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Are Voters Better Informed When They Have a Larger Say in Politics?

Evidence for the European Union and Switzerland

by

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Abstract: Public choice theory takes citizens as rationally ignorant about political issues, because the costs of being informed greatly exceed the utility individuals derive from it. The costs of information (supply side) as well as the utility of information (demand side), however, can vary substantially depending on the political system under which citizens live. Using survey data from the European Union and Switzerland, we present empirical evidence that citizens are politically better informed when they have more extended political participation rights. The results corroborate theoretical arguments and circumstantial evidence that voter information should be treated as endogenously determined by political institutions. (100 words)

Keywords: voter competence, direct democracy, information costs, rational ignorance

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1 Introduction

Democracy rests on a dilemma: On the one hand, as Downs (1957) noted, voters have low incentives to inform themselves on political issues. As an individual vote is most unlikely to change the overall outcome at the ballots, voters will not only tend to abstain from an election or a vote, but also remain 'rationally ignorant' about the alternatives to decide on. On the other hand, it is widely believed that well informed citizens are an essential prerequisite for a well functioning and stable democracy. If citizens do not have sufficient information about the policies or governments they vote for, they may be disappointed by the actual consequences of their decisions, which in turn can undermine the acceptance and legitimacy of democracy as a political system.

Public choice scholars have indicated several ways out of this dilemma. It has been argued that in reality, a variety of institutions exist that lower citizens' information costs. Perhaps most importantly, voters can use party ideologies to proxy for the 'true' consequences of their vote. But they also use other information 'shortcuts'. Citizens pay attention to the past performance of a government (for a survey on vote and popularity functions, see Nannestad and Paldam 1994); they judge the reputation of candidates (Lupia and McCubbins 1998, Popkin 1991); they evaluate voting recommendations by interest groups (Schneider 1985, Lupia 1994, Bowler and Donovan 1998, Christin et al. 2002); or they collect political information as a by-product of mass media consumption. In one way or another, all these approaches analyze how information costs are reduced *within* a given political system.

In this paper, we attempt to analyze the relationship between information and democracy from a somewhat different angle. We empirically test whether the *level of voter information itself is dependent on the political system* under which citizens live. The idea that voters' awareness of political issues should be treated as endogenously determined by political institutions has been advanced by several authors (e.g. Cronin

1989, Bohnet and Frey 1994, Frey 1994 and Kirchgässner, Feld and Savioz 1999).[1] They theoretically argue that a political system that gives citizens more political participation possibilities will change the demand for political information as well as the supply of it. As an illustrative example, the introduction of the Maastricht Treaty in various European countries is used. In the countries where citizens had the right to vote on it (e.g. Denmark), politicians had to engage much more in explaining the Treaty to the citizens than in countries where no referendum took place (e.g. Germany). For the citizens, on the other hand, the incentives to be informed were greater, as the intense discussions before the referendum transformed the fact of 'having a reasoned opinion' partly into a private good. Casual observation suggests that, as a consequence, information levels on the content of the Treaty were high among Danish citizens. This and other examples offer suggestive evidence that voters are better informed when they have a larger say in the political process; however, there is a lack of more systematic evidence in the literature. In this paper, we conduct an empirical investigation in an attempt to partly fill this gap.

We study voter information in two contexts. First, survey data from the Eurobarometer series is used to systematically investigate how referenda in several European countries affected citizens' information on the European Union (EU). The results indicate that people in countries with a referendum are in fact "objectively" better informed (according to ten questions about the EU in the 1996 Eurobarometer) as well as they feel "subjectively" better informed about the EU after a referendum (Eurobarometer 1992 – 1997). As a second empirical test, we look at voter information in Switzerland, where the extent of citizens' political participation rights differs substantially among the 26 Swiss cantons. This unique institutional variation can be used to explain differences in voter information obtained from a large survey conducted among the Swiss electorate in 1996. Again, we find that citizens living in more direct democratic jurisdictions are

[1] Advocates of direct or participatory democracy have argued for years that more 'self-governance' would increase citizens' competence and interest in communal life (e.g. Barber 1984, Mansbridge 1983 and

objectively better informed about politics. The results also indicate that political participation possibilities raise discussion intensity, which in the literature is seen as an important transmission channel that leads to higher voter information.[2]

The remainder of the paper is organized as follows. Section 2 discusses the theoretical arguments on how voter information is shaped by political institutions, especially the political participation rights of the citizens. Section 3 presents the data. The empirical analysis for the EU is provided in section 4; the one for Switzerland in section 5. Concluding remarks are offered in section 6.

2 Voter Information and Political Institutions

Political institutions influence voter information in a variety of ways. In representative democracies, the institutional structures usually favor the emergence of a small number of parties (often two). One essential role of political parties can be seen in reducing the voters' information costs (Downs 1957, 93 ff.). By having an ideological position which voters can focus on, parties serve to reduce complexity: voters can choose between a few parties and need not be well informed about the whole range of policies the parties propose to pursue. In representative democracies, a variety of other information saving mechanisms exist, as already mentioned in the introduction. Representative democracies, however, are just one form of political system in the possible range from autocracies to fully direct democracies. An essential feature of political institutions is to what degree they allow citizens to directly participate in the political process, i.e. whether citizens are just allowed to vote in elections (if at all) or whether they also have the possibility to vote on particular issues. This paper focuses on a comparison of political systems that grant citizens relatively few direct participation rights

Pateman 1970).

[2] This analysis might inform proponents of deliberative democracy (e.g. Dryzek 1990, Fishkin 1991) who seek an institutional environment for an open political discourse.

(representative democracies) with political systems that give citizens more direct participation possibilities in the form of referenda and initiatives (direct democracies).

From a theoretical point of view, voter information will be of different size and quality in more direct democracies because of changes in the supply of political information and the demand for it (see e.g. Eichenberger 1999, Frey 1994, Kirchgässner, Feld and Savioz 1999). On the supply side, the possibility for voters to decide on single issues via initiatives and referenda provides incentives for potential information suppliers like the government, political parties, and especially interest groups. If they want to win a referendum, they are forced to inform the public about the reasons why they are for or against a particular policy. Thereby, it is often not enough to emphasize an ideological position, but specific information on the issue at stake has to be provided, and the arguments and information of the opponents have to be taken up and discussed. This results in a discussion process, which frequently involves politicians and citizens, usually much more often than every four years when elections take place. The political information supplied in more direct democracies will not only be quantitatively larger, but also qualitatively different. Compared to elections, referenda are less personalized, which favors the supply of issue related information. Moreover, it restricts the possibility of politicians to hide behind an image or a reputation which in representative democracies might secure them reelection. In a referendum campaign, politicians are repeatedly forced to explain their arguments for or against a concrete policy measure and cannot focus on one or two core aspects of their party program (which are often rather unspecific, like ’improving the health care system’).

