
	-Election	-Election	-Election	Fortuyn	Fortuyn
Before/after	0.121 (0.031)	0.121 (0.031)	0.121 (0.031)	-0.112 (0.076)	-0.113 (0.076)
Constant	1.629 (0.085)	2.059 (0.214)		1.644 (0.036)	
Control		✓			
Interview timing	✓	✓			
Individual fixed effects			✓		
R ²	0.002	0.017	0.782	0.001	
Observations	2,808	2,808	2,808	1,551	1,548
N	1,404	1,404	1,404		

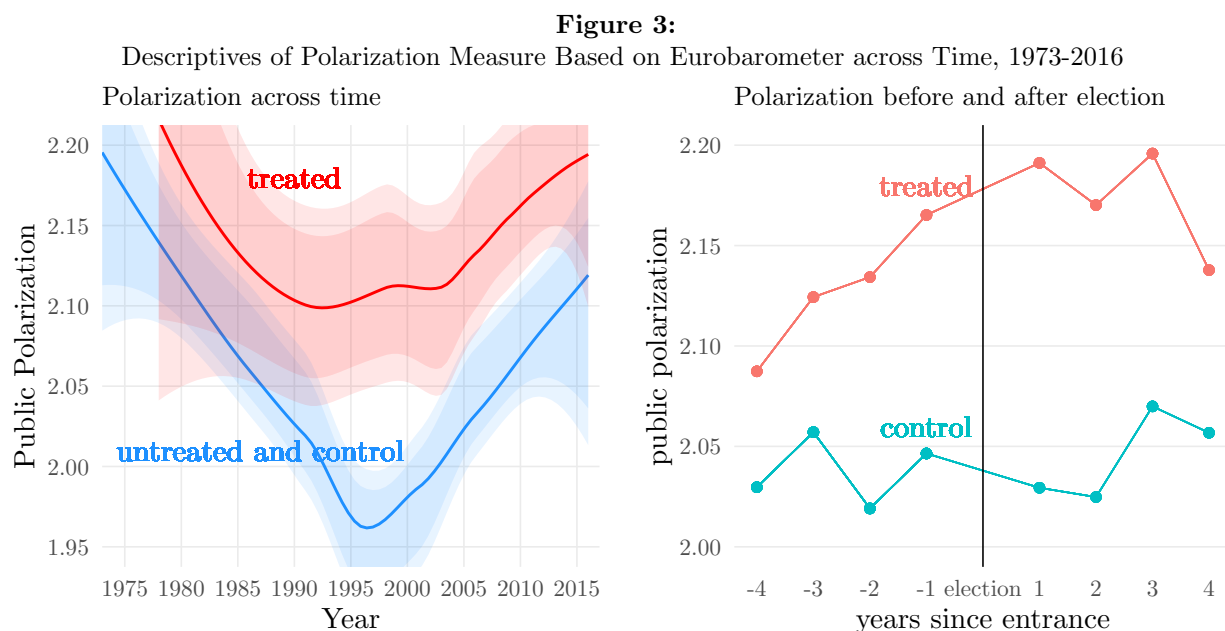
The descriptive findings of figure 1 are supported by regression estimates in table 1. Models 1 – 3 show the difference between polarization before and after the election and include different control variables. The increased polarization effect is statistically significant and the effect remains stable when adding control variables and individual fixed effects (ibid.: 894). Placebo tests are made to check if the murder of the LPF party leader, Pim Fortuyn, seven days before the election affects the polarization effect (ibid.). The tests compare respondents pre and post the assassination by using OLS comparison between the two pre-election groups (model 4) and making propensity score matching (model 5). The insignificant results imply that the assassination of Fortuyn has no influence on the polarization effect (ibid.). Our replication of model 5 does not show the exact same coefficient and standard error but our estimate is insignificant as well.



In figure 2, the effect of party identification on shift in left-right positioning is graphed to examine the legitimization and backlash effect. Figure 2 plots the coefficients of the changes in left-right self-placement after the election grouped by party identification. The results support the expectations of legitimization and backlash effects. Voters identifying with a left-wing party move further to the left and voters identifying with a right-wing party move further to the right on the left-right scale after the entrance of LPF (ibid.: 895).

