

# When the Dog Walks the Owner? Direct Democracy Derailed\*

Lucas Leemann<sup>†</sup>

Prepared for presentation at [Mini-APSA](#) at the Dept.  
of Political Science, Columbia University, April 29, 2011

First version: 4/20/2011 — this version: 4/25/2011<sup>‡</sup>

## Abstract

It is often argued that direct democracy is the safeguard of politics and allows the citizens to retain power. At the same time critiques of direct democracy point out that the process is dominated by special interests and that these elites use direct democratic institutions to further their own goals. I take these claims and put them in a coherent theoretical framework. I derive testable hypotheses which are evaluated using Swiss data. I illustrate how conventional quantitative tools can be misleading when testing strategic choices such as this. By relying on a methodological innovation (quantal response models for observational data) I can show how to overcome classic problems in social science research pertaining to strategic behavior. The tests are based on original data from Switzerland but the claims generalize in principle to any representative system which offers the citizens the possibility to veto laws. I cannot find systematic evidence for the abuse of direct democracy.

---

\* This paper is part of a larger project which is joint work with [Simon Hug](#). The work on the statistical model (derivation and implementation) was done during the last two years. We have presented this project at the Annual Meeting of the Swiss Political Science Association (2010) as well as at the Annual Meeting of the Midwest Political Science Association (Hug and Leemann, 2010). I would like to thank Jeffrey Lax, Peter Selb, Sharon O'Halloran, Pierce O'Reilly, and Taehee Whang for comments. I am indebted to Frédéric Varone and Roy Gava for sharing their data and to Simone Wegmann for valuable research assistance.

<sup>†</sup> Graduate Student, Department of Political Science, Columbia University; International Affairs Building; 420 W 118th Street; New York City; email: [ltl2108@columbia.edu](mailto:ltl2108@columbia.edu)

<sup>‡</sup> First draft, please check back for a newer version ([ltl2108@columbia.edu](mailto:ltl2108@columbia.edu)).

*“Control of Political Parties is the very beginning of political democracy.”*

Weyl (1912, p.238)

*“For twenty years I preached to the students of Princeton that the Referendum and the Recall was bosh. I have since investigated and I want to apologize to those students. It is the safeguard of politics. It takes the power from the boss and places it in the hands of the people.”*

Woodrow Wilson, 1911 (Cronin, 1989, p.38)

## 1 Introduction

Direct Democracy can be understood as an additional element which enriches representative systems. Whether in the Swiss cantons or in the American states, direct democratic measures were introduced with a clear purpose (Kriesi and Wisler, 1999). Giving the citizen the right to propose laws or to veto legislation should take power from party elites and place it in the people’s hands. Goebel argues that “Direct democracy, as it is most commonly defined, marks a reversal in the flow of political power that enables citizens to place propositions on the ballot” (Goebel, 2002, 3). Taking away power from the legislative branch constrains the ability of parties and party elites. It is no coincidence that one condition likely to explain the introduction of direct democracy in the American states has been weak parties (see e.g. Smith and Fridkin, 2008). It is in this line when I say, that direct democracy can act as a leash on the legislature and that the citizens are holding this leash.

The canonical idea behind direct democracy is that citizens have preferences which might diverge from their representatives. Giving citizens the right to propose (initiative) and veto (referendum) legislation generates higher policy congruence. This is also at the heart of both normative (Rousseau<sup>1</sup>) as well as positive models (e.g. Romer and Rosenthal, 1979) of direct democracy. One of the assumptions that unites these concepts is that citizens are assumed to have fixed or given preferences over all issues.<sup>2</sup> If this assumption is wrong and parties are able to influence the preference formation, direct democracy may be not more than a ritual obscuring the true nature of power distribution in a society.

If it is the case that the direct democracy can wrest power away from the legislators, one should observe this when examining legislative behavior. Thus, this paper uses original data from the lower house (*Nationalrat*) in Switzerland to test critical hypotheses. It has been

---

<sup>1</sup>Butler and Ramney claim that “Switzerland is, indeed, the only country in Europe that Rousseau would have regarded as genuinely democratic.” (1994: 24).

