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## Paying Postage: Estimating the Elasticity of Voter Turnout

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## Paying Postage: Estimating the Elasticity of Voter Turnout

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# Paying Postage: Estimating the Elasticity of Voter Turnout

## Abstract

We aim to estimate the elasticity of voter turnout. We analyze how voters react to a change in voting costs. Some municipalities in the canton of Berne reduced voting costs by paying the postage of the return envelope when voters opt for postal voting. We find that paying the postage is associated with a statistically significant 1.8 percentage point increase in voter turnout. This increase in turnout negatively affects the alignment of voters with leftist party positions.

JEL-Codes: D720.

Keywords: voting cost, postal voting, voter turnout.

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## 1. Introduction

Does a change in the cost of voting affect voter turnout? The Downsian model of electoral participation (Downs, 1957) predicts a higher turnout when voting costs decrease. We analyze the impact of paying the postage on turnout in postal voting in Switzerland. In the canton of Berne, some municipalities distribute prepaid return envelopes for voters who use the option of postal voting, while some municipalities do not pay the postage. We use this simple and low-cost intervention to analyze the impact of paying postage on voter turnout. Estimating this effect provides a notion of the cost elasticity of voting. Using a difference-in-differences approach, we find that the introduction of paid postage increases turnout by about 1.8 percentage points. Furthermore, we study what we refer to as “voter-party alignment”. We analyze whether some parties systematically benefit or lose from a change in turnout. Therefore, we compare the municipal voting results with the stated policy positions of the major parties in national ballots. We find that an increase in turnout negatively affects the alignment of voters with leftist party positions.

There exists a vast literature exploring how people vote and why they vote at all, given the well-known paradox of voting.<sup>1</sup> Closely related to our research question, Lüchinger, Rosinger and Stutzer (2007) find that the introduction of postal voting in Switzerland increased turnout by about 4.1 percentage points on average. Funk (2010) finds that the increase in turnout due to postal voting was modest in the aggregate and that especially small and close-knit communities even saw a negative effect on turnout. She attributes these results to a reduced incentive to vote as the social control at the polling station disappeared with the introduction of postal voting. Hodler, Lüchinger and Stutzer (2015) show that the introduction of postal voting increased turnout by about 5 percentage points and altered the composition of the actual voting population. Postal voting reduced the average years of education as well as the average knowledge of the ballot proposition in the voting population. Bechtel, Hangartner and Schmid (2015) analyze the impact of compulsory voting on voter turnout and the composition of the voting population. They show that compulsory voting dramatically increases turnout, especially among low-income earners, resulting in an enhanced support for leftist policies.

The changes of voting costs in previous studies are not always well specified in terms of actual costs to voters. We extend this literature by analyzing a case where the cost difference

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<sup>1</sup> For a survey of the theoretical literature, see e.g. Aldrich (1997), and for a recent overview of the empirical literature, see Geys (2006). For Switzerland, Kirchgässner and Schulz (2005) provide a comprehensive overview.

is well specified, namely the price of a stamp, which today amounts to CHF 0.85 (about 0.90 USD).

## **2. The setup**

Today, all citizens in Switzerland have the possibility of postal voting. Citizens receive the voting material with a return envelope to send back the ballot to the municipality. The cantons have adopted different rules with respect to whether or not they pay the postage. In 2003, only the canton of Geneva provided stamped return envelopes, while the cantons of Thurgovia and Grisons require municipalities to take over the cost of posting (Federal Chancellery, 2003 and 2010). The canton of Berne introduced postal voting on July 1<sup>st</sup> 1991. From the outset, the canton left it to the municipalities to decide whether or not to pay the postage. Since then, several municipalities introduced paid postage and some abandoned it again.

We take advantage of the municipal differences with respect to paying postage. Within a specific canton, voters in different municipalities face the same institutional constraints (political rights in Switzerland are regulated at the cantonal or the federal level) and often vote on exactly the same propositions. This makes it possible to identify the effect of paying postage on voter turnout and voter-party alignment within the same institutional framework.

## **3. Data and empirical strategy**

Because there is no official information on the municipal practices with respect to whether or not postage is paid, we collect the information directly from the 325 municipalities.<sup>2</sup> The Federal Statistical Office provides actual data on voter turnout and ballot results for all the municipalities of the canton of Berne for all the national referendums since 1989. Turnout is defined as the ratio of the number of casted votes and the number of eligible voters in a municipality. As there are usually multiple ballots on the same day, the turnout of these ballots is very similar. The municipalities of the canton of Berne only report one measure of turnout for all ballots of the same day. For that reason, the specifications estimating the effect of paying the postage on turnout count one observation per ballot day. The model specifications estimating the impact of paying postage on the voter-party alignment use the information of all ballots per ballot day.