On the demand side, citizens ask for more political information mainly because they frequently are involved in the (often intense) discussions taking place before a referendum. Although being informed remains largely a public good also in more direct democracies, the discussion process nevertheless creates some substantial private incentives that increase the demand for information. In discussions, “having an opinion”

is partly transformed into a private good, for two reasons. First, individuals consider it as a value per se to have an opinion (Hirschman 1989). Second, not having a certain level of information excludes an individual from discussions, or is viewed negatively by others. This is especially the case when important political issues are to be decided and thus discussions are intense. An example is the referendum on whether Switzerland should join the European Economic Area in 1992. In the weeks preceding the vote, it was almost impossible not to get involved in the fierce discussions on the subject, and consequently, the incentives to be informed were high. Evidence shows that Swiss citizens were actually better informed about the EEA and the EU after the referendum than citizens of neighboring countries already belonging to the EU (Eurobarometer Schweiz 1991, cit. in Bohnet and Frey 1994: 345).

The theoretical arguments concerning the supply and demand of political information suggest that voters will be politically better aware of political issues when they have larger direct participation possibilities in the political process. This is, however, not to say that voters are always perfectly informed. One of the core arguments against direct democracy has always been that voters are not informed *well enough* to make decisions on single issues. The argument is still debated. There exists a number of well founded skepticisms, but also a variety of good arguments that even relatively low levels of voter information are sufficient for direct democratic decisions (see e.g. Lupia 2001 for a survey of the arguments). In any case, this paper is not concerned about the *absolute* level of voter competence and whether it is 'high enough'. Rather, a comparative institutional view is applied. In the following empirical section, we attempt to test the hypothesis that voters are *relatively* better informed when they live in more direct democracies.

3 Data

The empirical analysis is conducted in two parts. First, voter information in EU countries is studied, and second, political information levels in Switzerland are investigated. We discuss the data sets used in turn.

3.1. European Union

Data on voter information in the EU countries are obtained from the regularly conducted Eurobarometer series. The database allows assessing voters' information about political issues in two different ways. First, there is cross-section evidence on voters' "objective" information about the EU. In the so-called "mega-survey" conducted in 1996 (Reif and Marlier 1996), about 65'000 persons living in 15 EU-countries were asked questions on their knowledge about the EU. The ten questions asked are: "Do you happen to know… (i) the current number of states in the EU, (ii) the name of the president of the European Commission, (iii) the number of commissioners of your country, (iv) the name of one commissioner, (v) the recently chosen name for the European currency, (vi) the country which holds the Presidency of the EU since January 1 and until end of June 1996, (vii) the current value of the ECU in your national currency, (viii) the city in which most of the EU institutions are located, (ix) one of the two colors of the European flag, and (x) the year when notes and coins in the European currency will be introduced?"[3]

Are these questions well suited to assess voter information? Clearly, the answers do not directly measure the political information citizens have, for example, on a specific referendum issue like the Maastricht Treaty. One might even argue that this kind of information is simply not important, because it is concerned with factual knowledge that might not help to make more competent direct democratic decisions. We agree that the

[3] The correct answers were: (i) 15, (ii) Jacques Santer, (iii) two in the case of D,E,F,IT,UK and one in the case of all other countries, (iv) at least one correct name of a commissioner, (v) Euro, (vi) Italy, (vii) between 1 and 2, (viii) Brussels or Luxembourg, (ix) yellow/gold or blue, and (x) 2002.

answers to these questions *per se* are rather unimportant. Still, they can be seen as good proxy measures for the awareness of political issues and the 'true' political information levels of citizens. All the questions relate to basic characteristics of the EU, and it seems very likely that they correlate with the general political information of individuals.

The answers to the ten questions are used to construct an index of "objective" political information about the EU. The index counts every correct answer as one index point, i.e. the maximum value of the index is ten (if all questions were answered correctly) and the minimum value is zero. Every "don't know" answer is counted as a "wrong" answer. The resulting index serves as the dependent variable for the analysis of referenda's effect on the objective information citizens have on the EU. On average, the Europeans surveyed answered 3.42 questions out of 10 correctly (std. dev. 2.44).

In order to also conduct a longitudinal analysis of voter information in European countries, we use several waves of the Eurobarometer from 1992 to 1997 as a second data source (Scholz and Schmitt 2001). Each of the in total eight Eurobarometer waves[4] available contains a standard question on the "subjective" political information level of an individual. The question asked is: "All things considered, how well informed do you feel you are about the EU, its policies, its institutions?" Answers can be given on a scale from (1) very well, (2) quite well, (3) not very well, to (4) not at all well. We recoded answers so that a high value of 4 means "very well" informed and a low value of 1 means "not at all well" informed. The resulting variable is used as the dependent variable in the analysis of a referendum's effect on the citizens' subjective political information levels over time. On average, the over 120'000 European citizens surveyed from 1992-1997 felt "not very well informed" about the EU, as indicated by the mean value of 2.14 on a scale from 1 to 4 (st.d. 0.77).

[4] The eight waves used are the EB 37.0 (conducted in March-April 1992), EB 38.0 (Sept.-Oct. 1992), EB 40 (Oct.-Nov. 1993), EB 41.0 (March-May 1994), EB 42 (Nov.-Dec. 1994), EB 43.1 (Apr.-May 1995), EB 46.0 (Oct.-Nov. 1996), and EB 47.1 (March-Apr. 1997).

As the main explanatory variable, we are interested in referenda about the EU. Do they affect citizens' political information in the respective countries? In the period considered, referenda were held in Denmark (2.6.1992 and 18.5.1993), Ireland (18.6.1992), France (20.9.1992), Austria (12.6.1994), Sweden (13.10.1994), Finland (16.10.1994) and Norway (28.11.1994). This information on referenda is used in two different ways. For the cross-sectional analysis on objective voter information in 1996, a dummy variable "referendum" is created that is equal to 1 if a referendum has taken place before 1996 in a country, and 0 otherwise.[5] For the longitudinal analysis on subjective voter information from 1992 to 1997, dummy variables are created for each country that are equal to 1 for the observations included in the Eurobarometer wave right following a referendum. For example, in the case of Ireland where the referendum took place in June 1992, the dummy "referendum IRL" takes on the value 1 for all Irish surveyed in the second Eurobarometer wave conducted in September and October 1992, and 0 for those surveyed in the wave conducted before and the waves conducted after the referendum. Thus, in the longitudinal analysis, the dummy variables capture the short term effects of a referendum on the citizens' subjective information levels in a country.[6]

The Eurobarometer surveys also contain information on individual characteristics that have been shown to influence peoples' political information levels (see the next subsection for a theoretical discussion). As control variables, we include education (4 categories), income (12 categories), age (6 categories), gender, civil status (6 categories) and the type of communitiy individuals live in (3 categories) in the analysis. The

[5] Norway is not included in the 1996 survey; i.e. the dummy variable used in the cross-section analysis on objective voter information includes the other six countries with a referendum only.

[6] The study of long-term effects is hampered, unfortunately, by data restrictions. Norway, Sweden and Austria are only included in the Eurobarometer surveys after their referendum on the EU (from 1995 on), and thus a dummy variable that is equal to 1 for all waves following a referendum would amount to a country fixed effect in these cases. Moreover, the question on subjective political information is not available before 1992, leaving only one wave of observations before a referedum in the case of Denmark, Ireland and France.

Eurobarometer surveys provide information on these control variables that is made comparable across the countries surveyed.

