Does Compulsory Voting Increase Support for Redistributive Policy?

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Abstract

Citizens unequally participate in elections and this may systematically bias policy in favor of those who vote. Some view compulsory voting as an important tool to alleviate this problem while others worry about its detrimental effects on the legitimacy and quality of democratic decision-making. So far, however, we lack systematic knowledge about the causal effect of compulsory voting on public policy. We argue that compulsory voting mobilizes citizens at the bottom of the income distribution and that this translates into an increase in support for redistributive policies. We empirically explore the effects of a sanctioned compulsory voting law on direct-democratic decision-making in the Swiss canton of Vaud from 1908 to 1948. We find that compulsory voting increases turnout in referendums by 30 percentage points and doubles electoral support for left policy positions. We discuss the implications of these results for our understanding of the policy consequences of electoral institutions.

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I. Introduction

One of the fundamental objectives of democracy is to ensure that public policy responds to citizens' needs. A large literature has demonstrated, however, that citizens unequally participate in elections and therefore, one may worry that policy is systematically biased in favor of those who vote (Husted and Kenny 1997; Miller 2008; Cascio and Washington 2014). This argument about the policy consequences of representational inequality appears all the more relevant because there exist pronounced and well-documented differences in civic engagement across politically relevant, socio-demographic divides: Low income earners, the less educated, less urban, young, and those belonging to ethnic minorities have a significantly lower propensity to vote.[1] From this perspective, low turnout may reduce or even destroy the positive welfare effects of government responsiveness through electoral accountability (Strömberg 2004; Björkman and Svensson 2009), a phenomenon that Lijphart (1997) has called the "democratic dilemma".

To preserve the welfare-enhancing effect of electoral accountability, Lijphart (1997) and others (Hill 2006; Dahl 1989) have pointed out that compulsory voting may reduce representational inequality by mobilizing those citizens who would otherwise remain politically inactive. This incentivizes policymakers to enact policies that better serve the needs of those who had previously been underrepresented. Others, however, worry that compulsory voting reduces the quality of electoral choice and creates inefficiencies because socio-demographic turnout differences may simply reflect differences in affectedness or information (Feddersen and Pesendorfer 1999; Börgers 2004; Saunders 2011). For example, compulsory voting could increase the share of less informed citizens that vote which may reduce the quality of electoral choice. Moreover, to the extent that compulsory voting remains inconsequential for electoral outcomes, low turnout would actually be preferable from an efficiency perspective.

So far, there exists overwhelming evidence that turnout tends to be higher in countries that practice compulsory voting (Jackman 2001; Mueller and Stratmannn 2003; Blais and Young 1996) and that turnout sometimes affects the distribution of votes across parties and candidates (Hansford

[1]The positive empirical relationship between income and the propensity to vote has been well documented in a number of empirical studies — see, for example, Mueller and Stratmannn (2003), Verba, Schlozman, and Brady (1995), Filer, Kenny, and Morton (1993), Sigelman, Roeder, Jewell, and Baer (1985), and DeNardo (1980).

and Gomez 2010; Brunell and DiNardo 2004; Citrin, Schickler, and Sides 2003). Some find that turnout increases benefit the Democrats (Citrin, Schickler, and Sides 2003; Erikson 1995) and the Labor Party in Australia (Fowler 2013), others report that the Republican party achieves higher vote shares in high-turnout elections (Tucker, Vedlitz, and DeNardo 1986; Nagel and McNulty 1996), and Highton and Wolfinger (2001) conclude that turnout has little to no effects on election outcomes. Yet, our knowledge about the causal effect of compulsory voting on actual public policy choices in real-world elections is still very limited.

We explore the public policy effects of turnout by examining how sanctioned compulsory voting affects referendum outcomes. We argue that imposing a fine for abstention most strongly increases turnout among those at the bottom of the income distribution. This is because a monetary sanction imposes the highest relative costs on those who have the least financial resources available and, as is well documented in the literature, low-income individuals generally have a very low probability of participating in elections under voluntary voting (DeNardo 1980; Filer, Kenny, and Morton 1991; Husted and Kenny 1997; Mueller 2005). Thus, the set of citizens that can be mobilized is particularly large. Since low income voters favor more redistribution than high income individuals (Meltzer and Richard 1981; Alesina and La Ferrara 2005; Lipset N.d.), differential mobilization results in more electoral support for left policies, i.e., policies that aim at lowering income inequality, increasing welfare spending, enhancing workers' employment conditions, and strengthening pension systems. Previous work that documents higher turnout to be associated with lower levels of income inequality supports this theoretical reasoning (Mueller and Stratmannn 2003).

Our evidence is based on an analysis of the effects of a sanctioned compulsory voting law in the Swiss canton Vaud that aimed mobilizing citizens to participate in direct legislation. Vaud practiced compulsory voting for more than twenty years (1925-1948). Abstention triggered a fine that local police authorities collected by visiting nonvoters' homes in person. We analyze the causal effect of this policy intervention on federal referendum outcomes in the first half of the 20th century (1908-1948), a period of industrialization and rising labor interests. Studying this period promises particularly valuable insights into the role of electoral institutions and political participation for the evolution of the modern welfare state: In many of the federal referendums Swiss citizens voted on fundamental

components of the welfare state, such as income taxation, health system, job security regulations, pension schemes, and the right to work.

In contrast to previous work that has relied on survey data and stated preferences to estimate the effects of turnout on elections, we use results from direct-democratic decisions on policy issues. Testing our argument in representative democracies appears almost impossible since in these systems citizens typically vote for parties (or candidates), but they do not vote on political issues in direct legislation. Thus, analyzing the effect of compulsory voting on a party's vote share would not allow us to disentangle whether changes in electoral support are due to a party's stance on a specific policy issue, the combination of its multidimensional policy platform, its candidates, or their perceived competence. By examining votes on specific policy issues, we avoid this complication. Our focus on federal referendum outcomes in one out of many subnational jurisdictions also avoids a second noteworthy problem, as this means that we can assume that federal referendum issues remain exogenous to policy preferences within this single subnational jurisdiction. This circumvents some of the methodological issues that arise when studying national election outcomes where parties' and candidates' policy positions tend to form endogenously. Using a series of fixed effects regressions, our study of the policy consequences of compulsory voting provides more direct causal evidence on the policy implications of electoral institutions and political mobilization. Such a causal evaluation of the effects of compulsory voting is particularly important because a correlational analysis would be unable to credibly rule out that the effects we find or not find are due to other confounding factors.

The results of our study of federal referendum outcomes in Vaud suggest that sanctioned compulsory voting has a massive effect on turnout, increasing participation in direct legislation by almost 30 percentage points, which implies that turnout was close to universal. Our results of referendum outcomes suggest that this massive turnout differentially strengthens electoral support for left policy positions by about 100%. These results remain robust when using different model specifications, applying permutation tests, and employing multi-way clustered standard errors. Based on our findings, we also report point predictions for important welfare and social policy proposals of the left. The results suggest that compulsory voting also had a considerable impact on support for specific referendums on important economic policy issues.

These findings speak to several literatures that have explored the policy impact of political participation and, more generally, the effects of electoral institutions on public policy. First, most scholars agree that knowledge about the political consequences of virtually universal turnout is crucial to our evaluation of the potential biases in public policy due to unequal political participation. Yet, previous work has either examined the impact of relatively moderate increases in turnout (Hansford and Gomez 2010; Knack 1994; Filer, Kenny, and Morton 1993) or relied on stated preferences of nonvoters in surveys to explore this issue (Selb and Lachat 2009). Although these studies have generated important insights, their ability to explore the actual policy effects of compulsory voting remain quite limited (Jackman 1999). Already Lijphart (1997) points out that "nonvoters who are asked their opinions on policy and partisan preferences in surveys are typically citizens who have not given these questions much thought, who have not been politically mobilized, and who, in terms of social class, have not developed class consciousness. It is highly likely that, if they were mobilized to vote, their votes would be quite different from their responses in opinion polls" (p. 4).

We analyze the policy effects of particularly high levels of civic engagement using behavioral data to provide more direct evidence on the policy impact of almost universal turnout. Thereby, our results also speak to the literature on the consequences of electoral institutions for the rise of the political left (Persson and Tabellini 2004; Besley and Case 2003; Boix 1999; Rokkan 1970) and the evolution of the modern welfare state (Husted and Kenny 1997; Miller 2008; Radcliff 1992) and inform an ongoing debate about how compulsory voting may or may not affect political stability (Jackman 2001; Lijphart 1997). We elaborate on the implications of our findings in more detail in the conclusion.

II. Compulsory Voting, Differential Mobilization, and Public Policy

A. Previous Work

Several scholars have argued that high levels of turnout are desirable because they increase the legitimacy and the stability of the political system (Dahl 1989; Lijphart 1997; Saunders 2011). This debate has stimulated a large empirical literature that has examined the effects of compulsory voting on political participation and political interest along with the social, economic, and political

determinants of turnout. Most studies have focused on estimating the mobilization effects of compulsory voting (Jackman 2001; Panagopoulos 2011; Bechtel, Hangartner, and Schmid 2011). According to this previous work, countries that practice compulsory voting have turnout levels that are 7 to 15 percentage points higher on average than in countries where voting is voluntary (Mueller and Stratmannn 2003; Blais and Young 1996; Jackman 1987).