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<sup>2</sup> Some municipalities have merged over the period analyzed. Because it was impossible to track the exact information on the potential introduction of postal voting and given that it remains unclear how to properly aggregate the various outcomes and control variables, we had to drop these observations from the dataset. For more details on the data collection process and local specificities see Schneider (2015).

Information on party positions is extracted from the data provided in *Année Politique Suisse* (2008, 2012) and the Federal Statistical Office. Data on the population, age structure, population density and the share of foreigners are collected from the Federal Statistical Office, municipal income data come from the Federal Tax Administration. Summary statistics are presented in Table 1.

[Table 1 about here]

We are interested in identifying the average causal effect of paying postage on voter turnout (and in a second step on voter-party alignment) in municipalities that have introduced paid postage (treatment). We estimate a two-way fixed effects model, which is the panel data application of a difference-in-differences model. We estimate variants of the following basic model:

$$y_{it} = \alpha Postage_{it} + X_{it}\beta + \tau_t + \mu_i + \varepsilon_{it}$$

where  $y$  is the turnout of a municipality  $i$  on ballot day  $t$ . *Postage* is a dummy variable indicating that, if  $D = 1$ , postage is paid.  $X$  is a vector of relevant controls.  $\tau$  is a ballot day fixed effect common to all municipalities on vote day  $t$ ,  $\mu$  is a municipality fixed effect and  $\varepsilon$  the error term. Standard errors are clustered at the municipal level.

Determining causality is – as usual – not trivial. Unfortunately, we were unable to find valid instruments for the decision to pay postage. However, we know from our communications with the relevant municipalities that the size of the municipalities and the proximity to letter boxes were among the stated reasons for or against the introduction. Therefore, we include the population size and the population density (which might affect the average distance to the letter boxes) in our regressions. Moreover, we control for municipal average income, the ratio of median to mean income as a measure of inequality, the share of foreigners (who cannot participate in the voting process) and the demographic structure.

If we assume that the treatment has an exogenous effect on voter turnout, we can estimate the impact of the increase in turnout on the voter-party alignment. We apply a two-way fixed effects 2SLS model where postage is used as an instrument for turnout. Obviously, this approach is only valid if we assume that the treatment has no direct effect (other than through turnout) on voter-party alignment. We think that this is the case. We have no indication that some parties tried to introduce paying the postage in order to increase the turnout probability of some of their voters. Besides, it seems unlikely that paying the postage changes

fundamental political views, which would constitute a direct channel. Therefore, the most likely interpretation is that paying the postage affects the voter-party alignment through its effect on the turnout probability of some voters (due to the reduction of voting costs), hence increasing turnout and (potentially) changing voter composition. The model we estimate is the following:

$$\begin{aligned} \text{First stage:} \quad & y_{it} = \alpha_1 \text{Postage}_{it} + X_{it}\beta + \tau_t + \mu_i + \varepsilon_{it} \\ \text{Second stage:} \quad & z_{it} = \alpha_2 \hat{y}_{it} + X_{it}\beta + \tau_t + \mu_i + \varepsilon_{it} \end{aligned}$$

where  $y$  is again the turnout of a municipality  $i$  for ballot  $t$ . *Postage* is a dummy variable indicating that, if  $D = 1$ , postage is paid.  $X$  is a vector of controls.  $z$  is the voter-party alignment and  $\hat{y}$  is the instrumented turnout (from the first stage regression) of municipality  $i$  for ballot  $t$ .  $\tau$  is a ballot fixed effect,  $\mu$  is a municipality fixed effect.

#### 4. Empirical results

Column 1 of Table 1 presents a basic panel regression of voter turnout on the introduction of paying postage including municipal and ballot day fixed effect, but excluding other control variables. We find that the introduction significantly increased turnout by 1.86 percentage points. Including the aforementioned control variables (column 2) reduces the coefficient somewhat to 1.83. Given an average turnout of 42.4 percent, this translates into an increase of about 4 percent more voters participating in the ballot. This effect is sizable and compares to about half the impact of the introduction of postal voting estimated by Lüchinger, Rosinger and Stutzer (2007) and about a third of the impact estimated by Hodler, Lüchinger and Stutzer (2015).

[Table 1 about here]

Columns 3 to 9 present the results of a series of fixed effects 2SLS regressions that estimate the impact of turnout (instrumented by the treatment of paying postage) on the voter-party alignment of the main Swiss parties. From right to left these are: SVP (conservatives), FDP (liberal democrats), CVP (Christian democrats), SPS (social democrats) and GPS (green party). We also construct a variable for the alignment with centrist parties (FDP and CVP) and leftist parties (SPS and GPS) if both respective parties took an explicit position. The differences in the number of observations stem from the fact that not all parties take a position on all ballots.

