Does Forced Voting Result in Political Polarization?

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Abstract

This paper estimates effects of exposure to compulsory voting on individuals' political preferences, through a regression discontinuity framework. These results are important to understand effects of a voting system transition. The identification comes from Brazil's dual voting system: voluntary and compulsory. Using self-collected data, we find that compulsory voting legislation has sizable effects on individuals' political preferences, making them more likely to identify with a political party, to become extreme oriented and to move to the left.

1   Introduction

This article provides new estimates of the causal voting participation effects on individuals' degree of political polarization and political preferences by investigating the impacts of compulsory voting. For identification, we exploit Brazil's dual voting

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system. Individuals between 16 and 18 years old are entitled to vote, while those older than 18 are legally required to vote.[1]

The data come from a self-collected survey of young adults exposed to either system conducted just after the 2010 presidential election in Brazil. In this paper, we quantify the reduced form of the voting effect by adopting a sharp regression discontinuity (RD) framework and looking at differences around the age of 18. Our estimates show how political preferences among the population change in the transition from a voluntary to a compulsory voting system. They provide inputs to the open debate among academics and society regarding the consequences of a forced democracy (Krasa and Polborn, 2009; Krishna and Morgan, 2011), in place in 31 countries.

Our results are also relevant for other reasons. They allow us to contrast differences between eligibility and compulsory in explaining voting effects. The causal relationship between voting turnout and political preferences has been documented, but only in the context of voting eligibility.[2]

Mullainathan and Washington (2009) find that eligible-to-vote individuals (20-21 year olds) who are affiliated with the same party as the President evaluate him as two times better than non-eligible individuals (18-19 year olds) with the same party affiliation two years after the election. Focusing on a field experiment, Gerber, Huber and Washington (2010) find that unaffiliated registered voters strengthened their party identity after receiving information necessary to vote in a US primary election. Using an RD framework and exploring voting-age restrictions in the US, Meredith (2009) finds that voting eligibility increases future chances of individuals' party registration in California.

These studies illustrate only part of the voting effects. It is plausible that the

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[1]Stronger sanctions are applied to those who fail to vote in three consecutive elections. They are not allowed to issue or renew their passports and national identity cards and also become ineligible for public education, public jobs, cash transfer programs and credit from financial institutions maintained by the government.

[2]Despite that, several studies make cross-country comparisons and document correlations in citizens' behavior under different voting systems.

opportunity to vote affects only those who are willing to participate in elections. The estimated voting effects reported in this paper are more compelling and unanticipated as they are based on exposure to a compulsory voting system, affecting those who choose to abstain in (voluntary) elections.

In comparing our results with Meredith (2009), we find that compulsory voting has stronger immediate effects in changing population preferences than voting eligibility. Meredith (2009) finds no effect of voting eligibility in the 2002 election in determining 2002 partisan affiliation. We find that on being forced to vote in 2010, individuals become between 2-4 percentage points (p.p) more likely to self-declare extreme orientation and 5-8 p.p more likely to exert a preference for a political party (PSDB), in the 2010 election.

Next, we test whether there are "directional effects" as a result of a change of preference among the population. In this sense, our results contribute to a large body of literature focused on predicting election outcomes under full turnout, arguably the most important consequence of the compulsory voting legislation. The literature that predicts US election results under high-turnout rates has mixed results. While early studies conclude that changes in turnout would not cause significant changes in election outcomes (Citrin et al. 2003; Brunell and DiNardo 2004; Highton and Wolfinger 2001),[3] others predict important changes (Martinez and Gill 2005; Gomez, Hansford and Krause 2007; Hansford and Gomez 2010).

Gomez, Hansford and Krause (2007) and Hansford and Gomez (2010) explore weather conditions on Election Day to establish a causal relationship between voting participation and candidate choice. They find that bad weather leads to less voting

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[3]Citrin et al. (2003) and Brunell and DiNardo (2004) predict ballot choices of non-voters based on choice of voters with similar demographics, and then forecast election results under full participation. Their modest findings about turnout effects might be driven by their counterfactual. Non-voters differ from voters not only on demographics, but also on their ideological preferences (Martinez and Gill 2005) and possibly in other unobservable characteristics. As pointed out by Brunell and DiNardo (2004) "This is the most significant limitation of this framework or any other framework that is unable to utilize credibly exogenous variation in voter participation."

participation and helps republicans to gain votes. In Hansford and Gomez (2010), they use an IV approach, explaining US presidential candidates' vote share with county turnout, that is instrumented by Election Day rainfall. They predict that a 4% change in turnout leads to a change in Democrats' vote share at the national level of just less than one percentage point.