3.2 Study 2: Long-term polarization

To test whether the short-term effect holds in the longer term and is generalizable across countries, the authors examine 17 European countries on a country level in the period 1973-2016 using generalized difference-in-differences (diff-in-diff) on Eurobarometer data. The study groups the countries into two; countries experiencing the first entry of a radical-right party into parliament in the period (treated countries) and countries *not* having a radical-right party into parliament in the period (control countries). The dependent variable is public polarization, measured by the standard deviation of left-right self-placement in each country-year (ibid.: 896).



Descriptive analysis of figure 3 reveals how the treated countries are more polarized than the control countries. The left panel shows how public polarization is consistently higher for treated countries than for the control countries. Further, the right panel shows that the entry of a radical-right party into parliament results in an increase in voter polarization in treated countries, whereas the voter polarization decreases after an election in the control countries. Overall, the descriptive analysis in our replication of figure 3 confirms the expectation that radical-right parties' entry increases public polarization (ibid.: 897).

Two-way fixed effects models are used to estimate the polarization effect which is the most causal estimate possible given the data available. Controlling for country effects and time varying effects by introducing two-way fixed effects makes it possible to approximate a credible counterfactual for each country and thereby

compare treated and control countries in the same decade. To account for serial correlation, standard errors are clustered by treatment appearance (country/election cycle) and thereby contemporaneous correlation is avoided (Angrist & Pischke 2014: 205-7). The fixed effects regression models include covariates expected to affect voter polarization (Bischof & Wagner 2019: 898).

Table 3:
OLS Estimates: Does Polarization Increase after Entrance of Extreme Right Party?

	Entire Sample			Countries with Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
Radical-right enter	0.090	0.116	0.131	0.126	0.161	0.174
	(0.034)	(0.032)	(0.033)	(0.053)	(0.045)	(0.048)
GDP growth			-0.006			-0.005
			(0.003)			(0.005)
Unemployment t_{-1}			0.003			-0.003
			(0.003)			(0.005)
Party system polarization t_{-1}			-0.001			-0.001
			(0.002)			(0.004)
Party system fragmentation t_{-1}			-0.018			-0.022
			(0.013)			(0.017)
Constant	2.055			2.088		
	(0.021)			(0.036)		
R ²	0.035	0.674	0.690	0.061	0.646	0.670
N _{elections}	164	164	145	82	82	74
N	534	534	503	253	253	243
Country fixed effects		✓	✓		✓	✓
Decade fixed effects		✓	✓		✓	✓

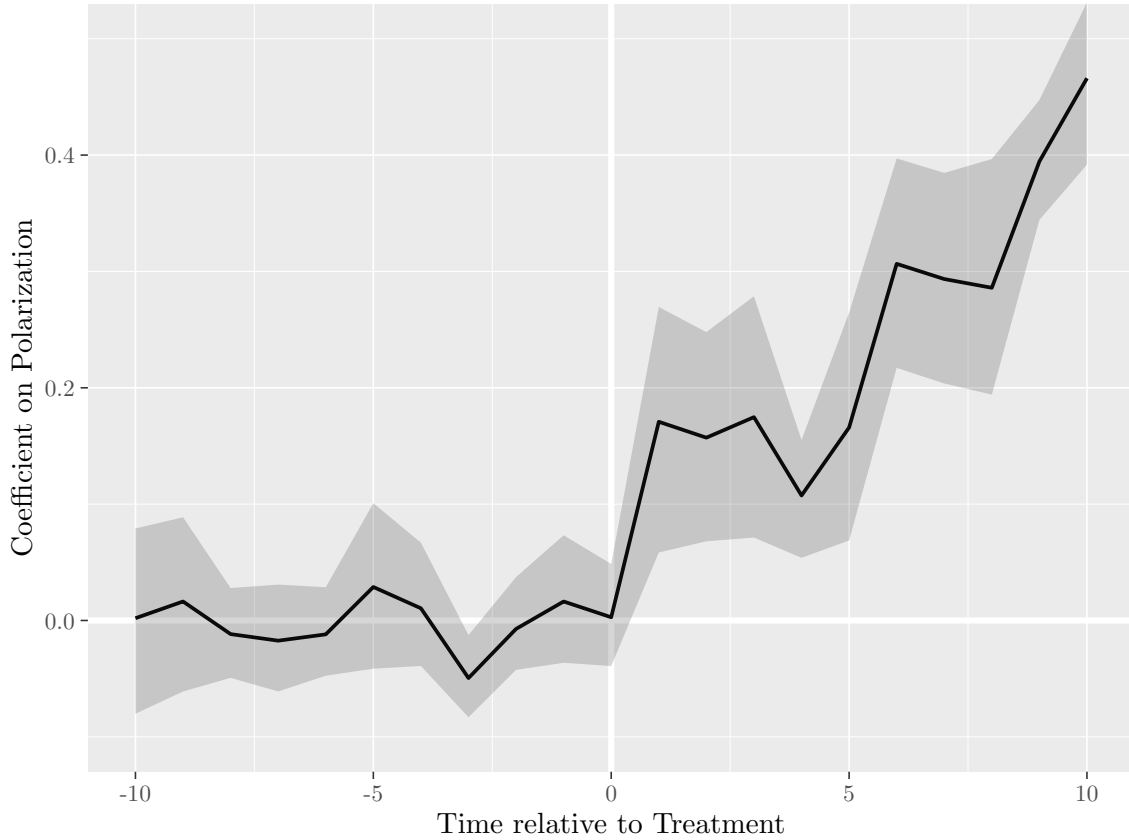
The replicated table 3 presents OLS estimates for six models, all showing how radical-right parties' entry into parliament leads to an increase in voter polarization. The estimates are significant in all six models just as they are stable across fixed effects and in models only including countries with an electoral threshold. The replicated table 3 confirms the expected effect of how entry of radical-right parties into parliament increases voter polarization.