Although public and academic debates about the desirability of compulsory voting continue (McMurray 2012; Krishna and Morgan 2011; Saunders 2011), there exists surprisingly little empirical work that has examined one of the main questions underlying the long-standing discussion about compulsory voting, i.e., whether high turnout really strengthens electoral support for left policies. So far, the available evidence appears mixed and indirect since previous work has not examined the effects of compulsory voting on actual policy choices in direct-democratic settings. High turnout appears to be associated with an increase in the representation of Latinos and Asian Americans in U.S. city elections (Hajnal and Trounstine 2005), higher vote shares for the Labor Party in Australian State Assembly Elections (Fowler 2013) and stronger electoral support for the Democrats in the U.S. (Hansford and Gomez 2010; Citrin, Schickler, and Sides 2003) or for the Republican party (Tucker, Vedlitz, and DeNardo 1986; Nagel and McNulty 1996). On the other hand, several studies document that turnout is not or at most weakly correlated with election results (van der Eijk and van Egmond 2007; Brunell and DiNardo 2004; Highton and Wolfinger 2001; Erikson 1995). In the following section we distinguish three theoretical arguments about the effects of compulsory voting on public policy choices in referendums: equal mobilization, amplifying bias, and bias correction. We then explore these predictions in a direct-democratic setting where citizens directly decide on policy in referendums, which allows for a direct empirical test of the competing theoretical arguments.

B. Sanctioned Compulsory Voting and Public Policy

How do increases in political participation affect policy choices in democracies? The *equal mobilization* argument assumes that citizens have potentially heterogeneous propensities to vote. These propensities, however, equally respond to changes in the costs of voting or non-voting. Such cost changes could be due to the introduction of postal voting (Luechinger, Rosinger, and Stutzer 2007), the removal of

poll taxes (Hansford and Gomez 2010), enfranchisement decisions (Husted and Kenny 1997), weather events (Hansford and Gomez 2010), compulsory voting (Panagopoulos 2011), social pressure (Gerber, Green, and Larimer 2008), changes in the accessibility of polling stations (McNulty, Dowling, and Ariotti 2009), or the introduction of literacy tests (Filer, Kenny, and Morton 1993). Increases in the costs of voting will demobilize citizens to participate in elections, while increases in the costs of abstaining will mobilize individuals (Riker and Ordeshook 1968). But if all citizens equally respond to the cost changes, their interests would still be equally well (or poorly) represented. Thus, according to the equal mobilization argument, changes to the costs of voting or non-voting will remain inconsequential for public policy.[2]

The available empirical evidence, however, suggests that citizens do not respond uniformly to different mobilization instruments. Rather, their turnout effects depend on the instrument's specific nature (Jackman 2001). For example, literacy tests imply particularly high costs to the low educated. As a consequence, such tests depress turnout among those with low levels of education (Filer, Kenny, and Morton 1993). To give another example, the introduction of poll taxes increases the costs of voting more strongly for those with low income. Therefore, poll taxes tend to decrease turnout among low earners (Filer, Kenny, and Morton 1991; Husted and Kenny 1997). These phenomena illustrate the functioning of differential mobilization and how electoral institutions can reduce or exacerbate inequalities in political participation. Against this background, we distinguish two additional arguments about the effects of mobilization efforts on public policy. Both the *amplifying bias* and the *bias correction* argument reject the view that shocks to the costs of voting have equal mobilization effects, albeit in opposite directions.

The amplifying bias argument predicts that mobilization efforts will increase representational inequality because they are most effective among those who already have a high propensity to vote. Therefore, increases in turnout will translate into more representational inequality which will amplify biases in public policy. Recent field experimental evidence supports this idea: Enos, Fowler, and Vavreck (2014) show that get-out-the-vote interventions more strongly mobilize those who already have a high propensity to vote, which would further increase the potential biases in policy decisions

[2]A related argument holds that citizens who would abstain under voluntary voting would vote randomly under compulsory voting which would lead to the same prediction.

due to unequal political participation. Since constituencies that support right policies have a higher propensity to vote (ibid.), this reasoning suggests that compulsory voting will strengthen support for right policies more strongly than support for left policies.

We argue that increasing civic engagement can reduce representational inequality and policy biases. In the context of sanctioned compulsory voting, this bias correction argument rests on the idea that introducing fines for non-voting places a disproportionate burden on those with low incomes, who have been documented to have a particularly low probability of turning out (Mueller and Stratmannn 2003; Verba, Schlozman, and Brady 1995; Blais and Young 1996). This reasoning is consistent with the finding that poll taxes, which impose higher costs relative to income for low earners, indeed reduce turnout more strongly in poorer counties (Filer, Kenny, and Morton 1991). Since a monetary punishment for non-voting will more strongly mobilize low income individuals, this will add voters located at the lower end of the income distribution to the electorate. Following Meltzer and Richard (1981), this changes the median voters' preferred level of redistribution: The median voter under sanctioned compulsory voting will have a higher demand for income redistribution and its various instruments: social welfare, pension systems, universal health care. Individual-level evidence that documents a strong negative correlation between income and support for redistribution lends empirical support to this reasoning (Alesina and La Ferrara 2005; Piketty 1995). Therefore, the bias correction argument predicts a particularly strong increase in turnout among low-income voters that translates into a shift toward more relative support for left, redistributive policies (Husted and Kenny 1997).

Examining the empirical validity of our argument in representative democracies would be difficult since in these political systems citizens vote for parties or candidates but they do not directly decide on policy, which means that they have only a very indirect impact on policy. This, however, also implies that the degree with which legislators' respond or not respond to citizens' preferences confounds the effects of changes in the electorate's composition on policy. We avoid this complication by studying the policy impact of sanctioned compulsory voting in Switzerland in the first half of the 20th century. Switzerland has a direct-democratic system where citizens directly vote on policy issues in referendums. As the following section lays out in more detail, exploring this time period lends itself particularly well to evaluating our argument about the policy consequences of political participation and promises

to generate evidence that enables us to arbitrate between different theoretical accounts of the policy effects of turnout and to shed light on the electoral sources of the modern welfare state.

III. The Swiss Party System and Compulsory Voting in Vaud in the early 20th Century

Switzerland seems to be the ideal political system for studying the policy effects of compulsory voting as already Lijphart (1997) emphasizes its exceptionally low levels of turnout and Linder (1994) observes that "especially when participation is low, the choir of Swiss direct democracy sings in upper or middle-class tones" (p. 95-96). Moreover, in the period we study (1908-1948), the advent of industrialization in the early 20th century marked the rise of the political conflict between capital and labor interests in Switzerland and this cleavage between low-income and high-income earners dominated political competition for decades (Kreis 2014; Fueter 1928). The increasing importance of the industrial sector and the economic consequences of World War I further strengthened the support of the working class for the social democratic party (SP). In line with their typically low-income constituencies, SP demanded left policies, such as, social benefits, a tax-funded pension system, public health care, and other types of classical redistributive policies (Linder 1994). In contrast, the Free Democratic Party (FDP) wanted to prevent state interventions in the economy, opposed welfare programs, and supported the extension of working hours. Since the FDP held the majority of seats in the federal parliament, the SP could influence public policy only through direct-democratic decision-making. As a consequence, citizens had to vote on important welfare and social policy proposals in federal referendums. Prominent examples include proposals to introduce a public pension system and a public disability insurance (1925, 1947), a popular initiative to fight the economic crisis (1935), and a popular initiative for economic reforms and the establishment of a right to work (1947). Within less than three decades, direct-legislation on economic and social policy formed the basis of the modern welfare state in Switzerland.

To study how turnout affects public policy we analyze the effects of sanctioned compulsory voting that the canton of Vaud introduced in November 1924.[3] According to Vaud's compulsory voting law

[3]Law on political rights #113/49, 17th November 1924.

all citizens between the age of 20 and 65 years had to participate in federal referendums. To assess whether the introduction of compulsory voting constitutes an exogenous intervention, we searched the cantonal archives and carefully reviewed a large set of primary documents including parliamentary minutes and newspapers. These sources suggest that policymakers in Vaud tried to improve political participation and interest in political matters and to ensure that outcomes of federal referendums in Vaud had a stronger impact on federal legislative decisions (Bulletin du Grand Conseil 1924, p. 658).

The archival material suggests that policymakers explicitly viewed the introduction of compulsory voting for federal referendums as an experiment to learn about its actual effects on civic engagement (Bulletin du Grand Conseil 1924, p. 705-707). At the end of the parliamentary debate, the FDP supported the introduction of compulsory voting while the SP opposed it. Thus, the SP did not strategically introduce compulsory voting because they expected to particularly benefit from it, which lends plausibility to the idea of compulsory voting as an exogenous policy intervention.[4] The revenues from the fine, which varied between 8'000 and 16'000 Swiss francs per referendum, helped financing a charity fund for poor people and public hospitals.[5]

Vaud's compulsory voting law sanctioned nonvoters by imposing a fine of two Swiss francs (Gazette de Lausanne 1924). This amount appears substantial, as it equaled about 125% of a low-skilled worker's hourly wage (Siegenthaler and Ritzmann 1996). Local police authorities collected the fine by visiting nonvoters' homes in person. Vaud temporarily suspended its compulsory voting law in the World War II period from 1940 to 1945 and reactivated it in late 1945 (Gazette de Lausanne 1945). Although Vaud's government continued to generally support compulsory voting, it was eventually abolished in 1948 because of its high administrative costs.

IV. Data and Method

A. Dependent Variables

We collected district-level data (103 districts) on *Turnout* in all federal referendums (21) held from 1908 to 1948 together with information about the outcomes of these direct-democratic decisions. Table

[4]Note that for a clean identification of the treatment effect only the *timing* of the introduction of compulsory voting, not the policy per se, has to be exogenous.

[5]The appendix provides the exact text of the compulsory voting law (see Table 9 in the Appendix).

7 in the Appendix provides a list of all referendums included in our sample together with information about turnout and Yes/No vote shares. Examining these referendum results provides us with a direct measure of support for a specific policy issue. In contrast, the use of a party's vote share would not allow us to disentangle whether changes in electoral support are due to the specific combination of its multidimensional policy platform, its candidates, or their perceived competence. By examining votes on specific policy issues we avoid this challenging complication.