3.2. Switzerland

The empirical analysis for Switzerland is based on a survey conducted by political scientists after the general national elections in 1995 ('SELECTS 1996', Delagrande et al. 1995). The database is well suited for our purposes because it allows assessing voters' objective information about political issues. The survey includes three questions about fundamental characteristics of the Swiss political system; such questions are rarely asked in surveys because of their examinatory character. The survey contains roughly 7,500 observations and information on important control variables.

Respondents had to answer the following three questions: (i) "How many parties are in the Federal Council?" (ii) "Who was the president of the Federal Council in 1995?" And (iii) "How many signatures are required for an initiative?" Responses to these questions can clearly be assigned to the three categories 'right answer', 'wrong answer' and 'refused to answer'.[7]

Again, these questions do not directly measure the political information citizens have, for example, on a specific referendum issue. However, they can be seen as good proxy measures for citizens' awareness of political issues. All the questions relate to basic characteristics of the Swiss political system. A look at the descriptive statistics shows that there is enough variation for a positive correlation to be possible: by far not every citizen knows all the answers to the questions (the average score of correct answers is 1.41), and there is substantial variation (std. dev. 1.03). Only about 18 % of the respondents answer all the questions correctly; 29 % have two correct answers, 29 % one correct answer, and 24 % do not give any correct answer or do not answer any questions at all.

The answers to the three questions are used to construct an index of political information for Switzerland similar to the one for the EU. The index counts every correct answer as one index point, i.e. the maximum value of the index is three (if all questions were answered correctly) and the minimum value is zero. Every "refused answer" is counted as a "wrong answer". This procedure is chosen because a large number of respondents (38 %) refuses to answer at least one of the three questions. Not answering a question can be seen as a relatively cheap way of avoiding a wrong answer. Thus, it seems unproblematic to combine 'refused answers' and 'wrong answers' into a single category.[8] The resulting index on political information serves as the dependent variable for the analysis on voter information in Switzerland.

The main factor that is put forward to explain citizens' information levels are institutions of direct democracy. In Switzerland, direct democratic institutions exist on the federal as well as on the state level (the 26 Swiss cantons). As the federal institutions apply equally to all Swiss citizens, an empirical analysis cannot identify the *level effect* that these federal institutions of direct democracy have on citizens' information. Instead, the empirical analysis has to be concerned with the variation around the average information level (that is formed by Swiss federal institutions). We therefore use the institutional variation across the 26 Swiss cantons as the main explanatory variable. This will provide a lower bound for the effects of institutions on voter information, because only cantonal institutional variation is exploited. However, the extent of political participation possibilities differs substantially for citizens living in different cantons. Some cantons can be characterized as more representative democratic, whereas others are more direct democratic. We use an index developed by Stutzer (1999) that measures the degree of political participation possibilities in a canton on a

[7] The correct answers were: (i) there are four parties in the Federal Council; (ii) the president of the Federal Council in 1995 was Kaspar Villiger; and (iii) the number of signatures required for an initiative is 100,000.

[8] However, the results are not sensitive to this choice and remain qualitatively similar when only the questions answered are included in the index (but, of course, information on 38 % of all the observations is not taken into account); see section 4.2.

scale between one and six.[9] The highest value of the democracy index is observed for canton Basle Land (5.69), and the lowest direct participation rights are to be found in canton Geneva (1.75). For all cantons, the index averages 4.22 points (std. dev. 1.24). The index has been applied in a series of other papers, e.g. Frey and Stutzer (2000), Küttel and Kugler (2001), Schaltegger and Feld (2001). Here, the degree of direct political participation possibilities is used to explain the differences in information levels observed among Swiss citizens.

The survey provides information on other characteristics that political economists have identified as important determinants of voter information. Individuals state their educational level (8 categories) and their gross household income (11 categories); for both variables, voter information is likely to increase. Moreover, information can be expected to be less costly to individuals when they are members of a political party, or when they are married or living with a partner (for theoretical arguments supporting these predictions see Matsusaka 1995).[10] There is no clear prediction for naturalized citizens versus native citizens. While the latter have grown up with political rights, naturalized citizens learn a lot about political institutions during the naturalization process. Apart from these variables, the survey includes information on age, gender, and place of residence of individuals (city, agglomeration or countryside). We complement the data set with information on the population size of the cantons individuals live in. The effects of population size are not unambiguous from a theoretical viewpoint: information might be higher in small cantons, because social interaction is more intense.

[9] The index measures the different barriers for the citizens to enter the political process via initiatives and referenda across cantons. It is based on the four main legal instruments to directly influence the political process in Swiss cantons: (i) the initiative to change a canton's constitution, (ii) the initiative to change a canton's laws, (iii) the compulsory or optional referendum to prevent new law or the changing of law and (iv) the compulsory or optional referendum to prevent new state expenditure. Barriers are measured in terms of (i) the number of signatures necessary to launch an instrument (absolute and relative to the number of citizens with the right to vote), (ii) the legally allowed time span to collect the signatures and (iii) the level of new expenditure per head allowing a financial referendum. Each of these restrictions is evaluated on a six point scale: "one" indicates a high barrier, "six" a low one (compulsory referenda are treated like referenda with the lowest possible barrier). The resulting non-weighted ratings represent the measure used for direct democratic rights in Swiss cantons.

On the other hand, individuals in large cantons might benefit from economies of scale in information production. As socio-demographic characteristics and other control variables are not available for all the individuals interviewed, the final sample for the empirical test of institutional effects on voter information consists of 6,447 usable observations.

In a second step, we also assess whether differences in participation possibilities affect the intensity of political discussions among citizens. Here, the dependent variable consists of the individual answers to the question: "Did you discuss with other people which party or candidates to vote for?" Answers are coded 'yes' or 'no'. However, in this case, only individuals who actually voted in the general election were asked the question. This reduces the sample size to 4016 observations. Note also that the question relates to discussions about the general election, and not about an initiative or a referendum. Nevertheless, we consider this dependent variable as a sufficient proxy measure to present preliminary evidence on discussion intensity, which in the literature is seen as the main transmission channel that leads to higher voter information in more direct democracies.

4 Empirical Analysis for the European Union

4.1. Referenda and Objective Information about the EU

To get a first impression on the relationship between referenda and the objective information citizens have about the EU, we present a "political information league table" of the 15 EU-countries (table 1). The league table contains the ranking of countries according to the average objective political information of their citizens. In order to evaluate the country means ceteris paribus, we estimated an ordered probit regression that includes the control variables presented in the last section (income, education, age, gender, civil status, type of community). The regression is weighted to

[10] A strict empirical test is hampered by potentially strong effects of selection.

produce representative results for each country, and the estimated standard errors are corrected to clustering of observations at the country level.[11]

Table 1: Referenda and Objective Information about the European Union: A League Table of the 15 EU Countries in 1996

Dependent variable: "objective" voter information index (scale from 0 to 10)