<sup>2</sup>Rousseau does not rely on preferences but rather on knowledge of what constitutes the common good.

argued that direct democracy is taken over by special interests (Broder, 2000; Gerber, 1999; Stratmann, 2005; Stratmann, 2006; Serdült, 2007; de Figueiredo, La, and Kousser, 2010). I seek to answer this question while employing recent innovations in statistical modeling. As I will show, common statistical models are ill-suited to answer the substantive questions at hand (Hall, 2003). I rely on work by McKelvey and Palfrey (1995) and Signorino (1999*a*) to derive an appropriate estimator.

I test such critiques of direct democracy by focusing on the referendum institution. The optional referendum allows every citizen to attempt to veto a new law. To test these claims I rely on data from Switzerland, the country with the most referendums in the world (Butler and Ranney, 1994). This study relies on original data which I have collected in the past two years. The original data and the innovative methodological approach will allow me to make an assessment of a key question concerning direct democracy: Can citizens use direct democratic institutions to keep or retain power?

## **2 Can the Dog Also Walk the Owner?**

Usually parties and their legislators control the legislative process as they are the only actors apart from government which can offer laws. Legislators are constrained by their desire to get re-elected (Mayhew, 1974). Direct democracy can add an additional constraint by allowing citizens to oppose legislated law and force a plebiscite on laws with which they disagree. Legislators anticipate the potential referendum and this constrains lawmakers in their actions (Neidhart, 1970; Romer and Rosenthal, 1979*b*). This view implies that the optional referendum is an institution that shifts the power balance between citizens and political elites in the favor of the former.

In what follows, I will argue that this institution can actually work the opposite way. The optional referendum can be triggered by parties and this allows them to occupy the public debate and force attention to a specific topic. This contrasts to Magleby's view of direct democracy as an area where parties do not matter (1984). I argue that by redirecting public attention to certain issues, parties gain additional dominance over deliberation. Further, triggering a referendum allows parties to send costly signals to their constituencies and the wider electorate.

## 2.1 When the Leash Goes Slack: Parties Using Direct Democracy

That institutions of direct democracy may not only constrain parties but rather enable them to garner support has been noted earlier in the scholarly literature. Nicholson (2005) highlights the influence of ballot issues on presidential vote choice. Nicholson argues that ballot propositions prime voters and affect the way they assess candidates. Donovan et al. (2008) investigate Nicholson's claim further and show that voters in American states where there was a same-sex marriage ballot are on the one hand more likely to rate that issue as important and, on the other hand, voters who rate that issue as important were more likely to vote for Bush.

Meredith (2009) shows that school boards strategically schedule the referendums to achieve their desired outcome. This works because initiatives and referendums attract different parts of the citizenry than ordinary elections (Donovan and Smith, 2009). Smith and Tolbert (2004) argue that there are three principle goals a party may pursue. First, a party can support a ballot proposal to increase voter turnout. Second, a party can support an issue if it is a wedge issue for the other parties, and finally, a party can support a ballot measure to attract financial support from organized interests.

One can now adapt these arguments for the Swiss case. The first motivation, which is in line with Meredith (2009), only exists where elections and referendums are held on the same day.<sup>3</sup> This is not the case in Switzerland, thus the second and third motivation are of greater importance for this paper. I will focus especially on the second motivation, using referendums to increase salience on wedge issues.

## 2.2 Partisan Referendum and Electoral Competition

I define a partisan referendum as a referendum which is triggered for expected electoral benefits. In Switzerland every party and political organization can start to collect signatures against a bill as soon as it passes in both chambers and is published. If any group gathers 50,000 signatures the law is put up for a public vote and only becomes effective if a majority of voters support it. Referendums usually attract a lot of public attention, media coverage is extensive Kriesi and Trechsel (2008, 92) which in turn makes it an appealing feature to political parties (Linder, 2004).

---

<sup>3</sup>In Switzerland, there are two elections in four years (cantonal and national), but there are four referendum elections every year. Apart from replacement elections, referendums and initiatives are not voted on on the same day as the elections take place.