To explore the effects of compulsory voting on support for left/right policies, we need measures of electoral support for policy proposals endorsed by the left. We create the variable *Support Left* which measures the share of votes for a proposal if it is endorsed by the social democratic party (SP) and the share of votes against a proposal if the SP recommends to vote against the proposal.[6] More formally, we define *Support Left* as

$$\textit{Support Left} := \begin{cases} \frac{\#\text{Yes}}{\#\text{EV}} & \text{if } SP = 1 \\ \frac{\#\text{No}}{\#\text{EV}} & \text{if } SP = 0, \end{cases} \tag{1}$$

where #Yes and #No is the number of yes and no votes, respectively, and #EV denotes the number of eligible voters. The proposal-specific indicator variable SP equals 1 if the proposal was endorsed by the SP and is 0 if the SP opposed the proposal.

Analogously, we create the variable *Support Right* to measure support for right policy proposals defined as:

$$\textit{Support Right} := \begin{cases} \frac{\#\text{Yes}}{\#\text{EV}} & \text{if } FDP = 1 \\ \frac{\#\text{No}}{\#\text{EV}} & \text{if } FDP = 0, \end{cases} \tag{2}$$

where #Yes and #No is the number of yes and no votes, respectively, and #EV denotes the number of eligible voters. The proposal-specific indicator variable FDP equals 1 if the proposal was endorsed by the FDP and is 0 if the FDP opposed the proposal. [7]

[6] For each referendum, Table 7 in the Appendix also provides information about whether the SP endorsed it.

[7] Note that some proposals were neither supported nor opposed by the SP, the FDP or both. In these cases parties declared a free vote. While we would have liked to also identify those federal proposals that were endorsed by the right-wing party SVP (Swiss People's Party), this is not possible because this party has not been founded until 1918. Moreover, for the post-1918 period we find that in more than 80% of the proposals both the FDP and the SVP held the

Finally, to allow for a direct statistical test of the relative effect of changes in turnout on electoral support we construct the variable *Relative Support Left*. This variable measures the share of yes votes as a share of the total number of valid votes if the SP endorses the proposal and the share of no votes as a share of the total number of valid votes if the SP opposes the proposal. Thus, this variable directly measures relative electoral support for policy positions of the left. Formally, the variable is defined as:

$$\textit{Relative Support Left} := \begin{cases} \frac{\#\text{Yes}}{\#\text{Yes}+\#\text{No}} & \text{if } SP = 1 \\ \frac{\#\text{No}}{\#\text{Yes}+\#\text{No}} & \text{if } SP = 0 \end{cases} \tag{3}$$

We collect a large set of covariates that previous work has shown to help predict turnout and election outcomes. This data include the number of ballots in a referendum, public spending and revenues, percentage of secondary students, share of urban population, and share of people older than 50 or 60, respectively. Since economic indicators are only available since 1998, we use the number of motor vehicles per person as a proxy for the level of the economy (Ashenfelter and Kelley 1975; Knack 1995; Filer, Kenny, and Morton 1993; Duch and Stevenson 2010). Table 6 in the Appendix provides a complete covariate list and data sources.

B. Research Design

We estimate the causal effect of compulsory voting on turnout and support for left/right policy proposals in federal referendums. Ideally, we would compare district-level outcomes of federal referendums under voluntary voting with referendum outcomes in the same districts under compulsory voting. However, we never observe both outcomes for the same districts. Therefore, we need to impute a credible counterfactual that serves as the baseline when estimating a causal effect. A simple before-and-after comparison of treated districts will fall short of providing convincing causal estimates as many time-varying factors may be responsible for differences in the outcome variables over time. For

same policy positions. We also examined the consistency of FDP and SP endorsements at the national and cantonal level. Using data from 1970, we find that these differences are negligible. For the SP, 97.4% of the endorsements by this party at the national level coincided with those by the SP in Vaud. This figure is only slightly lower (91.1%) for the FDP.

example, citizens voted on different policies in these periods which would undermine the credibility of such a before-and-after comparison.

To estimate the causal effect of compulsory voting on support for redistributive policy we employ standard fixed effects regression. The idea is to impute the missing counterfactual, i.e., the change in electoral support for a specific policy proposal we would expect in the treated districts in the absence of compulsory voting, using the change in electoral support for the same policy proposals in comparable control districts that did not practice compulsory voting. This design allows us to identify the causal effect in the presence of unobservable, time-invariant or smoothly-changing confounders. The appendix (section I) provides a detailed, formal treatment of the estimation strategy.

The fixed effects regressor for panel data, a generalization of the difference-in-difference design to multiple time periods, provides us with a valid causal estimate under the parallel trends assumption as stated in equation (5) in the appendix (Angrist and Pischke 2008). The parallel trends assumption says that in the absence of compulsory voting, the dependent variable (e.g., turnout) would have experienced the same changes over time as in the control districts where voting remained voluntary during the treatment period. Further below we show that the parallel trends assumption is plausible in our application.

We estimate the effect of compulsory voting on policy support using fixed-effects regression as it identifies our quantity of interest solely on the basis of within-district variation in turnout and referendum outcomes. Therefore, this identification strategy prevents unobserved, time-invariant district characteristics, such as a district's geographic features, its local political culture, or its structural demographic, economic, and social composition, to confound our causal effect (see section I for details). Furthermore, the inclusion of district-specific time trends even helps to account for smooth local trends in unobserved confounders, such as smooth changes in voter preferences

Several features of our research design suggest the use of two-way clustered standard errors to avoid falsely rejecting the null hypothesis of no effect (Bertrand, Duflo, and Mullainathan 2004). More specifically, since we observe the same districts over time and all districts vote on the same referendum on the same day, we have to account for intra-district and contemporaneous dependence. Although this does not affect the estimated treatment effect, which will remain unbiased, throughout

all estimations we compute standard errors that use the two-way variance estimator proposed by Cameron, Gelbach, and Miller (2011) which provides us with standard errors that are robust against both potential district-level and referendum-level dependencies. We also address the fact that our treatment is imposed at the cantonal level, as this means that the treated districts within a canton are not independent in case of a common cantonal-level shock. Although, again, this does not affect the magnitude of the estimated treatment effect, this may result in deflated standard errors. To address this issue, we compute the p-values using the two-way clustered standard errors in combination with a t-distribution with only 10 degrees of freedom. This reflects that, although we have 12 cantons in our sample, the intervention was imposed at the cantonal level and, additionally, one of our covariates (share of automobiles) is measured at the cantonal level.

V. Results

A. Compulsory Voting, Turnout, and Support for Policy

Model 1 in Table 1 presents fixed effects regression estimates of the impact of compulsory voting on turnout in federal referendums. We focus on referendums in which the two major parties made conflictual endorsements, i.e., one of the parties recommended voting for a policy while the other party advocated voting against the proposal.[8] All models include district and referendum fixed effects. We also include district-specific linear time trends to account for smooth, time-varying trends at the district level and a full set of socio-demographic and economic covariates.[9] All estimations use two-way robust standard errors that are clustered by district and referendum day (Cameron, Gelbach, and Miller 2011). Additionally, for our treatment estimate we report p-values that are based on the t-distribution with 10 degrees of freedom. This is because there are 12 cantons in our sample, but we loose one degree of freedom by estimating the treatment effect (compulsory voting was applied at the cantonal level) and another degree of freedom because one of the covariates (share of automobiles) is measured at the cantonal level. We report several additional robustness and placebo tests further

[8]This choice implies that the referendums in the period in which compulsory voting was temporarily suspended is no longer in the sample because there are no conflictual referendums in that period.

[9]The covariates are: Share of catholic population, share employed in the primary sector, share employed in the secondary sector, share of self-employed individuals in the primary sector, share of self-employed individuals in the secondary sector, share of automobiles. Table 4 in the Appendix reports the full results including the estimates for these covariates.

below. According to Model 1 in Table 1, turnout in referendums increases significantly ($p < 0.01$) by 29 percentage points on average in the period in which Vaud practiced compulsory voting. To better grasp the magnitude of this effect we divide the point estimate by the counterfactual turnout level in the absence of compulsory voting. We find that compulsory voting boosts turnout by 53% on average.

Table 1: Differential Mobilization Under Compulsory Voting

Model	(1)	(2)	(3)	(4)
Outcome	Turnout	Support Left	Support Right	Rel. Support Left
Mean in treated VD	0.84	0.32	0.52	0.38
Compulsory voting	0.29	0.22	0.08	0.19
	(6.19)	(3.35)	(1.30)	(2.52)
	[0.00]	[0.01]	[0.22]	[0.03]
Observations	2,163	2,163	2,163	2,163
Districts	103	103	103	103
District FEs	✓	✓	✓	✓
Referendum Day FEs	✓	✓	✓	✓
District linear time trends	✓	✓	✓	✓
District quad. time trends	✗	✗	✗	✗
Covariates	✓	✓	✓	✓
Effect Size (% Δ)	53%	220%	18%	100%

Note: This table shows the coefficients from fixed effect regressions with t-statistics in parentheses and p-values in brackets. The outcome of model (1) is turnout, of model (2) support left, of model (3) support right and of model (4) relative support left. All specifications include district and referendum day fixed effects, as well as linear district-specific time trends and the full set of covariates. Standard errors (not shown) are two-way clustered by district and referendum days. The p-values are based on the t-distribution with 10 (number of cantons in the sample minus 2) degrees of freedom to take into account that compulsory voting was imposed at the cantonal level and one of the covariates (share of automobiles) is measured at the cantonal level. Effect size is the percent increase in the outcome variable for the treated districts relative to the counterfactual outcome level in the absence of the treatment. Compulsory voting was enforced from 1925 to 1939 and from 1946 to 1948. It was suspended from 1940 to 1945. Covariates: Share of catholic population, share employed in the primary sector, share employed in the secondary sector, share of self-employed individuals in the primary sector, share of self-employed individuals in the secondary sector, share of automobiles.