Variable	Referendum on EU before 1996	Weighted ordered probit Std. err. adjusted to clustering of obs. in 15 countries		
		Coefficient	z-value	Marg. effect (avg. over all scores)
1. Luxemburg	N	0.986**	62.86	0.068
2. Austria	**Y**	0.817**	59.80	0.057
3. Denmark	**Y**	0.524**	30.68	0.037
4. Finland	**Y**	0.366**	33.70	0.026
5. Germany	N	0.271**	25.24	0.019
6. Belgium	N	0.222**	26.38	0.016
7. Ireland	**Y**	0.081**	6.34	0.006
8. Sweden	**Y**	0.058**	3.96	0.004
9. Portugal	N	0.056(*)	1.71	0.004
10. Italy	N	0.021(*)	1.96	0.001
11. Netherlands	N	reference country		
12. France	**Y**	-0.016*	2.52	-0.001
13. Greece	N	-0.038(*)	1.84	-0.003
14. Spain	N	-0.214**	10.33	-0.015
15. Great Britain	N	-0.496**	19.91	-0.035
Control variables			*yes*	
Observations		65'178		
LR chi^2		17'470.16		
Prob > chi^2		0.0000		

Notes: The control variables not shown include education (4 categories), income (12 categories), age (6 categories), gender, civil status (6 categories) and type of community (4 categories). White estimator for variance. Significance levels: (*) 0.05 < p < 0.10, * 0.01 < p < 0.05, ** p < 0.01.
Data source: Eurobarometer 44.2bis, 1996.

[11] Ignoring the clustering in the estimation model is likely to produce downward biased standard errors, due to the effects of aggregate variables on individual data (Moulton 1990). To get unbiased standard errors for the aggregate country dummies, countries are used as sampling units.

Table 1 provides first evidence in support of our hypothesis: Countries with referenda in general score better than non-referenda country. With Austria, Denmark, Finland, Sweden and Ireland, five out of six referenda countries rank in the upper half of the league table. The only exception is France, who had a referendum on the Maastricht Treaty, but only scores twelveth. With respect to non-referenda countries, Luxembourg, Belgium and Germany make it into the first eight, whereas the remaining six non-referenda countries are to be found in the bottom half of the distribution. The same picture emerges if referenda countries as a group are compared to non-referenda countries: Citizens in the six countries that allowed for a referendum on the Maastricht Treaty answer on average 3.82 questions out of 10 correctly, compared to 3.21 in non-referenda countries ($p<0.01$, two-sample t-test).

In table 2, the positive relationship between referenda and objective information is investigated in more detail. The first column presents the results of a weighted ordered probit regression that includes the dummy variable “referendum” which is equal to 1 for the countries that had a referendum before 1996, and 0 otherwise. The regression also controls for the effects of income, education, age and other determinants. In the second column of table 2, we provide results from a different specification in which the referenda countries are split up into three groups. A first group consists of Austria, Finland, and Sweden, where the referenda took place shortly before the survey was conducted (1994); a second group consists of Denmark, which had the last referendum in 1993; and a third group consists of France and Ireland, where the Maastricht Treaty was voted upon in 1992.

Table 2: Referenda and Objective Information about the European Union: Regression Results

Dependent variable: "objective" voter information index (scale from 0 to 10)

	Weighted ordered probit Std. err. adjusted to clustering of obs. in 15 countries					
	(I)			(II)		
Variable	Coef.	z-value	Marginal effect (avg. over all scores)	Coef.	z-value	Marginal effect (avg. over all scores)
Referendum	0.233	1.54	0.017			
Referenda in A, FI, SW				0.386*	2.01	0.028
Referenda in DK				0.515**	5.72	0.037
Referenda in F, IRL				0.010	0.11	0.001
Education levels (age at the end of education)						
- 15		ref. group			ref. group	
16-19	0.439**	7.60	0.031	0.440**	7.55	0.031
20 +	0.809**	11.75	0.056	0.775**	11.83	0.054
Still in education	0.811**	12.39	0.056	0.764**	12.10	0.053
Income categories						
lowest		ref. group			ref. group	
II	0.034	0.54	0.002	0.015	0.24	0.001
III	0.094	1.27	0.007	0.081	1.09	0.006
IV	0.171*	2.24	0.012	0.161*	2.04	0.012
V	0.217*	2.51	0.015	0.219*	2.54	0.015
VI	0.235**	2.66	0.017	0.236**	2.73	0.017
VII	0.253**	2.84	0.018	0.262**	3.07	0.018
VIII	0.284**	3.11	0.021	0.303**	3.43	0.022
IX	0.277**	3.47	0.020	0.309**	3.77	0.022
X	0.241**	3.04	0.017	0.277**	3.29	0.020
XI	0.329**	3.85	0.023	0.360**	4.12	0.026
Highest	0.432**	4.97	0.031	0.472**	5.22	0.034
income missing	0.281**	3.63	0.020	0.323**	4.20	0.023
Age						
15 – 24		ref. group			ref. group	
25 – 34	0.239**	6.69	0.017	0.233**	6.39	0.016
35 – 44	0.335**	8.23	0.024	0.328**	7.77	0.023
45 – 54	0.426**	9.85	0.030	0.412**	9.31	0.029
55 – 64	0.465**	10.16	0.033	0.455**	9.77	0.033
65 +	0.364**	6.67	0.026	0.350**	6.62	0.025
Sex (1=male)	0.454**	15.87	0.032	0.456**	16.22	0.032

Table 2 (continuation)

Civil Status						
Single		ref. group			ref. group	
Married	-0.019	0.91	-0.001	-0.031	1.49	-0.002
Living with partner	-0.126*	2.47	-0.008	-0.159**	4.80	-0.011
Divorced	-0.050	1.01	-0.003	-0.064	1.17	-0.004
Separated	-0.096**	3.57	-0.007	-0.058	1.69	-0.004
Widowed	-0.159**	3.79	-0.011	-0.162**	3.87	-0.011
Type of community						
Village		ref. group			ref. group	
Small town	0.016	0.40	0.001	0.004	0.11	0.000
City	0.074	1.29	0.005	0.079	1.40	0.005
Observations	65’178			65’178		
LR chi^2	12’386.7			13’238.1		
Prob > chi^2	0.0000			0.0000		

Notes: White estimator for variance. Significance levels: (*) $0.05 < p < 0.10$, * $0.01 < p < 0.05$, ** $p < 0.01$.
Data source: Eurobarometer 44.2bis, 1996.

The results in table 2 show that the positive effect of referenda on objective information is an overall stable and sizeable result. The positive coefficient on the variable “referendum” indicates that citizens in referenda countries are on average better informed (however, the effect is at the border of statistical significance)[12]. The size of the effect is considerable. As the coefficients in ordered probit regressions do not have an intuitive interpretation, table 2 also provides marginal effects.[13] For the variable “referendum”, the marginal effect amounts to 1.7%, i.e. citizens in referenda countries are 1.7% more likely to be better informed by one index point than otherwise similar citizens in non-referenda countries. The effect is comparable to the difference in political information between an individual in a middle income category and an individual in the lowest income category. Table 2 further indicates that the overall referendum effect mainly stems from the countries Austria, Finland, Sweden and

[12] If we include an additional dummy variable for the EU host countries Luxembourg and Belgium, the coefficient on the referendum variable is significant at the 95%-level.