3.3 Study 3: Generalized synthetic control model

Study 3 introduces the generalized synthetic control model (GSCM). GSCM makes it possible to estimate the effect of radical-right parties' entry into parliament on public polarization in the treated countries (Abadie 2020: 6). GSCM makes an approximation of the pretreatment trends by generating a counterfactual for each treated unit based on the untreated units using a linear two-way fixed effects model (Bischof & Wagner 2019: 899). By using GSCM, the authors take into account how trends between the treated and control countries might not be parallel in absence of treatment, also graphically shown in figure 3 left panel, which breaks

a fundamental assumption in diff-in-diff estimation (Angrist & Pischke 2014: 183). Using GSCM improves the credibility of the estimation (Abadie et al. 2020: 37).

Figure 4:
Generalized synthetic control estimates: Effects of the entrance of the radical right into parliament on polarization



The replication of figure 4 uses the covariates from study 2 as predictor variables for the GSCM and shows the effect of radical-right parties' entry by graphing the GSCM estimates (the difference in polarization between the factual and the estimated counterfactual development of polarization) (Bischof & Wagner 2019: 899). The replicated figure 4 underlines the long-term effect of a radical-right party's first entry into parliament on voter polarization because the polarization estimate only deviates from zero after treatment.

4 Extensions

Two sets of extensions are made: First, we extend the two-way fixed effects models of study 2 by adding country level trends and graphing the estimates. Secondly, we test whether short-term polarization took place after the German 2017 federal election where the radical-right party, Alternative für Deutschland (AfD), entered parliament (Bundeswahlleiter 2017).

4.1 Extensions of the original study

Bischof and Wagner use two-way fixed effects in their estimation of radical-right parties' entry in parliament in study 2. In study 2, they use a generalized diff-in-diff approach but do not account for the possibility that trends between treated and control countries are not parallel. Parallel trends is a fundamental assumption when using a diff-in-diff approach (Angist & Pischke 2014: 183). We extend the study by adding four new models to table 3, where we add country level trends to capture whether polarization varies within each country in different ways (ibid.: 197). By adding country level trends, we run a robustness check on table 3 to test the strength of the original results by accounting for trends in polarization of *each* country.