How does this pronounced increase in political participation affect public policy? In Model 2 we regress *Support Left*, which measures the share of votes for proposals endorsed by the SP and the share of votes against a proposal if the SP recommends to vote against the policy, on the compulsory voting treatment indicator. We again include a full set of socio-demographic and economic covariates, district fixed effects, referendum fixed effects, and district-specific linear time trends. The results suggest that electoral support for left policy positions increases significantly by 22 percentage points in the period in which Vaud sanctioned non-voters. This represents a highly significant ($p < 0.01$) increase of more than 200% over the baseline level of support for left policy positions in the absence of compulsory voting.

According to the equal mobilization argument, compulsory voting should have also mobilized support for right policies. To evaluate this prediction, we estimate the effect of compulsory voting on on the variable *Support Right*. Model 3 in Table 1 reports the results. The coefficient on our treatment indicator is significantly positive and suggests that support for right policy positions is on average 8 percentage points higher under compulsory voting, a difference that is not significant ($p > 0.2$). This effect equals an 18% increase over the counterfactual level of electoral support for policy positions of the political right. Thus, both the treatment estimate for the effect of compulsory voting on support right and its substantive magnitude appear much smaller than for *Support Left*.

To more directly assess the differential mobilization effect of compulsory voting we regress the variable *Relative Support Left* on the treatment indicator. We find that compulsory voting significantly ($p < 0.03$) increases relative support for policy positions advocated by the left party by 19 percentage points on average. Compared to the counterfactual level of relative support left this constitutes an increase by 100%. Thus, the turnout increase due to compulsory voting doubles electoral support for left policies even when taking into account that it also has some minor mobilization effects on voters of the right.

So far, we have treated all referendums as being equally important. This, however, seems a questionable assumption. For example, when considering the era of industrialization, policy decisions on social benefits, labor rights, or pension systems are defining issues for left parties, whereas other issues, such as, foreign policy or public transport, play much less of a role. Such differences in issue salience can reflect the importance attached to these issues by a party (Benoit and Laver 2006) or its voters (Ansolabehere, Rodden, and Snyder 2008), or may result from the need to efficiently allocate scarce campaign resources by focusing on selected core issues (Hauser, Morton, and Stratmann 2011).

This has direct consequences for a party's mobilization efforts and the effect of compulsory voting. Parties tend to mobilize more strongly and successfully when citizens have to vote on core issues as compared to peripheral issues that have a lower priority on their policy agenda. This reasoning implies that, although compulsory voting will generally increase support for left policies, it will most strongly mobilize voters in referendums on non-core issues because parties spend their resources on maximizing support for core issues. Thus, the effect of compulsory voting on turnout and support for

left policies should be greater when the referendum is on peripheral issues than when voters decide on core issues where parties have already heavily mobilized.

To evaluate this prediction we performed a qualitative coding of all referendums to identify those proposals that concerned core issues of the left. These are decisions on unemployment benefits, pensions, size of government, social welfare, labor rights, minimum wage, and immigration. We use this binary indicator to partition the data and reestimate the main models on these samples. Table 2 reports the results. First, we note that the effect of compulsory voting on turnout is significant and sizable for both core and non-core issues. However, we find that for non-core issues the effect of compulsory voting on turnout is greater (38 percentage points) than for core issues (24 percentage points), although the mean turnout in Vaud under compulsory voting is very similar (86% and 83%). This is consistent with the argument that compulsory voting has the strongest effect on turnout when parties tend to mobilize less. In contrast, when parties' campaign efforts succeed in realizing almost the full potential of electoral support for a policy, compulsory voting itself has less pronounced effects.

Table 2: The Policy Effects of Compulsory Voting on Core Issues of the Left

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Outcome	Turnout		Support Left		Support Right		Rel. Support Left	
Core Issue Left	No	Yes	No	Yes	No	Yes	No	Yes
Mean in treated VD	0.86	0.83	0.42	0.25	0.44	0.58	0.49	0.30
Compulsory voting	0.38	0.24	0.41	0.15	-0.03	0.09	0.39	0.11
	(3.37)	(6.65)	(3.19)	(3.38)	(0.38)	(1.57)	(3.03)	(1.95)
	[0.01]	[0.00]	[0.01]	[0.01]	[0.71]	[0.15]	[0.01]	[0.08]
Observations	1,545	1,545	1,545	1,545	1,545	1,545	1,545	1,545
Districts	103	103	103	103	103	103	103	103
District FEs	✓	✓	✓	✓	✓	✓	✓	✓
Referendum Day FEs	✓	✓	✓	✓	✓	✓	✓	✓
District linear time trends	✓	✓	✓	✓	✓	✓	✓	✓
District quad. time trends	✗	✗	✗	✗	✗	✗	✗	✗
Covariates	✓	✓	✓	✓	✓	✓	✓	✓
Effect Size (% Δ)	79%	41%	4100%	150%	-6%	18%	390%	58%

Note: This table shows the coefficients from fixed effect regressions with t-statistics in parentheses and p-values in brackets. The outcome of models (1) and (2) is turnout, of models (3) and (4) support left, of models (5) and (6) support right and of model (7) and (8) relative support left. All specifications include district and referendum days. Standard errors (not shown) are two-way clustered by district and referendum days. The p-values are based on the t-distribution with 10 (number of cantons in the sample minus 1) degrees of freedom to take into account that compulsory voting was imposed at the cantonal level. Effect size is the percent increase in the outcome variable for the treated districts relative to the counterfactual outcome level in the absence of the treatment. Compulsory voting was enforced from 1925 to 1939 and from 1946 to 1948. It was suspended from 1940 to 1945. A proposal is coded as a core issue if it involves a decision on unemployment benefits, pensions, size of government, social welfare, labor rights, minimum wage, or immigration. Covariates: Share of catholic population, share employed in the primary sector, share employed in the secondary sector, share of self-employed individuals in the primary sector, share of self-employed individuals in the secondary sector, share of automobiles.

The remaining results in Table 2 underscore this impression. The effect of compulsory voting is considerably stronger for referendums on non-core issues. When considering support left (Model 4), the treatment effect for peripheral issues is estimated at 42 percentage points while the effect for core issues is considerably smaller (15 percentage points). We re-estimate the main model for relative support left (Models 7 and 8). Although compulsory voting still significantly increases electoral support for left policies, this differential mobilization effect is more pronounced when examining referendums on policy proposals that do not constitute core issues of the left. Taken together, our results suggest that, although compulsory voting affects electoral support significantly for both peripheral and core issues, the effect materialized most strongly in referendums on less defining issues.

These estimates provide information about average treatment effects. But what did the effects of compulsory voting look like in specific and politically important referendums? To illustrate the impact of the surge in turnout we compute its effects on three policy proposals particularly relevant from the perspective of the left-right welfare state cleavage. The first referendum is the so called "crisis initiative" in 1935, a popular initiative to fight the economic crisis. The initiative stipulated a large set of left policy reforms including a state guarantee for a minimum wage, subsidies to workers and farmers, higher unemployment benefits, stricter regulation of financial markets, restrictions on capital outflows, and stricter anti-trust regulation. Based on our estimates, compulsory voting increased support for the crisis initiative in Vaud by 20 percentage points as compared to the counterfactual level of support in the absence of compulsory voting. As another example, consider the popular initiative to introduce the right to work in 1947. According to our findings, electoral support for this policy was 35 percentage points higher in Vaud than it would have been without compulsory voting. Clearly, political power also implies the ability to prevent policy changes advocated by political opponents. Therefore, as a final example, we have computed the effect of compulsory voting on electoral support for a federal bill that aimed at reducing public officials' salaries in 1933. The SP opposed this bill and we find that compulsory voting reduced support for this proposal by 14 percentage points due to the mobilization effect of compulsory voting.

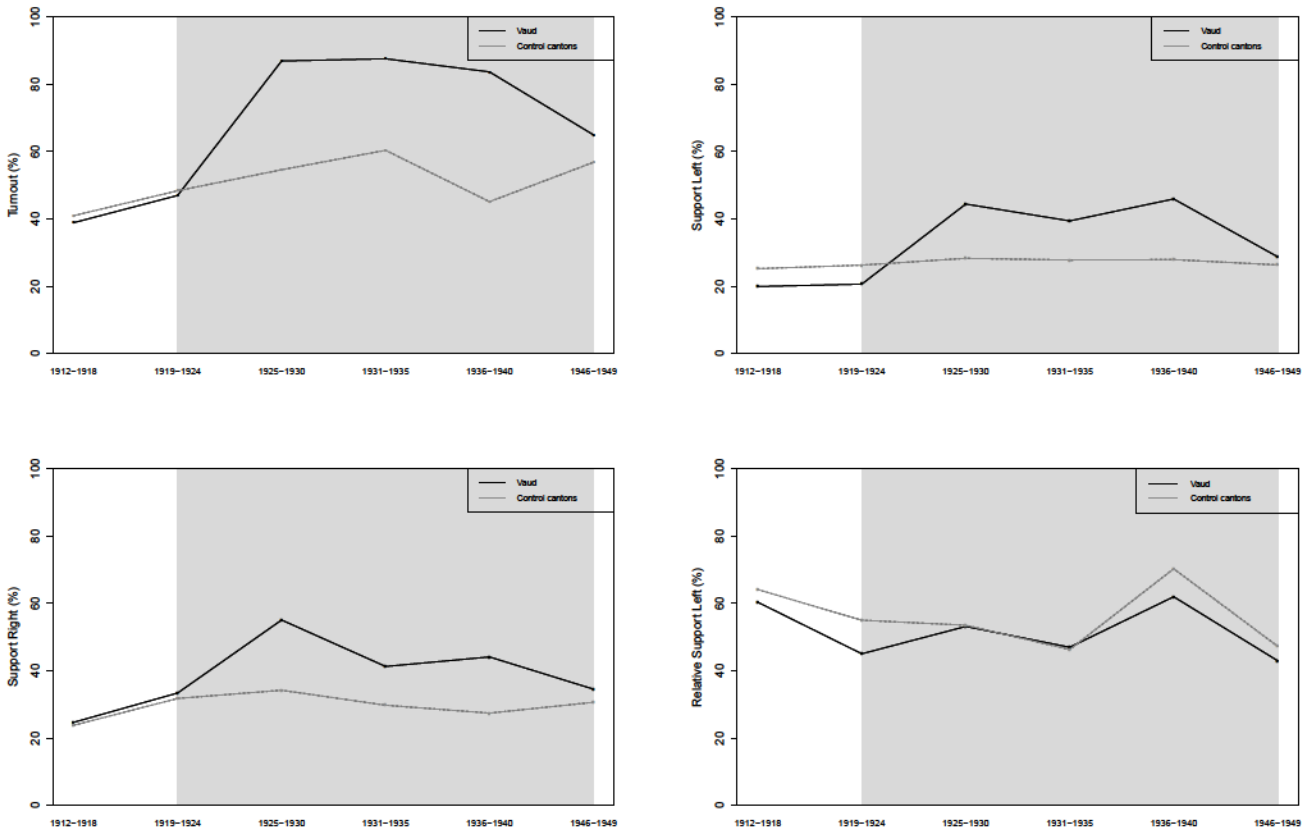
B. Identifying Assumption and Robustness