[13] The marginal effect indicates the change in the probability that an individual is better informed by one index point when the independent variable increases by one unit. Alternatively, it can be interpreted as an increase in the share of persons that answer a given number of questions correctly. In the case of dummy variables, the marginal effect is evaluated with respect to the reference group. The marginal effects

Denmark, which held their referenda closer to the date when the survey was conducted. In contrast, the citizens of France and Irleand, who voted on the Maastricht Treaty already in 1992, are on average not better informed than people in non-referenda countries. This indicates that the positive information effects of referenda fade over time when they are a rare event.

It is also noteworthy that the regressions produce the theoretically expected results for the control variables used. Information is strongly increasing in education, income, and age, indicating that the dependent variable does not only capture random differences in objective information about the EU.

The evidence presented in table 1 and 2 gives a first indication that citizens seem to be better informed about the EU ceteris paribus when they had a possibility to vote on EU issues. However, some alternative explanations might be put forward. For example, one might argue that historical reasons account for the observed differences between countries. The longer a country has been a member of the EU, the more have its citizens been exposed to information about the EU. Similarly, one may hypothesize that the involvement in EU institutions raises information levels. It is noteworthy, however, that arguments along these lines would rather strengthen our point. On the one hand, the citizens of Austria, Finland, and Sweden are found to be well informed about the EU although these countries only joined in 1995. On the other hand, the involvement in EU institutions might explain why also some non-referenda countries are found in the upper half of the league table; indeed, the high ranking countries Luxembourg and Belgium host most of the EU organizations.

4.2. Referenda and Subjective Information about the EU

In order to provide complementary evidence, this subsection studies the relationship between referenda and information in a longitudinal setting. It is investigated how

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provided in table 2 indicate the average probability change over all eleven scores of the voter information index.

referenda change the information levels of citizens over time, i.e. information levels before and after a referendum are compared. As objective information is only available in 1996, we use a measure of subjectively perceived information levels included in eight Eurobarometer waves between 1992 and 1997 instead. For each of the countries that had a referendum, it is studied how the average subjective information levels of citizens changed in the survey wave subsequent to the referendum.

Table 3 contains the results of the longitudinal analysis of referenda's effect on information. Again, a weighted ordered probit regression is estimated that produces representative results at the country level. The regression includes fixed effects for each country to account for unobserved heterogeneity between countries, and time effects for each Eurobarometer wave to capture potential changes in information levels common to all EU citizens. Estimated standard errors are corrected for clustering of observations at the country level. The effects of referenda are estimated using dummy variables for each country and referendum: if a referendum has taken place in a country, all observations of the subsequent survey wave in this country are given the value 1. In contrast to the cross-section analysis, the regression does not include control variables. On the one hand, the control variables are not available for each of the waves used. On the other hand, the analysis focuses on the differential effect that a referendum has on the population in a country, compared to citizens of other countries without a referendum at that time. As the levels of income, education, and other characteristics do not rapidly change from one survey wave to another, one can plausibly assume that the regression produces unbiased results even when excluding these control variables.

Table 3: Referenda and Subjectively Perceived Information Levels: Results of a Longitudinal Analysis 1992 - 1997

Dependent variable: "subjective" voter information index (scale from 1 to 4)

Variable	Weighted ordered probit Std. err. adjusted to clustering of obs. in 16 countries		
	Coefficient	z-value	Marginal effect (avg. over all scores)
Referenda			
Denmark 1992	0.086*	2.27	0.016
Denmark 1993	0.082*	2.26	0.015
France 1992	-0.048	1.13	-0.008
Irland 1992	0.086(*)	1.88	0.016
Austria 1994	0.302**	6.28	0.057
Sweden 1994	0.148**	3.75	0.027
Finland 1994	0.159**	4.14	0.029
Norway 1994	0.364**	8.66	0.069
Country fixed effects (country dummies)		*yes*	
Time effects (survey wave dummies)		*yes*	
Observations	120'225		
LR chi^2	4876.9		
Prob > chi^2	0.0000		

Notes: White estimator for variance. Significance levels: (*) $0.05 < p < 0.10$, * $0.01 < p < 0.05$, ** $p < 0.01$.
Data source: Eurobarometer 1992 – 1997, eight waves (see data section).

Table 3 shows that for almost every referendum held in European countries between 1992 and 1997, a positive effect on citizens' perceived information levels can be identified. With the exception of the referendum held in France in 1992, citizens find themselves in every case better informed about the EU, its institutions, and its policies after they were given the possibility to vote on a EU issue. The estimated coefficients are in general significant and of considerable magnitude. The marginal effects indicated in table 3 range from 1.6% in the case of the two Danish and the Irish referendum up to

6.9% for the Norwegian referendum. Thus, referenda contribute to a significant extent to the information citizens feel they have about the EU. Although this result is reached using subjectively reported levels of information as the dependent variable, it corresponds well to the finding that citizens in referenda countries are also objectively better informed about the EU.

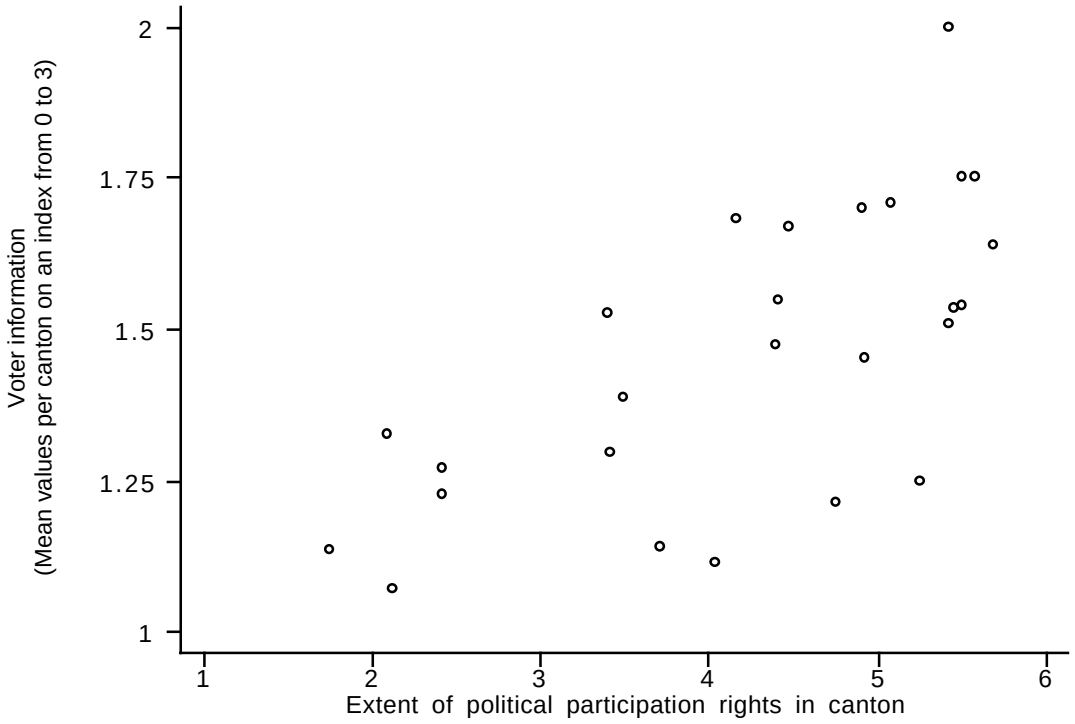
5 Empirical Analysis for Switzerland

5.1. Institutional Effects on Voter Information in Switzerland

To provide further evidence on the relationship between political participation possibilities and voter information, we focus on a second institutional context and investigate political information in Switzerland. Switzerland is especially suited for our analysis because unique institutional variation exists: as described in the data section, there are considerable differences with respect to democratic participation rights between the 26 Swiss cantons. We hypothesize that the extent of direct democracy in a canton positively correlates with a measure on voter information we obtain from a large survey conducted in 1995.