Table 4:
Extension of table 3: Entire sample with country level trends

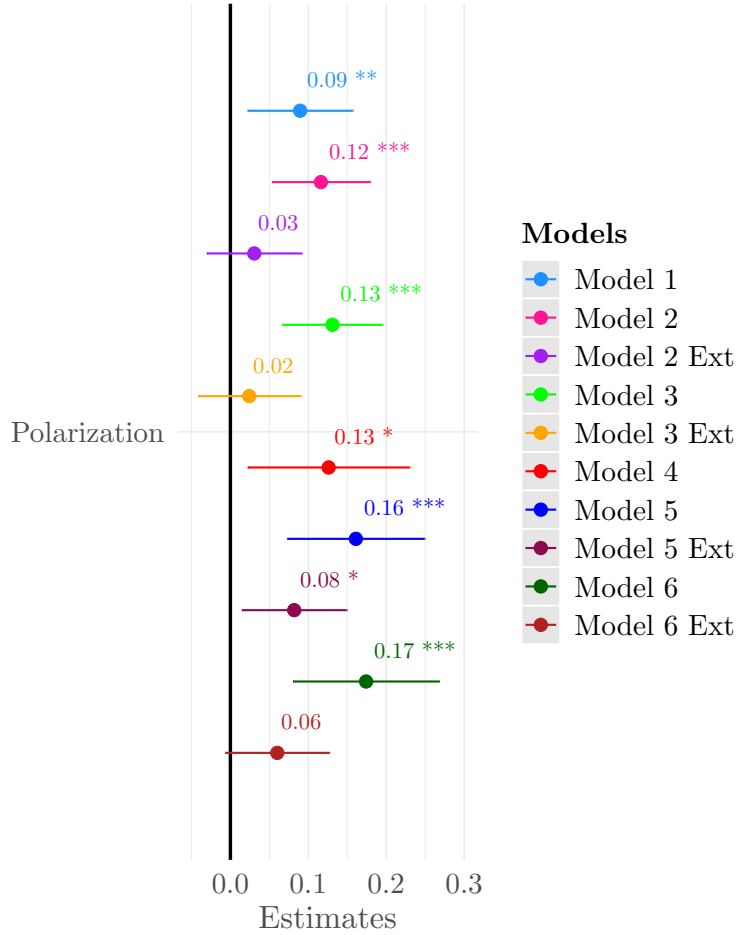
	Entire Sample				
	(1)	(2)	(2)	(3)	(3)
			Extended		Extended
Radical-right enter	0.090	0.161	0.031	0.131	0.024
	(0.034)	(0.032)	(0.031)	(0.033)	(0.034)
GDP growth				-0.006	-0.006
				(0.003)	(0.003)
Unemployment $t-1$				0.003	0.002
				(0.003)	(0.004)
Party system polarization $t-1$				-0.001	-0.003
				(0.002)	(0.001)
Party system fragmentation $t-1$				-0.018	0.022
				(0.013)	(0.014)
Constant	2.059				
	(0.214)				
R ²	0.017	0.674	0.836	0.690	0.844
N _{elections}	164	164	164	145	145
N	2808	534	534	503	503
Country fixed effects		✓	✓	✓	✓
Decade fixed effects		✓	✓	✓	✓
Country level trends			✓		✓

Table 5:
Extension of table 3: Countries with threshold with country level trends

	Countries with Threshold				
	(4)	(5)	(5)	(6)	(6)
			Extended		Extended
Radical-right enter	0.126	0.161	0.082	0.174	0.060
	(0.053)	(0.045)	(0.034)	(0.048)	(0.034)
GDP growth				-0.005	-0.006
				(0.005)	(0.004)
Unemployment t_{-1}				-0.003	-0.0003
				(0.005)	(0.005)
Party system polarization t_{-1}				-0.001	-0.003
				(0.004)	(0.002)
Party system fragmentation t_{-1}				-0.022	0.026
				(0.017)	(0.017)
Constant	2.088				
	(0.036)				
R ²	0.061	0.646	0.875	0.670	0.882
N _{elections}	82	82	82	74	74
N	253	253	253	243	243
Country fixed effects		✓	✓	✓	✓
Decade fixed effects		✓	✓	✓	✓
Country level trends			✓		✓

When comparing the original and the extended models of the extended table 3, it shows how including country level trends decrease radical-right parties' entry into parliament's effect on voter polarization. All coefficients for the extended models are smaller than for the original models, implying that the account for country level trends diminishes the regression estimates (ibid.: 200).

Figure 5:
Plotting the estimates of public polarization for original and extended models