A problem in extrapolating these results, to understand the impacts of the compulsory voting legislation, is that none of the literature consider a potential change in preferences due to forced voting. The data used in this paper is ideal to address this issue. We find that when passing from a voluntary to a compulsory voting system, individuals become more extremely left-wing oriented and become more likely to align to a specific party (PSDB). These results support the findings in Hansford and Gomez (2010). According to our results, the adoption of compulsory voting legislation would lead to changes in election results, favoring left-wing parties.

2   Data and Method

The data come from a self-collected survey of 5,559 students in 109 classrooms in eight schools in the city of Sao Paulo (Brazil). Participants are senior high school students, college freshmen or students in the transition between high school and college. Details related to the data collection and sample characteristics are explained in Leon and Rizzi (forthcoming).

The survey was conducted few days (October 4-7) after the 2010 Brazilian presidential election (October, 3, 2010). The timing of the data collection is appropriate, as people are likely to think about politics and evaluate their own political views near an election. The compulsory legislation does affect citizens. Using these data and an RD approach, as reported in Leon and Rizzi, we find that exposure to the compulsory voting system resulted in a large increase in individuals' voting participation, between 34-40%.

In this article, we ask whether changes in the degree of political polarization and

preferences are also observed focusing on the following outcomes. First, we created an indicator for those who answered positively to the survey question: "Do you have a preference for a political party?" Second, we recorded whether a respondent self-declared as being center-oriented (as opposed to moderately or extreme right- or left-wing). Then, we created a polarization index to account for different degrees of polarization. This variable assumes a value of 0 if the respondent declared to be center-oriented, 1 if the respondent declared as moderate and 2 if the respondent declared to be extreme. To understand whether "directional" changes in ideological positioning exist, we constructed a five-point right-wing index coded from -2 (if the respondent declared to be extreme left-wing), -1 (moderate left-wing), 0 (center-oriented), +1 (moderate right-wing) and +2 (right-wing). We also created indicators for whether an individual declared to be extreme-oriented to the left and to the right, as well as the specific party of preference. We focused on the preference for three political parties, PSDB, PT and PV, because 89.3% of participants with a party preference were aligned with one of them. We focused on a sample of 3,027 students who were between 16.75 and 19.25 years old by the 2010 Election Day (sufficiently close to the cutoff). Table 1 describes the outcomes by voting participation status.

$$Table 1$$

We find that voters are more polarized (less likely to be center-oriented and more likely to prefer a political party) than non-voters. They are also more likely to assert a preference for the PSDB and PT parties. These differences can cause and/or be caused by voting. To overcome this endogeneity issue and estimate the causal effects of turnout participation, we use an RD framework comparing individuals whose ages are around the 18-year-old threshold. Following guidelines from Lee and Lemieux (2010), we estimate the following equation:

$$y_i = \alpha + \beta X_i + M(age) + \delta(age \geqq 18) + \theta + u_i \tag{1}$$

where, y_i represents the outcome of individual i; X_i contains a number of covariates (indicators for gender, race and mother education, and for whether the individual has voted before), θ are school fixed effects, $1\delta(age \geq 18)$ is a dummy indicating whether the student had turned 18 by the 2010 election, $M(age)$ is a polynomial in age (measured by the distance in days to the 18th birthday) that is flexible on each side of the cutoff, and u_i is the error term.

3   Results

Table 2 presents OLS estimates for coefficient δ. Each entry in columns 2-4 represents results from a separate regression. These are our estimates for the effect of exposure to the compulsory voting system. Following Lee and Lemieux (2010), we present results for several age polynomials and for the optimal age polynomial according to the Akaike criteria.

In the first and second rows, we report results using as dependent variable an indicator for whether the individual self-declared to be center-oriented and for the polarization index, respectively. The estimates do not reveal any discontinuity around the 18-year threshold. The estimated coefficients for any of the tested specifications are not statistically significant (p-value> 25%). In the third row, we report results for preference for a political party and find some evidence of an effect. The coefficient is statistically significant at the 5% level, but only for the specification controlling for a quadratic age polynomial. In this case, the coefficient indicates an increase in this likelihood of 9.83 percentage points (or 34%) at the 18-year threshold.

In rows (4)-(9), we look for whether exposure to compulsory voting leads to directional effects on ideological positioning. We find evidence that it does, as shown in Table 2, rows 4, 5 and 7. Estimates in row 5 indicate that individuals become significantly more likely to self-declare to be extreme left-wing (between 2 and 4 percentage points). Row 7 shows that compulsory voting leads to an increase in the likelihood of asserting a preference for the PSDB party (by 5 to 8.6 percentage points). In results

not shown in this paper, we find that these directional results (in rows 4, 5 and 7) are also robust to local linear regressions using different bandwidths.