We find a significant negative effect of the increase in turnout due to paying the postage on the voter-party alignment of the social democratic (SPS) and the green party (GPS). The size of the effect is such that an increase in voter turnout by one percentage point decreases support by 0.51 for the position supported by the social democrats and 0.49 for the position supported by the green party. This might suggest that the additional voters, mobilized by the paid postage, tend to have more conservative positions than the leftist parties. All other estimates are not significantly different from zero.

Other noteworthy results are that municipal income is positively correlated with general support for centrist parties (FDP, CVP) and the green party. The support for the political right (SVP) seems to be stronger in municipalities with lower levels of incomes and higher inequality. Demographic conditions seem to differentially affect the support for positions at the left and the right of the spectrum.

## **5. Conclusions**

We aim to estimate the elasticity of voter turnout. We analyze how voters react to a change in voting costs. We study a setup where some municipalities in the canton of Berne reduced voting costs by paying the postage for the return envelope in the case of postal voting. We find that paying the postage is associated with a statistically significant 1.8 percentage points increase in voter turnout. This increase in turnout negatively affects the alignment of voters with leftist party positions, such as the positions supported by social democrats (SPS) and the green party (GPS).



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**Table 1: Summary statistics**

Variable	Mean	Std. dev.	Min	Max
Turnout	41.94	11.32	7.02	100
Postage	0.03	0.16	0	1
Aligned SVP	60.15	18.10	0	100
Aligned FDP	59.73	18.35	0	100
Aligned CVP	60.24	18.11	0	100
Aligned SPS	48.92	20.61	0	100
Aligned GPS	48.17	20.52	0	100
Aligned center	60.91	17.89	0	100
Aligned left	48.4	20.54	0	100
Mean income	50.44	10.80	25.39	138.88
Median income	42.75	7.62	23.55	77.58
Median/mean income	0.85	0.05	0.33	1.06
Population	2.63	8.52	0.03	138.04
Population density	2.65	4.70	0.01	49.32
% Foreigners	6.77	4.98	0	30.55
% young	29.88	3.72	14.63	54.55
% aged	17.05	2.93	2.74	34.09

**Table 2: Empirical results**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable	Turnout	Turnout	Aligned SVP	Aligned FDP	Aligned CVP	Aligned SPS	Aligned GPS	Aligned centrist	Aligned leftist
First stage									
Postage	1.859*** (0.412)	1.828*** (0.471)	1.921*** (0.436)	1.921*** (0.442)	1.909*** (0.442)	1.841*** (0.420)	1.853*** (0.455)	1.934*** (0.449)	1.789*** (0.433)
Second stage									
IV: Turnout			0.030 (0.654)	-0.009 (0.320)	-0.073 (0.294)	-0.506* (0.282)	-0.492** (0.242)	0.019 (0.339)	-0.464* (0.278)
Mean income (in 1000)		0.112*** (0.029)	-0.179** (0.086)	0.073** (0.037)	0.069** (0.035)	0.060 (0.044)	0.116** (0.048)	0.085** (0.038)	0.069 (0.045)
Median/mean income		1.842 (2.958)	-7.54*** (2.376)	3.247 (2.140)	2.668 (2.108)	0.506 (2.594)	5.112* (2.966)	4.093* (2.278)	1.953 (2.740)
Population (in 1000)		-0.407** (0.164)	0.922 (0.594)	-0.087 (0.171)	-0.218 (0.180)	-0.450** (0.218)	-0.54*** (0.165)	-0.194 (0.221)	-0.416* (0.229)
Population density		0.642*** (0.223)	-1.435 (0.886)	0.539* (0.296)	0.360 (0.279)	-1.076** (0.525)	-0.847** (0.396)	0.668* (0.356)	-1.230** (0.521)
% foreigners		0.054 (0.059)	-0.169** (0.072)	0.020 (0.046)	-0.016 (0.041)	-0.119* (0.071)	-0.092 (0.076)	0.025 (0.048)	-0.112 (0.075)
% young		0.250*** (0.082)	-0.383** (0.188)	-0.081 (0.100)	0.012 (0.077)	0.441*** (0.114)	0.571*** (0.128)	-0.036 (0.101)	0.474*** (0.119)
% aged		0.210** (0.085)	-0.263* (0.154)	0.042 (0.074)	0.075 (0.065)	0.128 (0.097)	0.224** (0.110)	0.081 (0.080)	0.144 (0.098)
Municipal FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Ballot (day) FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	24,375	24,375	73,775	73,125	73,450	69,875	70,200	65,975	63,700
R <sup>2</sup>	0.824	0.826	0.758	0.762	0.756	0.825	0.810	0.755	0.826
K–P statistic†			19.41	18.88	18.65	19.18	16.57	18.55	17.08
No. municipalities	325	325	325	325	325	325	325	325	325

Notes: Standard errors are adjusted to clustering at the municipality level and are reported in parentheses.

Instrument: Postage. Significance level: \* 0.05 < p < 0.1, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01. † Kleibergen-Paap Wald rk F-statistic.