To get an intuition of the relationship between political participation possibilities and voter information, results are first presented graphically. Figure 1 plots the average information level of citizens living in a canton against the index of political participation possibilities (see next page). As can be seen, the raw data clearly indicate a positive correlation.

This raw relationship could, of course, be due to third factors that are correlated both with institutionalized participation rights and with voter information. For example, it might be that voter information is higher in small cantons, and small cantons are at the same time more direct democratic. In a multiple regression analysis, such alternative explanations can be controlled for. In table 4, we present the main results from a multiple regression analysis that includes all the control variables presented in the data section. A weighted ordered probit model is used in order to exploit the ranking



Data source: Selects 1996.

Figure 1: Correlation between Voter Information and Political Participation Rights in Swiss Cantons, 1995.

information contained in the scaled dependent variable. The weighting variable that is applied allows representative results on the individual level for Switzerland. Moreover, the estimated standard errors are adjusted to clustering of observations at the cantonal level. This is necessary because individual data are combined with data that are aggregated for the 26 cantons.

Table 4: Political Participation Possibilities and Voter Information in Switzerland

Dependent variable: voter information index (scale from 0 to 3)

	Weighted ordered probit Std. err. adjusted to clustering of obs. in 26 cantons		
Variable	Coefficient	z-value	Marginal effect (average for all scores)
Extent of political participation rights	0.096**	5.065	0.019

Table 4 (continuation)

Compulsory education		ref. group	
Basic vocational training	0.082	0.685	0.016
Vocational training	0.175*	2.638	0.034
Diploma school	0.309**	3.356	0.061
High school	0.550**	5.443	0.107
Higher vocational education	0.526**	7.420	0.102
Higher vocational college	0.487**	4.945	0.095
University degree	0.948**	10.452	0.173
Household income below Sfr. 2,000		ref. group	
Household income Sfr. 2,000-3,000	-0.026	-0.255	0.005
Household income Sfr. 3,001-4,000	0.124	1.296	0.024
Household income Sfr. 4,001-5,000	0.022	0.241	0.004
Household income Sfr. 5,001-6,000	0.089	0.755	0.017
Household income Sfr. 6,001-7,000	0.269*	2.534	0.054
Household income Sfr. 7,001-8,000	0.267*	2.075	0.053
Household income Sfr. 8,001-9,000	0.332**	3.307	0.066
Household income Sfr. 9,001-10,000	0.459**	4.998	0.089
Household income Sfr. 10,001-12,000	0.260*	2.321	0.052
Household income more than Sfr. 12,000	0.185	1.456	0.037
Age	0.012(*)	1.970	0.002
Age squared	-2.210 e^{-6}	-0.034	-0.000
Sex (1 = male)	0.584**	15.295	0.115
Married		ref. group	
Living with partner	-0.031	-0.324	-0.006
Single	0.141*	2.226	0.028
Divorced	-0.186*	-2.415	-0.036
Widowed	-0.062	-0.752	-0.012
Living in city		ref. group	
Living in agglomeration	-0.075(*)	-1.788	-0.015
Living on countryside	-0.102*	-2.075	-0.020
Size of population in canton (in '000s)	-0.268 e^{-3}	-1.076	0.000
Size of population squared	0.367 e^{-6} (*)	2.030	0.000
Naturalized citizen		ref. group	
Native Swiss citizen	0.361**	4.061	0.070
Member of political party (1 = yes)	0.300**	4.954	0.060
Observations	6449		
LR chi^2	1'553.8		
Prob > chi^2	0.0000		

Notes: Level of voter information is measured on a three-point scale. White estimator for variance. Significance levels: (*) $0.05 < p < 0.10$, * $0.01 < p < 0.05$, ** $p < 0.01$.
Data source: Selects 1996.

The estimation results in table 4 show statistically significant effects of several demographic and socio-economic factors and, most importantly, the institutional factor on voter information. The results can be interpreted as follows: a positive coefficient

indicates that the probability of being politically better informed increases, compared to any given level. Thus, citizens are politically better informed in cantons with more extended direct democratic participation rights, ceteris paribus. For ease of interpretation, marginal effects are also provided. The last column indicates that an increase in the index of direct democratic rights by one point raises the probability of a person being better informed by one index point by 1.9 percentage points. This effect is in itself sizeable:

(i) When the full range of the institutional variable is considered, i.e. when individuals in canton Basle Land (with the highest democracy index of 5.69) are compared to citizens in canton Geneva (with the lowest direct participation rights of 1.75), the marginal effect of political participation rights on voter information amounts to 7.5 percentage points. The size is comparable to the effect of, for instance, having attended a diploma school instead of having completed only compulsory education, of being member of a political party, or of having a household income of 9,000 Sfr. instead of 5,000 Sfr.

(ii) The reported effect is an average over the whole sample, i.e. the institutional factor is important in an aggregate sense. In comparison, being better educated 'only' raises the information levels of those who have actually got a better education.

Table 4 furthermore indicates that the results for the other variables included are in line with theoretical predictions. The overall regression thus seems reliable, and the dependent variable obviously captures more than just random differences in citizens' information levels. For education and income, we both find positive and statistically significant effects. Voter information is more or less monotonically increasing in education, and the size of the marginal effects confirms that education is indeed an important predictor of information levels. The results for income are similar, although the marginal effects are smaller and information seems not to monotonically increase in income. An explanation for this might be that education and income are highly

correlated. Voter information is also found to be significantly higher when an individual is a member of a political party, whereby causality for this partial correlation can go in both directions. Furthermore, it is found that individuals who are born as Swiss citizens are better informed than those who are naturalized later in life. We get somewhat ambiguous effects for the martial status variables: singles are relatively best informed, although they cannot profit from potential economies of scale in information production that emerge from living with a partner or being married. On the other hand, married people, and those living with a partner, are better informed than divorced or widowed individuals. Voter information, furthermore, is found to increase in age and to be higher for men and for people living in cities. The effect for population size cannot easily be interpreted because the relation with voter information seems to be u-shaped, with a minimum around a population of 350,000. However, the linear term of population size is not significant. An alternative specification (not presented) that only includes the linear term yields statistically significant positive effects for population size. At the upper end of the scale, population size seems to have positive effects on voter information, consistent with an argument of economies of scale in information production.