In summary, findings in Table 2 indicate changes in the population's political positioning due to exposure to compulsory voting. The findings are supported by graphical analysis, presented in the supplementary material. The figures clearly indicate discontinuities in political preferences when individuals move from voluntary to compulsory voting.

$$Table 2$$

4   Conclusion

In this paper, we document short-term effects of compulsory voting in determining individuals' political positioning. Compulsory voting increases the likelihood of people becoming more extreme and left-wing oriented. To our knowledge, these results are new, and relevant understand election results under full democracy. We explore a quasi-experimental design that exogenously assigns people to different voting systems: voluntary and compulsory. Our results are consistent with the impacts of voting eligibility reported in Gerber, Huber and Washington (2010) and Mullainathan and Washington (2009).

It is important to put our estimated effects in perspective. Although present, they are somewhat modest in terms of changing the ideological composition among the population. For instance, most participants younger than 18 years old (under voluntary voting) in our data are center-oriented (64.4%) and this fraction does not change among the slightly older. These timid effects might be only a short-term facet of the consequences of compulsory voting. Hence, investigating long-term and permanent effects of forced voting is important and awaits future research.

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Table 1 - Descriptives by Voting Status in the 2010 Election

Outcomes:	All (1)	N	Voter (2)	Non-Voter (3)	(2)-(3)	
Center-oriented	0.5362 [0.498]	2,952	0.4924 [0.500]	0.6532 [0.476]	-0.1608	**
Polarization Index	0.5105 [0.586]	2,952	0.5568 [0.588]	0.3846 [0.559]	0.1722	**
Prefers a Political Party	0.3369 [0.473]	3,027	0.3827 [0.486]	0.2184 [0.413]	0.1643	**
Ideology Index	0.0118 [0.777]	2,952	0.0183 [0.8096]	-0.0012 [0.678]	0.0195	
Extreme Left-wing	0.0294 [0.169]	2,952	0.0314 [0.175]	0.0219 [0.146]	0.0095	
Extreme right-right	0.0172 [0.130]	2,952	0.0178 [0.1324]	0.0158 [0.125]	0.002	
Prefers PSDB party	0.185 [0.388]	3,027	0.2146 [0.411]	0.1098 [0.313]	0.1048	**
Prefers PT party	0.0436 [0.204]	3,027	0.048 [0.2138]	0.0327 [0.178]	0.0153	*
Prefers PV party	0.0664 [0.249]	3,027	0.0706 [0.256]	0.0561 [0.230]	0.0145	

Notes: Standard deviations are in brackets. *Significant at the 10 percent level, **Significant at the 5 percent level.

## Table 2 - Effects of the Compulsory Voting Legislation on Political orientation- RD Results

		Mean for younger than 18 (under voluntary voting) (1)	Coefficient on Turning 18 (Required to Vote) Age Polynomial order			N
			Optimal (2)	Quadratic (3)	Cubic (4)	
	Polarization outcomes					
[1]	Center-oriented	0.6453	0.0089 [0.0359] {1}	-0.0242 [0.0497]	-0.0333 [0.0646]	2,952
[2]	Polarization Index	0.3914	0.0217 [0.0416] {1}	0.0664 [0.0575]	0.0791 [0.0739]	2,952
[3]	Prefers a Political Party	0.289	0.0502 [0.0342] {1}	0.0983** [0.0481]	0.0697 [0.0637]	3,027
	Directional Preference outcomes:					
[4]	Ideology Index	0.0031	-0.0782 [0.0545] {1}	-0.0926 [0.0756]	-0.2106** [0.0968]	2,952
[5]	Extreme Left-wing	0.0281	0.0216** [0.0107] {1}	0.0346* [0.0141]	0.0435** [0.0168]	2,952
[6]	Extreme right-right	0.0167	-0.0315 [0.0197] {4}	0.0076 [0.0138]	0.022 [0.0174]	2,952
[7]	Prefers PSDB party	0.133	0.0531** [0.0272] {1}	0.0860** [0.0379]	0.0488 [0.0504]	3,027
[8]	Prefers PT party	0.045	0.0366 [0.0248] {3}	0.0288 [0.0189]	0.0366 [0.0248]	3,027
[9]	Prefers PV party	0.081	-0.0047 [0.0196] {1}	-0.0159 [0.0281]	-0.0234 [0.0383]	3,027

Notes: Robust standard errors are in brackets and optimal age polynomial order based on an Akaike criterion is in parenthesis. All regressions include school-fixed effects and an indicator for whether an individual has voted before. Demographic controls include dummies for gender, race and mothers' education.