Parallel Trends Assumption

To assess the plausibility of our identifying assumption, we consider the evolution of all four of our outcome variables in treated and control districts in the pre-treatment period. This constitutes an important step to assess whether the outcome variables in treated and control districts followed parallel trends prior to the introduction of compulsory voting. If this is the case, this adds to the credibility of our results. The upper left panel in Figure 1 plots average turnout in treated and control districts. In the period prior to compulsory voting, turnout evolves almost perfectly similar in both treated and control districts. Although this does not constitute a direct test of the parallel trends assumption (which remains fundamentally untestable), it lends credibility to the assumption that in the absence of compulsory voting, treated and control districts would have followed the same turnout trajectory.

We also examine the pre-treatment trends in support for left and right policy proposals. The upper right panel in Figure 1 shows the evolution of support for proposals endorsed by the SP in treated and control districts over time. In the pre-treatment period, electoral support for policies endorsed by the social democratic party evolve similarly in both treated and control districts. But once compulsory voting is introduced, support increases in treated districts and remains virtually constant in the control district. The lower left panel in Figure 1 shows the pre-treatment trends in support for proposals endorsed by the right. Support for proposals endorsed by the FDP follow very similar trends in treated and control districts prior to the introduction of compulsory voting.

Figure 1: Pre-Treatment Trends in Turnout and Support for Parties' Policy Positions in Federal Referendums



Note: The figure shows pre-treatment trends (period averages) for our four outcome variables for treated and control districts in percent. The upper left panel shows trends in turnout, the upper right panel shows trends in support for proposals endorsed by the left, the lower left panel shows trends in support for proposals endorsed by the right, and the lower right panel shows relative support for proposals endorsed by the left. Vaud introduced compulsory voting in 1925.

The lower right panel in Figure 1 plots how relative support for left policy proposals developed in treated and control districts. We find that prior to the introduction of compulsory voting, support for left policy relative to right policy proposals trended downwards in both groups, although the decrease appears slightly stronger in the group of treated districts. However, this suggests that our results for relative support for left policy will tend to be conservative as we would underestimate the change in our outcome variable based on the trends observable in the control districts. Taken together, these results strengthen our confidence in the identifying assumption: It appears reasonable to assume that in the absence of compulsory voting, our outcomes of interest would have followed similar trends. Therefore, changes in the dependent variables in the control district provide us with a credible counterfactual

evolution of turnout and policy support in the treated districts.

Robustness

We conduct a series of additional tests to explore the robustness of our results. First, we reestimate all models and additionally include district-specific quadratic time trends. This functional form relaxes the assumptions needed for estimation since it eliminates non-linear local trends in unobserved covariates, e.g., smooth changes in sociodemographics like economic growth or age structure. As a consequence, this adds to our confidence that the estimated treatment effect can be attributed to the introduction of compulsory voting and not to some trend in unobserved covariates. The results from in Table 3 are virtually identical to those reported in Table 1. We also reestimate the treatment effects non-parametrically by excluding all covariates and time trends. In this specification, the effects of compulsory voting are identified as a difference in means without making additional assumptions about the functional form that maps covariates into outcomes. Table 8 in the Appendix shows the results. The treatment effects are somewhat smaller, but exhibit the same pattern: We find a strong and significant turnout increase (estimated at 23 percentage points) under compulsory voting and the effect on electoral support is again differential: Relative support for left policy increases significantly by about 13 percentage points during compulsory voting and this effect constitutes a 52% increase relative to the level of support we would expect in the absence of compulsory voting.

We also conduct a series of falsification tests by estimating placebo treatment effects for the control districts (Abadie, Diamond, and Hainmueller 2010). This permutation test proceeds as follows: We define a placebo treatment group that contains all districts in a canton and pretend that these districts practiced compulsory voting in the placebo treatment period defined as 1925 to 1939 and 1945 to 1948.[10]. Based on this assignment we then generate additional temporal variation by including four leads and four lags of the placebo treatment indicators. This provides us with a total of nine placebo treatment period indicators. For each of these indicators we estimate a regression identical to our main model with district fixed effects, referendum fixed effects, district-specific linear time trends, and all covariates to compute the placebo treatment effect. We repeat this procedure for all 11 control

[10] Assigning all districts in a canton to either the placebo treatment or the control condition is important to mirror that the actual treatment is applied at the cantonal level

Table 3: Differential Mobilization Under Compulsory Voting: District-specific Quadratic Time Trends

Model	(1)	(2)	(3)	(4)
Outcome	Turnout	Support Left	Support Right	Rel. Support Left
Mean in treated VD	0.84	0.32	0.52	0.38
Compulsory voting	0.30	0.21	0.08	0.18
	(6.06)	(3.44)	(1.48)	(2.53)
	[0.00]	[0.01]	[0.17]	[0.03]
Observations	2,163	2,163	2,163	2,163
Districts	103	103	103	103
District FEs	✓	✓	✓	✓
Referendum Day FEs	✓	✓	✓	✓
District linear time trends	✓	✓	✓	✓
District quad. time trends	✓	✓	✓	✓
Covariates	✓	✓	✓	✓
Effect Size (% Δ)	56%	191%	18%	90%

Note: This table shows the coefficients from fixed effect regressions with t-statistics in parentheses and p-values in brackets. The outcome of model (1) is turnout, of model (2) support left, of model (3) support right and of model (4) relative support left. All specifications include district and referendum day fixed effects, as well as linear and quadratic district-specific time trends and the full set of covariates. Standard errors (not shown) are two-way clustered by district and referendum days. The p-values are based on the t-distribution with 10 (number of cantons in the sample minus 2) degrees of freedom to take into account that compulsory voting was imposed at the cantonal level. Effect size is the percent increase in the outcome variable for the treated districts relative to the counterfactual outcome level in the absence of the treatment. Compulsory voting was enforced from 1925 to 1939 and from 1946 to 1948. It was suspended from 1940 to 1945. Covariates: Share of catholic population, share employed in the primary sector, share employed in the secondary sector, share of self-employed individuals in the primary sector, share of self-employed individuals in the secondary sector, share of automobiles.

cantons and plot the distribution of these 99 placebo treatment effects. This provides us with the distribution of the treatment effect under the null hypothesis of no effect and does not rely on any assumption about the correlation structure between the error terms.

The upper left panel in Figure 3 in the Appendix plots the frequencies of placebo treatment effects on turnout for the control districts. The mass of the distribution is concentrated at 0 percentage points and the effects are roughly symmetrically distributed. The red bar in Figure 3 indicates the actual treatment effect for our treated districts estimated in the main analysis (about 30 percentage points). We note that all placebo effects are clearly located to the left of this effect. This suggests that the turnout effect we document can be attributed to the fact that Vaud introduced compulsory voting. When computing the corresponding p-value we find that the turnout effect is highly significant ($p = 0.01$). We repeat this permutation test for all remaining outcome variables: support left ($p = 0.01$), support right ($p = 0.15$), and relative support left ($p = 0.02$). As predicted by the bias correction argument, the results suggest that the turnout increase induced by compulsory voting

had a significantly positive effect on support for policies advocated by the left, both in absolute and relative terms. The p-values derived from these permutation tests are very similar, and if anything even smaller compared to those computed from the two-way clustered standard errors reported above.

VI. Conclusion

If political participation is skewed toward specific parts of the electorate, typically those with low income and less education, democracy may bias policy in favor of those who vote and thereby fail to serve the interests of those who are not represented. Some have argued that compulsory voting may alleviate this problem as it would mobilize politically inactive citizens which could reduce representational inequality and policy bias. Although this argument has attracted considerable attention in the literature and the potential gravity of the underlying problem is well known we have very little systematic knowledge about the actual policy effects of compulsory voting.