5.2. Direction of Causality

Do well informed citizens chose direct democratic institutions? Or, in other words, does the causality between direct democracy and voters' competence work in reverse in Swiss cantons?[14] Direct democratic participation possibilities, in the form of referenda and initiatives in Switzerland, started to develop in the middle of the 19th century. The adoption of some of the instruments of direct popular participation reflects the spread of the spirit and ideas behind the American and the French revolutions. Equally important

[14] A standard test for causality would be the Hausman Test. With a second estimator or an instrumental variable we could study the effect on citizens' information about political issues and compare the effect with our estimations. If the effects would be of similar magnitude we could reject the hypothesis of

were political movements within the citizenry. Citizens fought for direct democratic instruments to gain political power against arbitrary decisions by parliaments and the influence of industrial pressure groups on these authorities in the cantons (see e.g. Kölz 1998). This historic perspective suggests that the democratic institutions have not been struggled for by a particular group of politically well informed citizens. Especially during the last decades, institutional conditions in Swiss cantons have been quite stable,[15] which suggests that causality mainly runs from direct democratic rights to political information. However, we also think that an informed electorate fosters institutions of direct political participation. If citizens are better aware of the scope of political issues they are probably less disappointed with political outcomes that are against their interest and are more willing to accept the institutions through which the outcomes have been generated.

5.3. Sensitivity Analysis for the Swiss Results

In the following, various robustness checks are conducted to analyze the sensitivity of the findings. The results are summarized in table 5. We report how the coefficient on the institutional variable is changed when alternative specifications are estimated or when sample choice is different.

First, we analyze citizens' information for every question that is included in the index separately. The results are presented in the specifications (2) to (4) in Table 5. The reported coefficients indicate that the institutional effect is not driven by a single question. For two of the three questions, results are positive and significant. For the

reversed causality. However, there is so far no general model that takes institutions of direct democracy as endogenous and that we could include in our empirical approach.

[15] The Spearman rank order correlation of the index for direct democratic rights between 1970 and 1996 is 0.803.

question on signature requirements for initiatives, however, there is no relationship if only this single question is considered.[16]

Second, the basic specification (as presented in table 4) is augmented with two dummy variables on language group membership, one for French speaking and one for Italian speaking cititzens. Language group effects are potentially important for two reasons. There might be cultural differences between the language groups that influence information demand and supply in the French speaking and Italian speaking parts of Switzerland. Perhaps more importantly, citizens in the French speaking and Italian speaking regions often claim that they are overruled by the German speaking majority in votes on referenda and initiatives. Then, it might be natural that information levels for these language groups are lower simply because they perceive being informed as not worthwhile. Language group effects can influence the estimates on the institutional variable, because the cantons where French and Italian speaking citizens live are, at the same time, less direct democratic than the German speaking cantons. Including language group dummies in specification (5) indeed reduces the coefficient of political participation possibilities on voter information by half (it remains statistically significant, however). French speaking and especially Italian speaking citizens are substantially less informed on political issues. This difference can be due to the causes mentioned above, but it might as well be a result of these citizens actually having lower political participation rights. The issue of which explanation is correct may not be disentangled efficiently in the econometric analysis. Note, however, that the institutional variation among German and French speaking cantons is sufficient to

[16] This result is puzzling in two ways. First, we have expected that signature requirements are a good proxy for people's awareness of political issues. Second, knowledge on signature requirement is positively related to the index of direct democracy in the replication for 2000. Thus, overall the results for signature requirement are not conclusive. While there have been discussions in Switzerland to change the signature requirements at the federal level at several occasions during the late 1990s (e.g. when the federal constitution was completely revised) any eplanation of the results along these lines would be ad hoc.

estimate significant positive effects of political participation possibilities on voter information.

Third, we exclude all the individuals from the sample who refused to answer at least one of the three questions on voter information. Thus, only individuals are considered who answered all questions, be it correctly or incorrectly. A first specification without language group effects produces results similar to those for the larger sample. The coefficient on the institutional variable is of the same magnitude and statistical significance. However, it is reduced somewhat further (to one fourth of the original effect) when language group effects are included in a second specification, and statistical significance of the effect falls to the 80% level.

Fourth, we replicate the results with a similar survey conducted after the general elections in 2000 ("Selects 2000"). The survey in 2000 asked the same questions on voter information as the 1996 survey, which allows for the construction of an identical index on voter information, and it contains largely the same control variables. The regression results indicate that the institutional effect on voter information is very sensitive to this replication. The coefficient on political participation possibilities is slightly negative, although not statistically significant. It is difficult to explain this result, especially as the findings for the 1996 survey seem to be robust. One explanation might be that for one of the questions (the one on the president of the Federal Council), correct answers are unusually high in 2000 (84% compared to 75% in 1996). This can be explained by the exceptional popularity of the then president, Adolf Ogi. Indeed, a look at the single questions reveals that there is a strong negative effect between direct democracy and the knowledge of the president of the Federal Council in 2000. For the other questions on the number of parties in the Federal Council and the number of signatures required for an initiative, the regressions reveal positive relationships. Overall, these countervailing effects cancel out, resulting in essentially a zero relationship between political participation possibilities and overall voter information.

This leads us to conclude that our main results for the 1996 sample can be considered as sufficiently reliable.

Table 5: Sensitivity Analysis of the Swiss Results

Dependent variable: voter information

Specification	Coefficient			*Sample size*
	Political participation rights	Dummy for French speaking region	Dummy for Italian speaking region	
(1) Specification as in table 1	0.096** (0.018)	–	–	*6449*
(2) Only single question on Federal Council composition as dependent variable	0.122** (0.033)	–	–	*6449*
(3) Only single question on Federal Council President as dependent variable	0.114** (0.018)	–	–	*6449*
(4) Only single question on signature requirement for initiatives as dependent variable	-0.003 (0.013)	–	–	*6449*
(5) As in table 1, but with language group dummies	0.054** (0.018)	-0.160* (0.061)	-0.381** (0.036)	*6449*
(6) Only individuals who answered every question	0.099** (0.022)	–	–	*4102*
(7) As in (6), but with language group dummies	0.026 (0.019)	-0.271** (0.063)	-0.635** (0.041)	*4102*
(8) Replication with the Selects 2000 survey	-0.028 (0.028)	–	–	*1772*

Notes: The regressions include the same control variables as in table 1. Standard errors are in parentheses. Regressions are weighted ordered probit. Standard errors are adjusted for clustering at the cantonal level. Level of voter information is measured on a three point index. Significance levels: $^{(*)}$ $0.05 < p < 0.10$, * $0.01 < p < 0.05$, ** $p < 0.01$.
Data sources: Selects 1996 and 2000.

5.4. Institutional Effects on Discussion Intensity in Swiss Cantons

One transmission channel that leads from extended political participation rights to higher voter information is the discussion process. Private and public political

discussion affects voter information levels mainly on the demand side: when citizens are more frequently involved in political discussions, "having an opinion" and being informed is transformed partly into a private good. In this subsection, it is empirically investigated whether political participation possibilities indeed influence discussion intensity among citizens.

Table 6 presents results from a weighted probit regression that links discussion intensity to the same explanatory variables as already included in table 4. Discussion intensity is measured as the individual answers to the question: "Did you discuss with other people which party or candidates to vote for?". The answers are coded "yes" or "no", which results in a dichotomous dependent variable. Regressions again adjust for clustering of observations at the cantonal level.