*Significant at the 10 percent level, **Significant at the 5 percent level.

Figures A1

Preference for PSBD

Preference for PT Party

Preference for PV Party
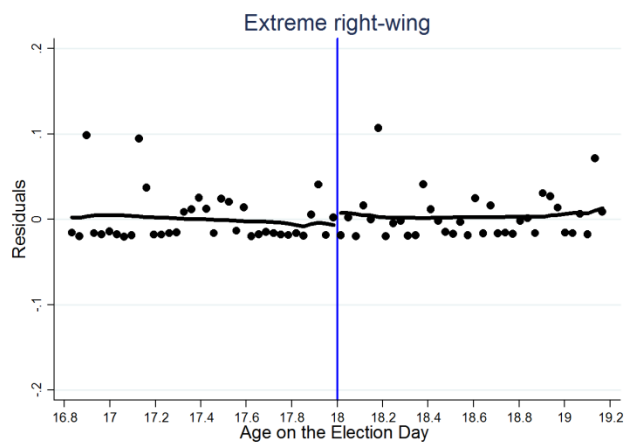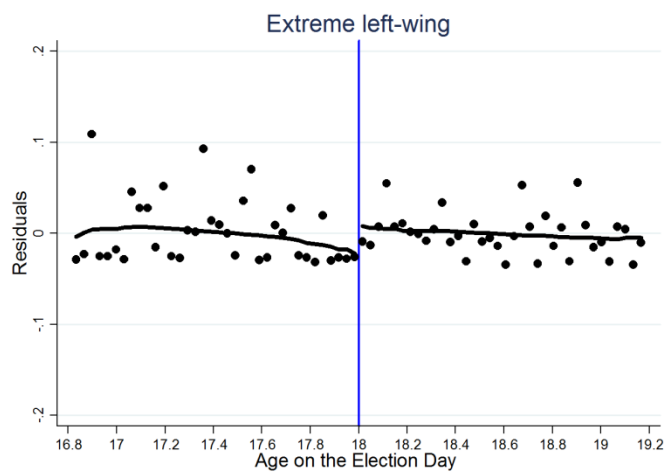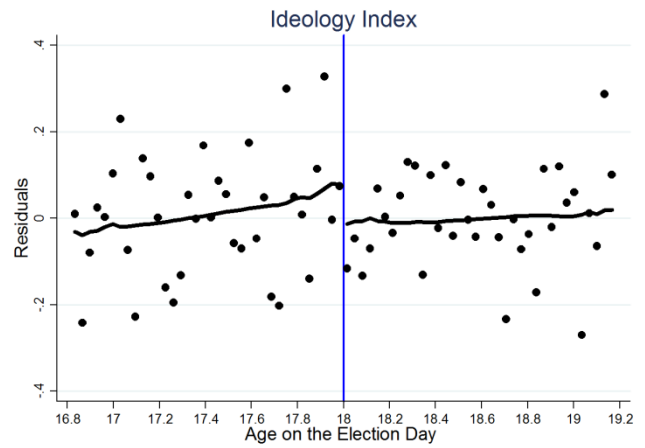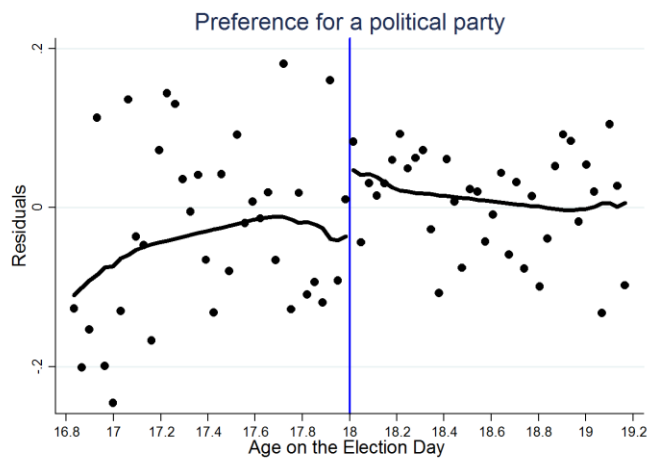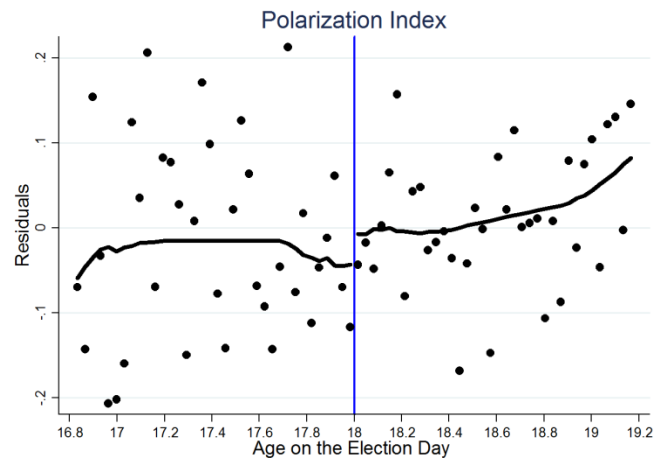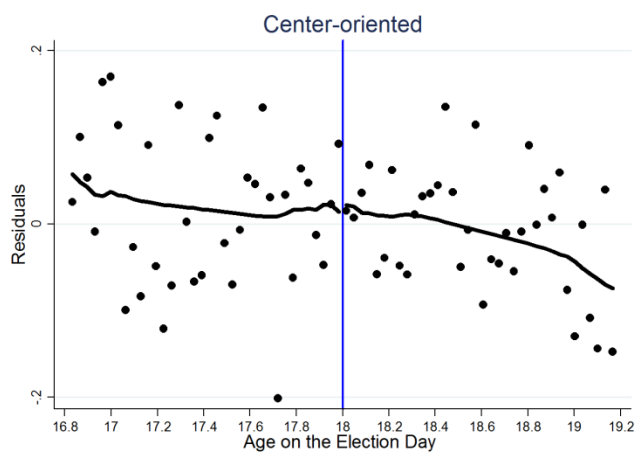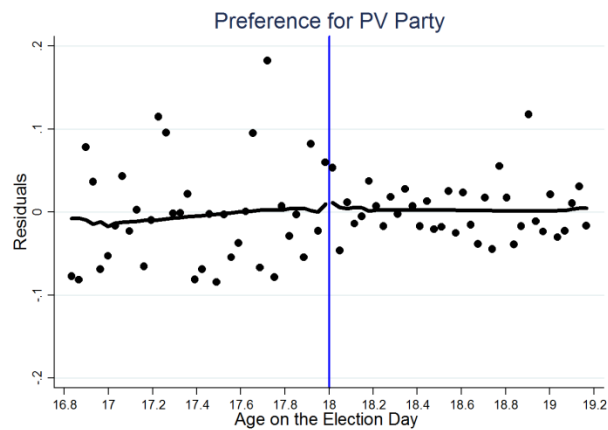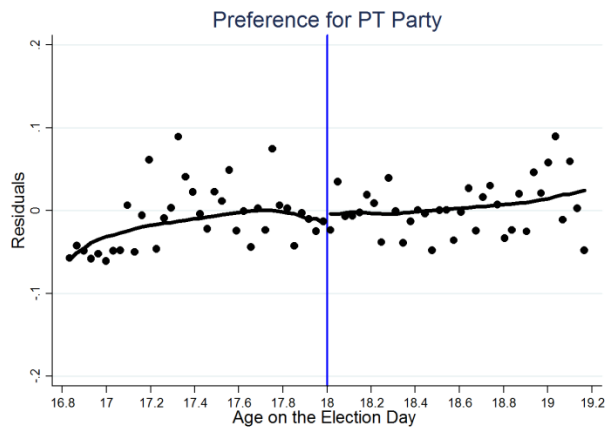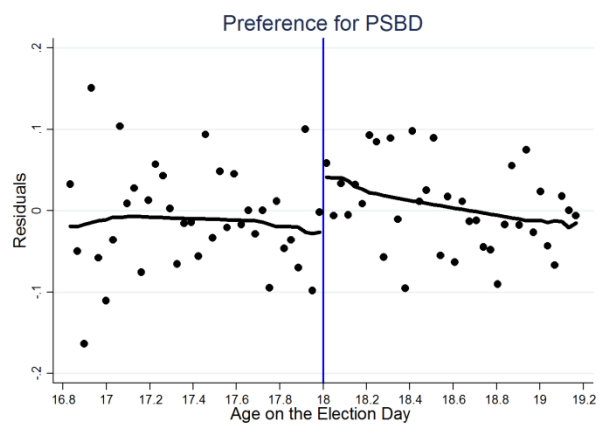
Note: Circles indicate average residual outcome values in a 12-day interval. Lines are predicted from local linear regressions using a rectangular kernel and a bandwidth of nine months. Residuals are obtained by regressing outcome on school-fixed effect, an indicator for whether the participant voted before and demographic characteristics (mother's education, gender and race indicators).