We argue that sanctioned compulsory voting increases support for redistributive policies because it imposes the highest costs on citizens at the bottom of the income distribution which tend to hold left policy preferences. We explore the empirical validity of this argument in the context of a direct-democratic system where citizens directly vote on policy issues in referendums. Our results suggest that sanctioned compulsory voting increases turnout in federal referendums massively, by about 30 percentage points on average. More importantly, we find that this turnout increase has a pronounced positive effect on support for left policy proposals: Electoral support for policy proposals endorsed by the social democratic party doubles under compulsory voting. We also conduct a set of simulations to explore the magnitude of these effects in specific important referendums that lie at the heart of the left-right cleavage. We find that compulsory voting induced profound shifts in votes for redistributive policy and stricter market regulation. At the same time, our results suggest that the differential mobilization effect of compulsory voting is lower (but still significant) in referendums on core issues. This finding is consistent with the argument that parties concentrate campaign spending on core issues, which limits the potential effect compulsory voting can have on electoral outcomes.

These findings add to several literatures that have examined the economic and social policy effects of electoral institutions and inform the long-standing debate about the impact of political mobilization

on political stability. First, since we examine the effects of compulsory voting on support for redistributive policies in the period of industrialization and the great depression, our findings underscore the importance of institutions as an important determinant of the evolution of the modern welfare state and its major components. Second, although our analysis focuses on the electoral effects of compulsory voting on support for specific policies, we expect the findings to also inform the debate about whether political mobilization leads to increasingly erratic electoral outcomes and unstable political majorities by increasing the share of uninformed voters who tend to vote almost randomly. At least in the case we examine, sanctioning non-voting leads to a systematic increase in electoral support for left policies which appears difficult to square with the random voting argument. We acknowledge that low turnout under voluntary voting constitutes a necessary condition for the pronounced effects that we document. However, turnout has been decreasing for decades in most industrialized democracies (Dalton and Wattenberg 2000) and is far from universal in many countries. In the U.S., for example, average turnout in presidential elections has been remained below 60% since the 1968 presidential election and in many countries participation rates in subnational and EU elections are even lower. Therefore, we believe that our results provide relevant evidence that informs ongoing public and academic debates about the desirability and effects of compulsory voting on public policy.

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Appendix

I. Research Design and Estimation Details

To estimate the causal effects of compulsory voting on support for public policy we employ standard fixed effects regression that generalizes the difference-in-differences estimator to multiple time periods. This design allows us to identify the causal effect even in the presence of unobservable, time-invariant or smoothly changing confounders.

We introduce the following notation. Our geographic units are districts $i = \{1, 2, \ldots, I_0-1, I_0, I_0+1, \ldots, I\}$ in which citizens vote on federal referendums denoted $t = \{1, 2, \ldots, T\}$. In the control districts, $I_0 + 1, \ldots, I$, voting remained voluntary throughout the sample period $1, 2, \ldots, T$. In the treated districts, $1, \ldots, I_0$, voting remained voluntary for referendums in period p and was compulsory for referendums in period d. To simplify notation, we define the period indicator[11] τ as:

$$\tau = \begin{cases} p & \text{if } t \leq T_0 \\ d & \text{if } t \in \{T_0 + 1, \ldots, T_1, T_2 + 1, \ldots, T_3\}. \end{cases}$$

We define the causal effect of compulsory voting for the treated districts as

$$\alpha_{ATET} = E[Y_{it}(1) - Y_{it}(0) \mid \tau = d, i \leq I_0], \tag{4}$$

where $Y_{it}(1)$ is the potential outcome under treatment for district i and referendum t and $Y_{it}(0)$ the corresponding potential outcome under control. Figure 2 in the Apendix shows a map of Switzerland in the early 20th century. Districts in areas shaded gray are included in the control group. We exclude districts from the analysis in which voting was compulsory at some point in the sample period. While the potential outcome $Y_{it}(1)$ for the treated districts in the treatment period (i.e., $i \leq I_0$ and $\tau = d$) is observed (Y_{it}), the corresponding potential outcome under control, $Y_{it}(0)$, is counterfactual for these referendums and districts.

Under the parallel trends assumption,

$$E[Y_{it}(0) \mid \tau = d, i \leq I_0] - E[Y_{it}(0) \mid \tau = p, i \leq I_0] = E[Y_{it}(0) \mid \tau = d, i > I_0] - E[Y_{it}(0) \mid \tau = p, i > I_0], \tag{5}$$

we can estimate the causal effect of compulsory voting on the treated districts, α_{ATET}, using standard fixed-effects regression. The parallel trends assumption says that in the absence of compulsory voting, the dependent variable (e.g., turnout) would have experienced the same changes as in the control districts, i.e., parallel to the observed shifts in the districts where voting remained voluntary during the treatment period. Based on the parallel trends assumption (Equation 5) we can identify the effect of compulsory voting on the treated districts as a difference in differences (Angrist and Pischke 2008):

$$\begin{aligned} \alpha_{ATET} = E[Y_{it}(1) - Y_{it}(0) \mid \tau = d, i \leq I_0] \\ = \underbrace{\{E[Y_{it} \mid \tau = d, i \leq I_0] - E[Y_{it} \mid \tau = d, i > I_0]\}}_{\text{Difference between treated and control in the treatment period}} \\ - \underbrace{\{E[Y_{it} \mid \tau = p, i \leq I_0] - E[Y_{it} \mid \tau = p, i > I_0]\}}_{\text{Difference between treated and control in the pretreatment period}} \end{aligned} \tag{6}$$

To estimate α_{ATET} we use standard fixed effects regression that readily generalizes the difference-in-difference estimator to several pre-and post-treatment periods:

$$Y_{it} = \eta_i + \delta_t + \alpha_{ATET} \,\text{Compulsory Voting}_{it} + X_{it}'\beta + \varepsilon_{it},$$

where Y_{it} is either turnout or support for left/right referendum proposals, η_i denotes a district fixed effect that controls for time-invariant unobserved factors, δ_t is a referendum fixed effect to control for common shocks, Compulsory Voting$_{it}$ is a binary indicator that equals 1 if voting is compulsory in a given district and time and 0 otherwise, X_{it} is a vector of time-varying covariates, including a constant, and ε_{it} is an idiosyncratic error term with $E[\varepsilon_{it}|\eta_i, \delta_t, \text{Compulsory Voting}_{it}, X_{it}] = 0$ and finite variance. The parameter α_{ATET} captures the effect of switching from voluntary to compulsory voting. The fixed-effects regression identifies this quantity solely on the basis of within-district variation in turnout and referendum outcomes. Therefore, this identification strategy prevents unobserved, time-invariant district characteristics, such as a

[11] Note that compulsory voting was suspended during the WWII years between $T_1 + 1, \ldots, T_2$.

district's geographic features, its local political culture and history, or its structural demographic, economic, and social composition, to confound our causal effect. Furthermore, the inclusion of district-specific time trends even helps to account for smooth local trends in unobserved confounders.

Appendix Tables

Table 4: Main Model: All Estimates

Model	(1)	(2)	(3)	(4)
Outcome	Turnout	Support Left	Support Right	Rel. Support Left
Mean in treated VD	0.84	0.32	0.52	0.38
Compulsory voting	0.29	0.22	0.08	0.19
	(6.19)	(3.35)	(1.30)	(2.52)
	[0.00]	[0.01]	[0.22]	[0.03]
% Catholic	0.14	-0.28	0.43	-0.35
	(0.59)	(0.69)	(1.13)	(0.66)
	[0.57]	[0.51]	[0.28]	[0.52]
% Sector 1	-0.20	-0.28	0.07	-0.26
	(0.73)	(0.74)	(0.20)	(0.48)
	[0.48]	[0.48]	[0.85]	[0.64]
% Sector 2	-0.23	0.26	-0.49	0.67
	(0.79)	(0.94)	(1.18)	(1.43)
	[0.45]	[0.37]	[0.27]	[0.18]
% Self-employed sector 1	-0.09	-0.03	-0.05	0.32
	(0.29)	(0.11)	(0.17)	(0.90)
	[0.78]	[0.91]	[0.87]	[0.39]
% Self-employed sector 2	-0.11	0.21	-0.32	0.49
	(0.57)	(0.92)	(1.11)	(1.44)
	[0.58]	[0.38]	[0.29]	[0.18]
% Self-employed sector 3	0.22	-0.15	0.37	-0.30
	(1.25)	(0.83)	(1.64)	(1.09)
	[0.24]	[0.43]	[0.13]	[0.30]
% Automobiles	-0.01	-0.00	-0.00	-0.01
	(1.49)	(0.31)	(0.72)	(0.76)
	[0.17]	[0.76]	[0.49]	[0.46]
District size	0.00	-0.00	0.00	-0.00
	(0.80)	(1.13)	(1.97)	(1.09)
	[0.44]	[0.28]	[0.08]	[0.30]
Observations	2,163	2,163	2,163	2,163
Districts	103	103	103	103
District FEs	✓	✓	✓	✓
Referendum Day FEs	✓	✓	✓	✓
District linear time trends	✓	✓	✓	✓
District quad. time trends	✗	✗	✗	✗
Covariates	✓	✓	✓	✓
Effect Size (% Δ)	53%	220%	18%	100%

Note: This table shows the coefficients from fixed effect regressions with t-statistics in parentheses and p-values in brackets. The outcome of model (1) is turnout, of model (2) support left, of model (3) support right and of model (4) relative support left. All specifications include district and referendum day fixed effects, as well as linear district-specific time trends and the full set of covariates. Standard errors (not shown) are two-way clustered by district and referendum days. The p-values are based on the t-distribution with 10 degrees of freedom (number of cantons in the sample minus 2). Effect size is the percent increase in the outcome variable for the treated districts relative to the counterfactual outcome level in the absence of the treatment. Compulsory voting was enforced from 1925 to 1939 and from 1946 to 1948. It was suspended from 1940 to 1945.