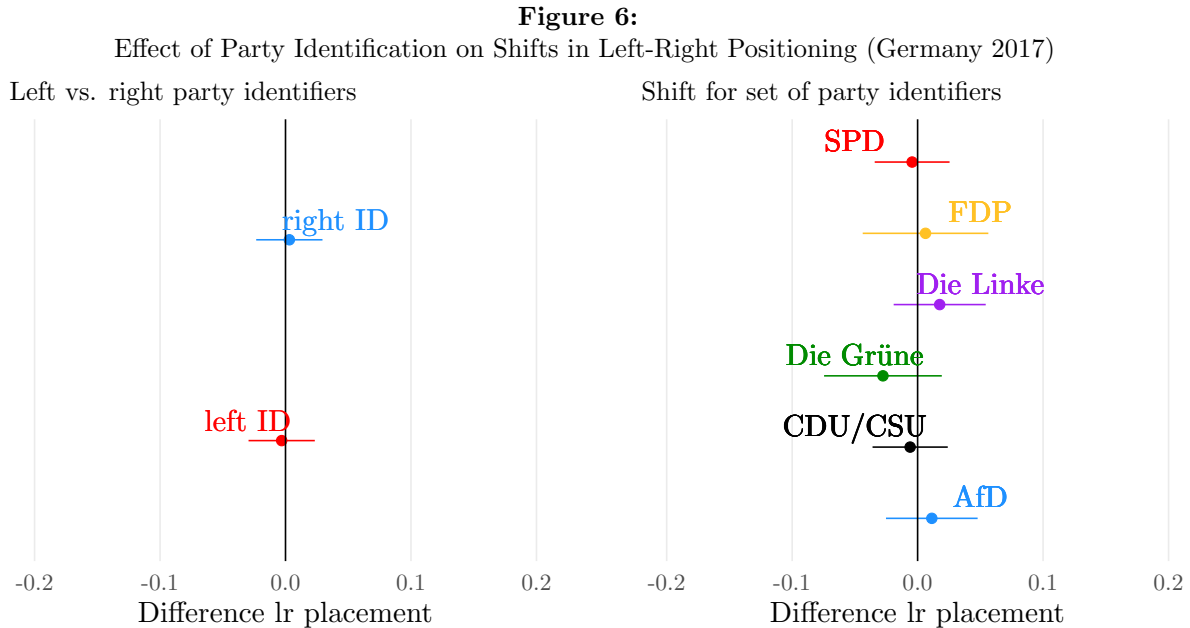
When plotting the estimates of radical-right parties' entry into parliament's effect on public polarization for the six original and four extending models, it shows how adding country level trends makes the estimates insignificant. Models 2, 3 and 6 all have insignificant results in the extended models, implying that Bischof and Wagner's results of radical-right parties' entry into parliament's effect on polarization are not robust. The estimate of model 5 stays significant with country level trends added, but the effect is diminished compared to the original model 5. This extension implies that the results of the original table 3 are not robust since estimates and significance change when country level trends are included which questions the validity of the study (ibid.: 200). A review of the choice of a diff-in-diff design is discussed in section 5.

4.2 Short-term polarization in Germany

We want to test whether the found short-term polarization effect in study 1 also can be found at the German 2017 federal election where the radical-right party, AfD, entered parliament. As pointed out by Bischof and Wagner, until 2017 Germany was one of the only Western European countries without an established radical-right party, and further Germany has one of the highest electoral thresholds for parliament in Europe (Bischof & Wagner 2019: 888). Therefore, it is interesting to test whether short-term polarization also took place in Germany.

We examine Germany by using German Longitudinal Election Study (GLES) data to replicate figure 2 of the original study. Through the replication of figure 2, showing an effect of party identification on shift in left-right positioning, we test if Bischof and Wagner’s legitimization and backlash hypotheses can be found in Germany (GLES 2020; Bischof & Wagner 2019: 895). Wave 7 and 8 in GLES are collected just before and after the 2017 federal election (GLES 2020). Because GLES does not include a left-right self-placement variable both before and after the election, we construct a reflexive index in wave 7 and 8 to measure the differences in polarization (Petersen 2012: 403).

Our indexes are constructed by five variables: position on socio-economic dimension, libertarian-authoritarian dimension, integration, security and privacy and climate change (see appendix). We check the validity of the indexes by calculating the correlation with *Pearson’s R* and the reliability with *Cronbach’s alpha* (ibid.: 412-5). Applicable to both, the correlation between some of the variables is lower than 0.3 and Cronbach’s alpha is approximately 0.6 but decreases if one or more variables are excluded (ibid.). To justify the use of the indexes, we tested the correlation between the polarization index and left-right self-placement within wave 7. The correlation is relatively high, 0.49, implying that left-right self-placement can be replaced by the polarization indexes in our extension (for histograms of the indexes distributions: see appendix).



In the German replication of figure 2, the entry of AfD's into parliament does not have a significant effect on short-term polarization. There is no statistically significant difference in left-right placement between voters with different party identification. Based on these results, we must reject Bischof and Wagner's legitimization and backlash hypotheses in this case since no short-term polarization effect is found at the German 2017 federal election. The results and possible explanations will be discussed in the section below.