Table 6: Political Participation Possibilities and Discussion Intensity in Switzerland

Dependent variable: discussion intensity

	Weighted probit Std. err. adjusted to clustering of obs. in 26 cantons		
Variable	Coefficient	t-value	Marginal effect
Extent of political participation rights	0.143**	4.993	0.053
Compulsory education		ref. group	
Basic vocational training	0.189	1.150	0.067
Vocational training	0.324*	2.390	0.118
Diploma school	0.537**	3.481	0.174
High school	0.521**	3.607	0.171
Higher vocational education	0.447**	3.265	0.150
Higher vocational college	0.493**	4.852	0.163
University degree	0.393**	3.433	0.134
Household income below Sfr. 2,000		ref. group	
Household income Sfr. 2,000-3,000	0.269	1.416	0.094
Household income Sfr. 3,001-4,000	0.339	1.689	0.117
Household income Sfr. 4,001-5,000	0.289(*)	1.712	0.101
Household income Sfr. 5,001-6,000	0.322(*)	1.917	0.112
Household income Sfr. 6,001-7,000	0.290	1.482	0.101
Household income Sfr. 7,001-8,000	0.461*	2.246	0.154
Household income Sfr. 8,001-9,000	0.842**	5.053	0.249
Household income Sfr. 9,001-10,000	0.492*	2.255	0.162
Household income Sfr. 10,001-12,000	0.628**	4.772	0.199
Household income more than Sfr. 12,000	0.695**	3.741	0.215

Table 6 (continuation)

Age	-0.022*	-2.476	-0.008
Age squared	0.134 e^{-3}	1.520	0.000
Sex (1 = male)	-0.246**	-6.200	-0.090
Married		ref. group	
Living with partner	0.131	1.121	0.040
Single	-0.002	-0.026	-0.000
Divorced	0.214	1.380	0.075
Widowed	-0.028	-0.256	-0.010
Living in city		ref. group	
Living in agglomeration	0.011	0.103	0.004
Living on coutryside	0.107	0.840	0.039
Size of population in canton (in '000s)	0.407 e^{-3}	1.017	0.0001
Size of population squared	-0.163 e^{-6}	-0.487	-0.000
Naturalized citizen		ref. group	
Native Swiss citizen	0.212**	2.786	0.081
Member of political party (1 = yes)	0.119	1.427	0.043
Observations	4016		
LR chi^2	350.5		
Prob > chi^2	0.0000		

Notes: Discussion intensity is measured as a dichotomous variable. White estimator for variance. Significance levels: $^{(*)}$ 0.05 < p < 0.10, * 0.01 < p < 0.05, ** p < 0.01.
Data source: Selects 1996.

Table 6 confirms that the extent of political participation possibilities affects discussion intensity. Citizens are more involved in political discussions in cantons with more extended direct democratic participation rights, ceteris paribus. An increase in the index of direct democratic rights by one point raises the proportion of persons having discussed the election with other people by 5.3 percentage points. The magnitude of the effect is sizeable, especially when the full range of institutional variation within Switzerland is taken into account. Citizens living in the most direct democratic canton are 21 percentage points more likely to discuss with fellow citizens than people with the lowest political participation possibilities. The effect is comparable to those of substantial increases in education and income.

The control variables in general have plausible signs and exert significant influences on discussion intensity. Education and income are important predictors of discussion intensity, as is being born as a Swiss citizen. For other control variables, the results are

more ambiguous. Marital status, population size and place of residence seem not to affect discussion intensity systematically, although they somewhat affected voters' information level. For gender being male and age, negative correlations are estimated. Men and senior citizens thus seem to discuss political issues less with others, but nevertheless are better informed voters. These are two interesting findings in themselves. While there is no according prediction from our underlying model, there seem to be reasonable arguments along which the findings could be further analyzed. First, it might well be argued that people accumulate political information over their life while being less and less involved in political discussions. Second, women and men may use different channels to gather political information. Men, e.g., might use media more intensively than women to get political information.

We again conduct robustness checks to analyze the sensitivity of the findings on discussion intensity.

First, the basic specification (as presented in table 6) is augmented with two dummy variables on language group membership, one for French speaking and one for Italian speaking citizens. The reasons for this are largely the same as already discussed above: cultural differences between the language groups might influence discussion intensity in the French and Italian parts of Switzerland, or it might be lower because these citizens feel they are often overruled by the German speaking majority and are thus less interested in national politics. The estimated effect for the institutional variable is indeed sensitive to the inclusion of language group differences. The coefficient falls to 0.01 (t=0.299), whereas French speaking (coeff.=-0.518, t=-4.189) and Italian speaking citizens (coeff.=-0.236, t=-4.966) discuss political issues substantially less with their fellow citizens. Due to the low variation within the French speaking cantons in the extent of political participation rights, it is again not possible to empirically distinguish in conclusion whether this is the case because these citizens actually have lower political participation rights, or whether this just reflects cultural differences. Both

explanations might be correct. We have to conclude that the institutional effect on discussion intensity is not reliable enough to make clear statements. As the question on discussion intensity was not asked in the 2000 survey, we cannot replicate the findings using the survey conducted after the 2000 elections.

6 Conclusions

This paper empirically tests the theoretically well founded notion that voters are better informed when they have a larger say in the political process. Using survey data from the EU and Switzerland, we find supportive evidence for this prediction. Voter information is to a substantial degree endogenous to the political institutions under which citizens live.

Referenda on the Maastricht Treaty and on Joining the EU have substantially increased citizens factual information about the EU as well as their subjectively perceived level of information. The size of the estimated effect of a referendum in the EU on "objective" information is comparable to the difference in political information between an individual in a middle income category and an individual in the lowest income category.

In Switzerland, larger direct participation possibilities result in higher information levels. Comparing the size of the effects, we find that the influence of more political participation possibilities is substantial: the range is comparable to an increase in education from just compulsory education to having attended a diploma school, or an increase in household income from 5000 SFr. to 9000 SFr. Various sensitivity checks support the general result. However, the institutional effect of extended participation possibilities on voter information is found to be sensitive to replication with a similar, although much smaller, survey conducted in 2000. An empirical explanation for the difference in results is provided.

Apart from the institutional variables, the regressions include several other control variables that political economists have identified as important determinants of voter information, e.g. education, income or party membership. For these control variables, we find significant effects with the expected signs, indicating that our dependent variable captures more than just random differences in voter information. Looking at the joint findings for the EU and Switzerland, we believe that our study presents for the first

time systematic empirical evidence that voters are better informed when they have a larger say in politics. The findings complement the theoretical arguments and the circumstancial evidence previously advanced in the literature.

The findings have important policy consequences. If voter information is to be increased (a claim that is regularly heard), governments and policy advisors often focus on information campaigns on specific issues they themselves find important. However, information campaigns often only provide superficial information and consist of one-way communication, thus hardly leading to long term increases in voter information levels. Our results point to an institutional alternative. Higher voter information might be achieved by giving citizens more direct participation possibilities.

We also investigate whether political discussion intensity among citizens should be treated as endogenously determined by political institutions. Private and public discussions about political issues are presumed to be a major transmission mechanism for the effect of direct democratic institutions on voter information. First findings seem to support the hypothesis. However, the empirical results are sensitive to the inclusion of differences between the three large Swiss language regions over and above the institutional variation. While further research is needed, current evidence suggests that a promising remedy for an often claimed voter alienation and apathy in politics could be seen in giving citizens more political participation rights.

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