Table 5: Overview of Compulsory Voting in Switzerland

Canton	**Compulsory Voting**		**Fine**
	Not sanctioned	Sanctioned	
Aargau		1848-1971	2 SFR
Appenzell Inner Rhodes	1856-1878	1879-1924	0.50 to 5SFR
Appenzell Outer Rhodes		1858-1955	10SFR
Basel-Landschaft	-	1848-1865	10SFR
Basel-Stadt	-	1803-1848	10 Batzen
Bern	1869-1980	1851-1869	1 SFR
Fribourg	-	-	
Geneva	1860 - 1925	-	
Glarus	1861-1888	1889 - 1961	5 to 10SFR
Graubuenden	-	1962 - 1971	1SFR
Lucerne		1848-1866	1SFR
Neuchatel	1848-1946	-	
Nidwalden	1850-1913	-	
Obwalden	1850-1971	-	
Schaffhausen	-	1866/72-today	1SFR, since 1973 3SFR
Schwyz		1848-1874	
Solothurn		1856-1899	
St Gallen		1876-1940, 1947-1979	2 to 5SFR
Thurgau		1870-1985	0.50 to 1 SFR
Ticino		1920-today	up to 3 SFR
Uri	1888-today	-	
Valais	-	-	
Vaud	-	1925-1940,1946-1948	2 SFR
Zug	1873-1955	-	
Zurich		1866-1932, 1955-1983	0.30 to 1 SFR, later 1 to 3 SFR (GV up to 50SFR)

Table 6: Variables Description

- *Turnout*: Percentage of voters as share of total number of citizens eligible to vote. Sources: Linder, Bolliger, and Zürcher (2007) and Swissvotes (2012)
- *Support Left*: Share of yes votes for left policy proposals. Policy proposals were coded as left if they were endorsed by the social democratic party. Sources: Linder, Bolliger, and Zürcher (2007) and Swissvotes (2012)
- *Support Right*: Share of yes votes for right policy proposals. Policy proposals were coded as right if they were endorsed by the liberal, pro-market FDP. Sources: Linder, Bolliger, and Zürcher (2007) and Swissvotes (2012)
- *Relative Support Left*: Share of yes votes for left policy proposals in the population of actual voters. Sources: Linder, Bolliger, and Zürcher (2007) and Swissvotes (2012)
- *Share of Catholics*: Share of individuals with Catholic denomination. Source: Linder, Bolliger, and Zürcher (2007)
- *% Sector 1*: Share of individuals working in primary sector. Source: Linder, Bolliger, and Zürcher (2007)
- *% Sector 2*: Share of individuals working in secondary sector. Source: Linder, Bolliger, and Zürcher (2007)
- *% Self-employed sector 1*: Number of self-employed individuals as a share of the total working population in the primary sector. Source: Linder, Bolliger, and Zürcher (2007)
- *% Self-employed sector 2*: Number of self-employed individuals as a share of the total working population in the secondary sector. Source: Linder, Bolliger, and Zürcher (2007)
- *% Self-employed sector 3*: Number of self-employed individuals as a share of the total working population in the tertiary sector. Source: Linder, Bolliger, and Zürcher (2007)
- *Automobiles*: Number of automobiles. Source: Siegenthaler and Ritzmann (1996)
- *District Size*: Total number of eligible voters in a district. Source: Linder, Bolliger, and Zürcher (2007)

Table 7: Overview of Federal Referendums Included in the Analysis

Date	Proposition	Issue	Turnout	Yes Share	SP
05.07.1908	Absinthe Prohibition Act	The initiative proposed a ban on the production, import, transport, and sale of absinthe.	49.3%	63.5%	Yes
23.10.1910	Proportional Election of National Council	The initiative proposed the introduction of proportional representation for elections to the National Council.	62.3%	47.5%	Yes
02.06.1918	Introduction of Federal Taxes	The initiative proposed the introduction of a federal income tax to cover military expenditures during World War I.	65.4%	45.9%	Yes
13.10.1918	Proportional Election of National Council	The initiative was the second attempt to introduce proportional representation for elections to the National Council.	49.5%	66.8%	Yes
16.05.1920	Membership to League of Nations	The mandatory referendum proposed Switzerland to join the League of Nations.	77.5%	56.3%	No
30.01.1921	Abolishment of Military Jurisdiction	The initiative proposed to abolish the Swiss military jurisdiction and to use the civilian judicial system to enforce military law.	63.1%	33.6%	Yes
22.05.1921	Federal Authority in Road and Air Traffic	The constitutional amendment shifted authority to enact new road and air traffic regulations from the cantonal to the federal level.	38.6%	59.8%	
24.09.1922	Criminal Code Act	The proposition proposed immediately arresting individuals who "constitute a threat to national security".	70.3%	44.6%	No
03.12.1922	Nonrecurring Property Tax Act	The initiative proposed the introduction of a nonrecurring federal property tax on individuals and firms with property exceeding 80,000 Swiss Francs.	86.3%	13.0%	Yes
15.04.1923	Federal Tariffs Act	The initiative proposed to abolish tariffs on consumer goods introduced in 1921.	65.8%	26.8%	Yes
17.02.1924	Factory Act	The proposition would have increased the working hours from 48 to 54 during times of economic crisis.	77.0%	42.4%	No
24.05.1925	Initiative for Old Age, Widow and Disability Insurance	The initiative proposed using the revenues from the nonrecurring war tax to finance an insurance for old age people, widows and disabled persons.	68.2%	42.0%	Yes
25.10.1925	Residence Permit for Foreigners	The proposition stipulated to shift residence responsibilities from the cantonal to the federal level.	68.0%	62.2%	No
03.03.1929	Tariff Act	The initiative proposed to increase import tariffs to finance the new federal system of corn production.	67.3%	66.4%	No
12.05.1929	Liquor Prohibition Act	The initiative allowed cantons to ban the production and sale of distilled spirits.	66.4%	32.7%	Yes
08.02.1931	Decorations Act	The proposition allowed federal and cantonal public officials to accept decorations of foreign countries.	41.8%	70.2%	No
15.03.1931	Number of Seats in the National Council	The proposition set the number of seats in the National Council to be constant at 200.	53.5%	53.9%	No
15.03.1931	Office Term Act	The proposition increased the term of elected National Council members from three to four years.	53.5%	53.7%	No

... table 7 continued

Date	Proposition	Issue	Turnout	Yes Share	SP
28.05.1933	Temporary Pay Cuts for Public Employees	The proposition would introduce a temporary pay cut for public employees.	80.5%	44.9%	No
11.03.1934	Public Order Act	The federal act proposed extending the criminal code to include several crimes against the state.	79.0%	46.2%	No
24.02.1935	Military Organization Act	The referendum proposed measures to strengthen the Swiss military.	79.9%	54.2%	No
05.05.1935	Transport Mode Act	The proposition was a proposal to increase the use of railroad transport by firms and carrying businesses.	63.2%	32.3%	No
02.06.1935	Initiative to Fight the Economic Crisis	The initiative required the federal state to take measures against the economic crisis in order to guarantee an adequate living standard for all Swiss citizens.	84.4%	42.8%	Yes
18.05.1947	Economic Reforms and Right to Work	The initiative required the state to provide economic welfare and proposed to include a right to work in the federal constitution.	59.4%	31.2%	Yes

Table 8: Differential Mobilization Under Compulsory Voting: Fixed-Effects Estimations

Model	(1)	(2)	(3)	(4)
Outcome	Turnout	Support Left	Support Right	Rel. Support Left
Mean in treated VD	0.84	0.32	0.52	0.38
Compulsory voting	0.23	0.17	0.06	0.13
	(5.69)	(3.47)	(1.67)	(2.64)
	[0.00]	[0.01]	[0.12]	[0.02]
Observations	2,163	2,163	2,163	2,163
Districts	103	103	103	103
District FEs	✓	✓	✓	✓
Referendum Day FEs	✓	✓	✓	✓
District linear time trends	✗	✗	✗	✗
District quad. time trends	✗	✗	✗	✗
Covariates	✗	✗	✗	✗
Effect Size (% Δ)	38%	113%	13%	52%

Note: This table shows the coefficients from fixed effect regressions with t-statistics in parentheses and p-values in brackets. The outcome of model (1) is turnout, of model (2) support left, of model (3) support right and of model (4) relative support left. All specifications include district and referendum day fixed effects. Standard errors (not shown) are two-way clustered by district and referendum days. The p-values are based on the t-distribution with 11 (number of cantons minus 1) degrees of freedom to take into account that compulsory voting was imposed at the cantonal level. The effect size is the percent increase of the average treatment effect on the treated relative to the counterfactual outcome levels in absence of the treatment. Compulsory voting was enforced from 1925 to 1939 and from 1946 to 1948. It was suspended from 1940 to 1945. Covariates: Share of catholic population, share employed in the primary sector, share employed in the secondary sector, share of self-employed individuals in the primary sector, share of self-employed individuals in the secondary sector, share of automobiles.

Table 9: Compulsory Voting Norm in the Swiss Canton of Vaud

Original Text

Vote obligatoire

Art. 49. En matière constitutionnelle ou législative fédérale, l'exercice du droit de vote est obligatoire pour tout citoyen âgé de moins de 65 ans révolus, inscrit au rôle des électeurs. Le citoyen qui n'a pas pris part au scrutin doit présenter, par écrit, une excuse à la municipalité au plus tard le deuxième jour après la clôture des opérations. La municipalité transmet au préfet, dans les dix jours, la liste des défaillants et les excuses qui lui sont parvenues. Le préfet statue sans recours sur ces excuses. Il tablit la liste définitive des citoyens soumis à la contribution prévue à l'art. 113 et l'adresse au receveur pour perception. Un arrêté du Conseil d'Etat fixe les détails d'exécution. Pour chaque votation fédérale, cet article est inséré dans l'arrêté cantonal.

Vote obligatoire. Contribution.