5 Discussion

In this section, we discuss the limitations of Bischof and Wagner's study and how they affect the inferences. In addition, we propose methodological improvements for the inferences.

5.1 Study limitations and consequences for inference

To examine radical parties' entry into parliaments' effect on polarization, Bischof and Wagner use respondents' left-right self-placement to measure polarization (Bischof & Wagner 2019: 893). In the literature, no clearly defined operationalization of polarization exists but as the authors mention, we can question if respondents' abstract self-placement is the best measure to rely on (Schmidt 2016: 2; Bischof & Wagner 2019: 901). Bischof and Wagner argue that using left-right self-placement makes the estimated effect of radical-right parties' entry more conservative, potentially underestimating the polarization effect (Bischof &

Wagner 2019: 892). However, our results from section 4.2 on the German case disprove this argument. On the basis of the claim in the article, it should be ‘easier’ to capture a polarization effect by using an index, but our results do not point a polarization effect out, proving the claim wrong. The insignificance of the results at the German 2017 election can be explained by several factors including; 1) that our indexes do not capture polarization, possibly explained by the low correlation and alpha coefficients and 2) that the radical-right party, AfD, already entered the European Parliament in 2014 and several state parliaments before 2017 and that might explain why we do not see a polarization effect at the 2017 federal election (Berning 2017: 17). This leads to the question of whether the method of study 1 is transferable to other countries, as electoral systems are different and perhaps in some countries such as Germany, it could be more relevant to measure polarization at a state level. Even though our extension of study 1 has some limitations, it still questions Bischof and Wagner’s results and thereby the inferences we can draw from their article.

Another limitation of Bischof and Wagner’s article is the design of study 2 using generalized diff-in-diff to measure the long-term polarization effect (Bischof & Wagner 2019: 897). In section 4.1, we made a robustness check of the original results by adding country level trends to the six original models. The insignificance of the extension estimates indicates that the results are less robust than outlined by Bischof and Wagner. When using diff-in-diff, it is assumed that the trends between units are parallel, but it is perhaps incorrect to assume that the 17 European countries in study 2 fit under this assumption (Angrist & Pischke 2014: 199). The parallel trends assumption can for instance be broken if an event or external shock occurs at the same time as a radical-right party enters parliament in one or more countries or if countries are affected differently by an event (ibid.: 184). The insignificant results of the robustness check could indicate that it is incorrect to assume parallel trends for the 17 countries included in study 2. If so, diff-in-diff might not be the best method to measure the long-term effect of a radical-right party’s entry in parliament across the European countries (Angst & Pischke 2014: 199).

On the other hand, the GSCM of study 3 improves the inferences to be drawn from the study. The results of study 3 in fact strengthen the belief that the parallel trends assumption is true because the estimated model fits the pretreatment trends of the treated units quite well (Bischof & Wagner 2019: 899). Despite only six observations, using GSCM makes it possible to do precise quantitative inference in small sample comparative studies (Abadie et al. 2015: 497). Because the GSCM is the strictest causal method applied in the article, the use of GSCM supports Bischof and Wagner’s expectations which solidifies the inference to be drawn from the study (Bischof & Wagner 2019: 899).

5.2 Suggestions for improvement

Taking the above mentioned limitations and their consequences for the inferences into consideration, suggestions for methodological improvements are addressed. First, an improvement of the measure of polarization could be beneficial for better insight into how polarization develops and thereby for possible inferences in future studies. Measuring polarization with a one-dimensional left-right self-placement variable might not capture all aspects and dimensions of polarization, just as it does not take the salience of different policy issues into consideration. Often ideological self-placement is measured in one dimension, but if both economic and value based ideological self-placements were included, polarization could be measured more precisely (Slothuus et al. 2010). By replacing the left-right self-placement with a well constructed polarization index, more aspects of polarization can be captured, which can possibly ensure a more valid and reliable measure of polarization (Petersen 2012: 421).