Art. 113. Tout citoyen, âgé de moins de 65 ans, qui n'a pas pris part à une votation fédérale, sans excuse valable, est tenu de verser une contribution de deux francs. Ne sont considérés comme excuses valables que les cas de force majeure tels que l'absence nécessaire, le grand éloignement et la maladie.

English Translation

Compulsory voting

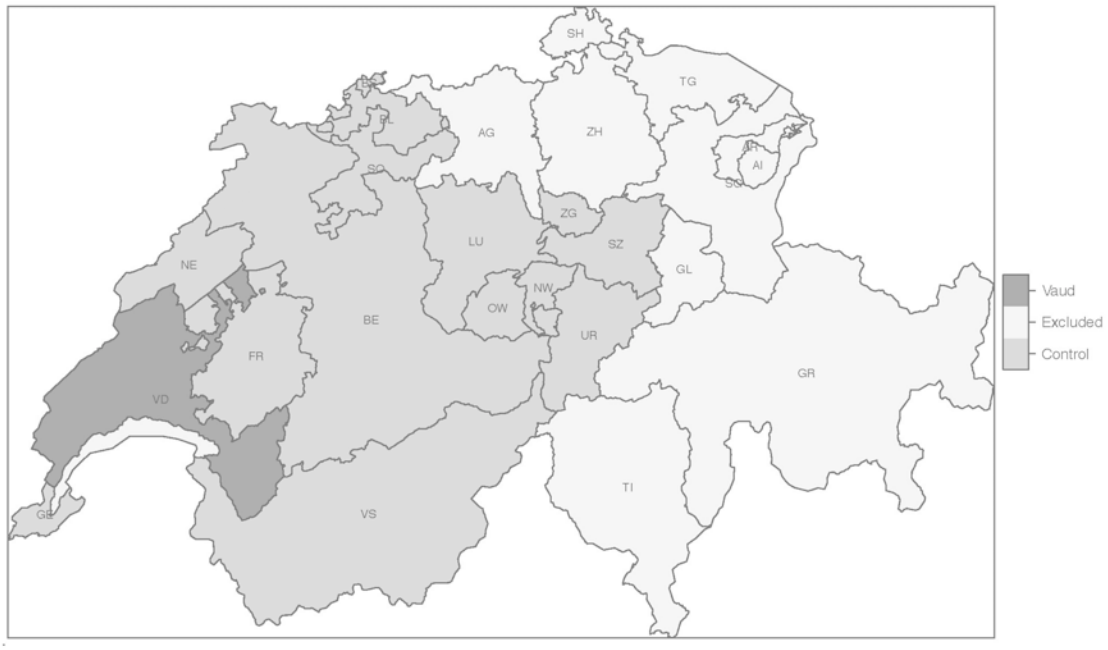
Art. 49. Concerning the federal constitution or legislation, the exercise of the suffrage is compulsory for any citizen under 65 years of age registered as a voter. The citizen who did not take part in the ballot has to excuse himself in writing to the municipality no later than the second day after the closing of the polls. The municipality sends to the prefect the list of defaulters and the excuses they submitted. The prefect decides with no recourse on these excuses. He compiles the definitive list of citizens subject to the fee according to art. 133 and addresses it to the receiver for the collection. A decree of the cantonal council records the details of the execution. For every federal vote, this article is inserted in the cantonal decree.

Compulsory voting. Fee.

Art. 113. Any citizen under 65 years of age who did not participate in a federal vote without any valid excuse is required to pay a fee of two francs. Only cases of forced absence due to Force majeure, a long distance or disease, are considered as valid excuses.

Appendix Figures

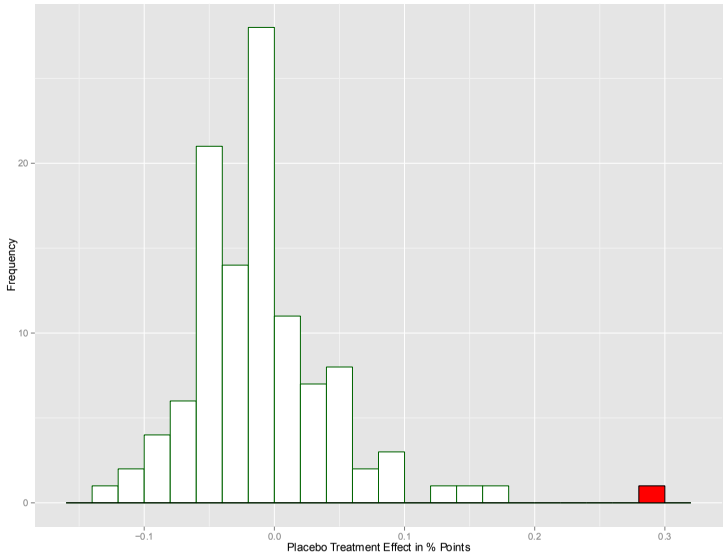
Figure 2: Switzerland in Early 1900: Treated, Control, and Excluded Cantons



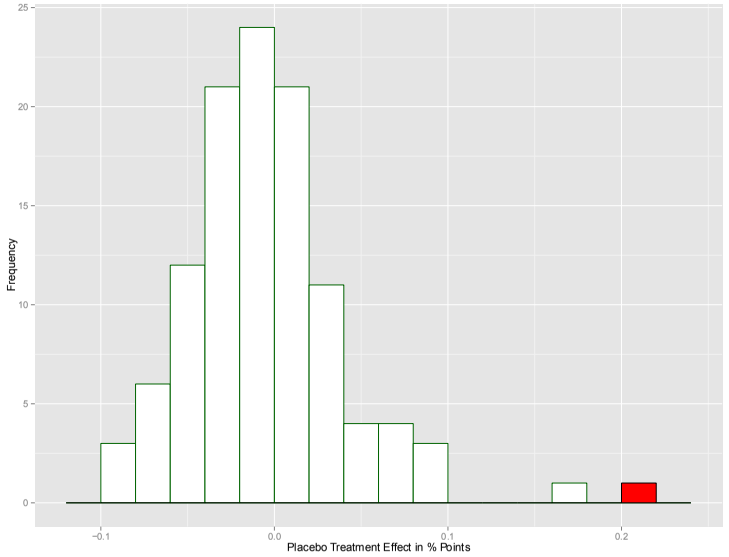
Note: The treated districts in the canton Vaud are shaded black, control districts are shaded dark gray, excluded districts are shaded light gray. The electoral districts (19) in Vaud are: Aigle, Aubonne, Avenches, Cossonay, Echallens, Grandson, Lausanne, Lavaux, Morges, Moudon, Nyon, Orbe, Oron, Payerne, Pays-d'Enhaut, Rolle, La Valle, Vevey, Yverdon. Control cantons are: Berne, Lucerne, Schwyz, Obwalden, Nidwalden, Zug, Freiburg, Solothurn, Basel-Landschaft, Valais, Neuenburg.

Figure 3: Permutation Tests

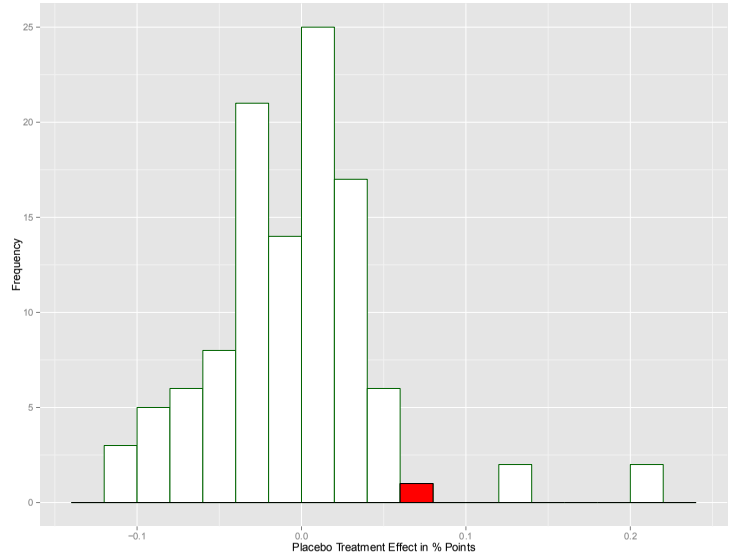
(a) Turnout ($p = 0.01$)



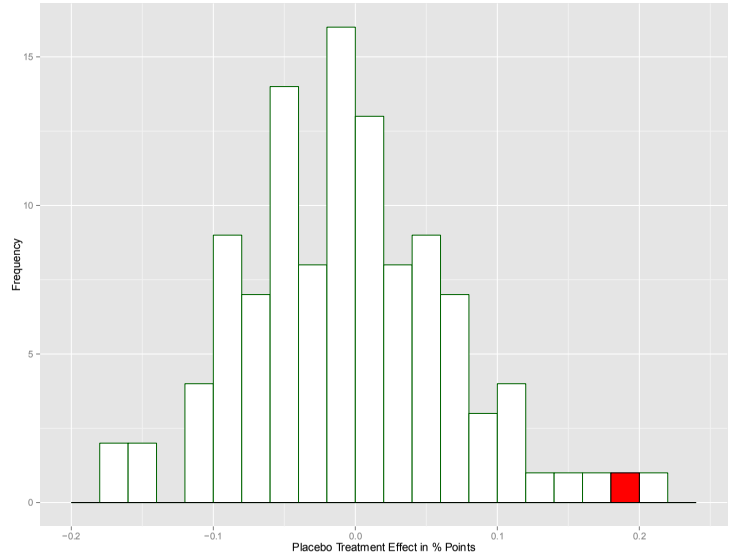
(b) Support Left ($p = 0.01$)



(c) Support Right ($p = 0.15$)



(d) Relative Support Left ($p = 0.02$)



Note: The figure shows the distribution of placebo treatment effects (in % points). The estimated treatment effect for Vaud is shaded black.