Additionally, Bischof and Wagner assume that elite polarization first occurs at the moment a radical-right party enters parliament (Bischof & Wagner 2019: 889). In the article, they distinguish between countries with and without a threshold in their long-term polarization estimates (ibid.: 898). An improvement or a supplement to their study could be a further examination of the importance of thresholds by the use of regression discontinuity design (RDD). RDD exploits the advantage of clear-cuts, like an electoral threshold, making it possible to study the differences in polarization among countries where a radical-right party was almost elected (e.g., 1 percent under the threshold) with countries, where the radical-right party just made it into parliament (e.g., from threshold to 1 percent above) (Angrist & Pischke 2014: 151). RDD makes it possible to both examine the importance of thresholds across countries and within countries across time. A case example could be Germany where the radical-right party, AfD, got 4.7 percent of the votes at the 2013 federal election, 0.3 percent under the threshold, and at the 2017 federal election where they entered parliament (Bundeswahlleiter 2013). RDD makes it possible to test the importance of thresholds and the author's assumption that elite polarization first occurs at the first time a radical-right party enters parliament. Supplementing the existing studies with RDD estimation can elaborate and possibly strengthen the inferences of Bischof and Wagner's study.

6 Conclusion

In this paper, we have examined Daniel Bischof and Markus Wagner’s article “*Do Voters Polarize When Radical Parties Enter Parliament?*” by replicating, extending and discussing the results of the article. Despite the coefficient and standard error in the propensity score matching model (study 1, model 5), we were able to fully replicate the results of the original article. The original article found empirical evidence for both short- and long-term polarization effects of radical-right parties’ entry into parliament. We extended the article with a robustness check adding country level trends to table 3. We found that the long-term polarization effect of radical-right parties’ entry into parliament had insignificant estimates when country level trends were added. As another extension, we tested whether a short-term polarization effect of AfD’s entry into parliament could be found by replicating the original study 1 with data from the German federal election of 2017. The results did not show any short-term polarization effect in Germany after AfD’s entry into parliament. The extensions challenge the robustness and the generalizability of the original results. Lastly, we discussed the limitations of the original study and how they affect the inferences that can be drawn. We questioned the use of left-right self-placement as a conservative measure for polarization and we discussed whether our insignificant results in the German case challenged the inferences of the original article. Moreover, we discussed the assumption of parallel trends which is fundamental when using diff-in-diff estimation. At the end, we suggested how an index as a measure for polarization can enclose the many dimensions of polarization and how RDD can elaborate the importance of electoral thresholds and test whether elite polarization first occurs at the first time a radical-right party enters parliament.

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Appendix

Here, we report the construction of the indexes for the extension of study 1 for the German case. The following is included:

- Histograms of index distributions for wave 7 and 8
- Histogram of left-right self-placement in wave 7
- Variables used for polarization indexes

Figure 7:

Index distributions for indexes of polarization wave 7 and 8

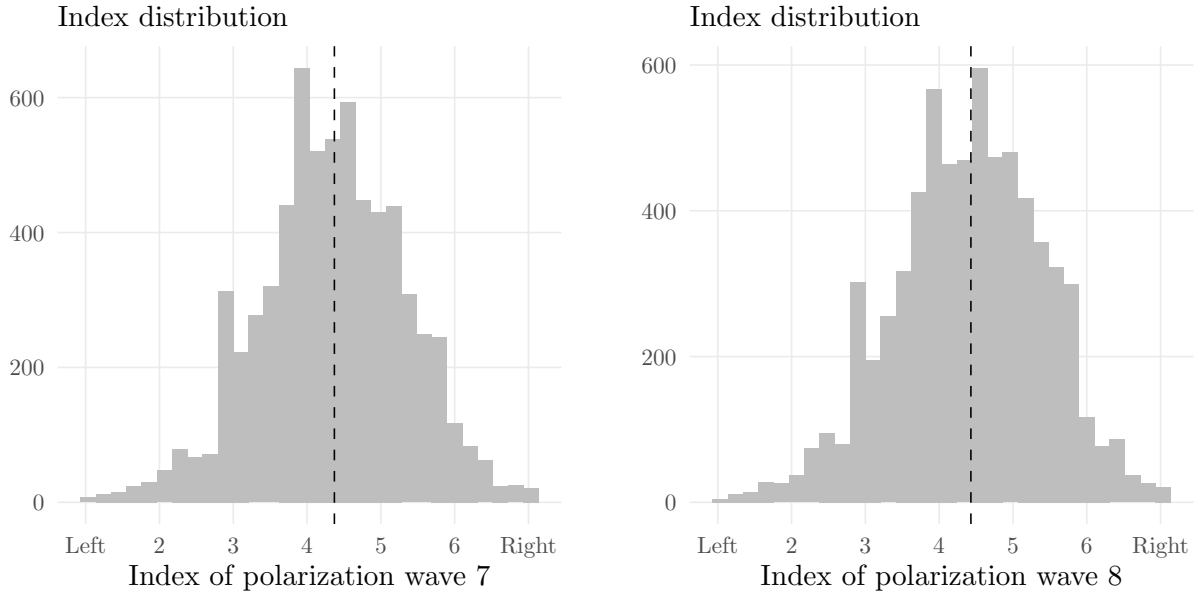


Figure 8:

Frequency distribution of left-right self-placement in wave 7

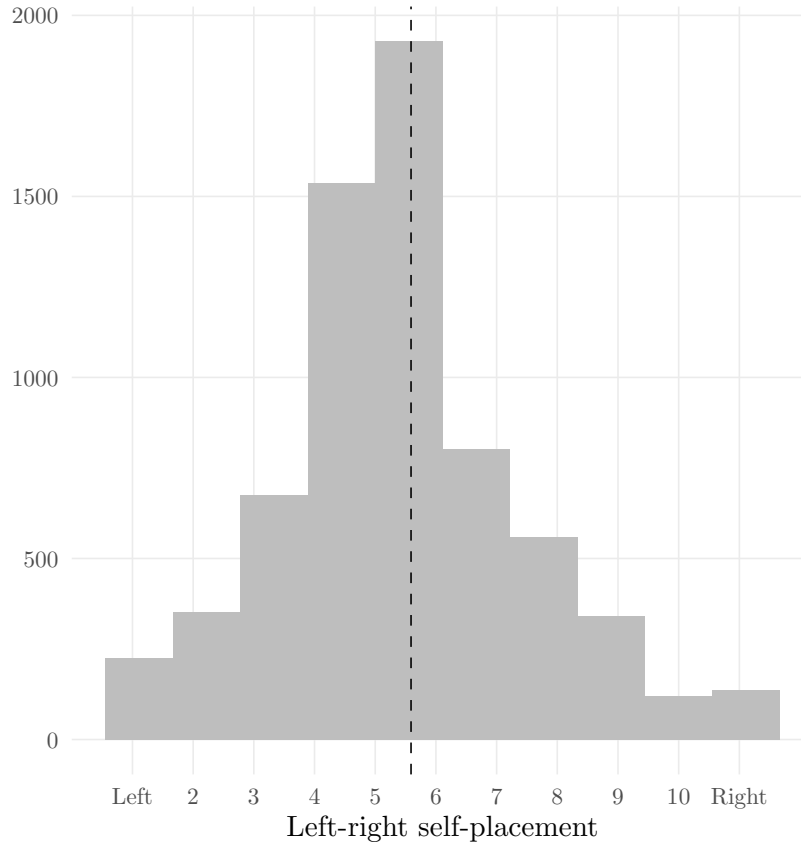


Table 6:
Variables included in German polarization indexes

	Position on	Question from codebook	Coding
1	Socio-economic deminsion	Some people prefer lower taxes, although this results in less social services. Others prefer more social services, although this results in raising taxes. <i>What is your personal view on this issue?</i>	1 lower taxes, although this results in less social services 2 3 4 5 6 7 more social services, although this results in raising taxes
2	Libertarian-authoritarian dimension	<i>What is your personal view on immigration of foreigners?</i>	1 immigration for foreigners should be easier 2 3 4 5 6 7 immigration for foreigners should be more difficult
3	Integration	There are different views on how much foreigners should assimilate in Germany. Some people think that foreigners should completely assimilate to the German culture. Others think that foreigners should be able to live according to their own culture. <i>What is your personal view on this issue?</i>	1 foreigners should completely assimilate to the German culture 2 3 4 5 6 7 foreigners should be able to live according to their own culture
4	Security and privacy	Some people think that the state should interfere without restrictions in the privacy and freedom of movement of citizens in order to combat terrorism. Others think that the privacy and freedom of movement of citizens should always be protected even if it hampers the fight against terrorism. <i>What is your personal view on state interference in order to combat terrorism?</i>	1 in favour of strong state interference 2 3 4 5 6 7 against strong state interference
5	Climate change	Some say that the fight against climate change should definitely take precedence, even if it impairs economic growth. Others say that the economic growth should definitely take precedence, even if it impairs the fight against climate change. <i>What is your personal view on climate change and economic growth?</i>	1 fight against climate change should take precedence 2 3 4 5 6 7 economic growth should take precedence