When is a party more likely to trigger a referendum? I offer the following conditions: first, the party is opposed to the bill under consideration; second, the party is very cohesive on the question concerned; third, the question forces competing parties to take a position which is not supported by all of the other party's followers; where the issue splits another party; finally, the bill is on a salient and preferably non-technical issue, over which people will have clearer preferences. The latter two parts ensure that there will be an electoral advantage from forcing a vote on that particular issue.

An illustrative example of this can be found in California in the 1996 presidential election, in which the GOP backed Proposition 209. This proposition was a divisive anti-affirmative measure which was supposed to decrease support of Clinton among middle class white men Smith and Tolbert (2004, 122-124). Proposition 209 did not create any divisiveness among Republicans, but did among Democrats. Affirmative action or racial issues in general are highly salient and non-technical issues. All together, Proposition 209 was exactly what the GOP could use to campaign indirectly against Clinton. It is thus also not surprising that Clinton avoided the issue during the campaign.

### 2.3 Swiss Politics

I first briefly discuss Swiss politics to enable some understanding which bills are most likely to attract such a partisan referendum. Swiss politics is dominated by five large parties; the Green Party (GPS), the Social Democrats (SP), the Christian Democrats (CVP), the Liberals (FDP), and the conservative Right Party (SVP). As most other european countries, Switzerland's political topography can be illustrated as a two-dimensional space (Kriesi et al, 2008). The two main dimensions are the economic and the cultural dimension (Kriesi, 2001; Leimgruber et al. 2010). The latter is sometimes referred to as GAL-TAN, the Green-Alternative-Liberal vs. Traditionalistic-Authoritative-Nationalistic conflict (Marks et al. 2006). Figure 1 shows estimated ideal points of legislators in the lower house.<sup>4</sup>

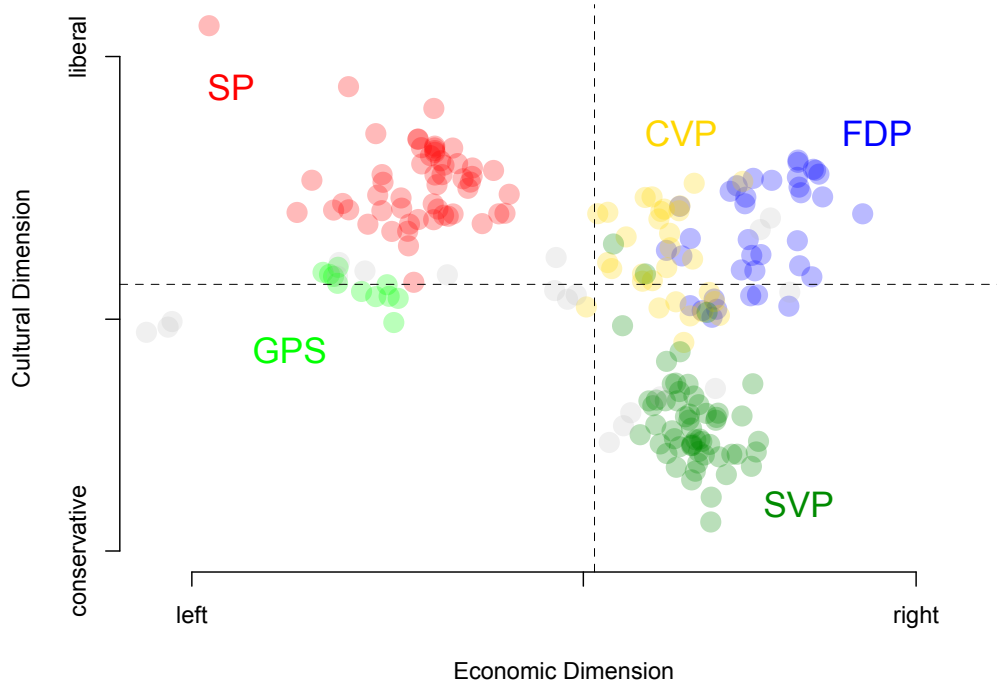
The five different colors identify the five major parties which together represent roughly 85% of the electorate. The first dimension ( $x$ -axis) is the economic dimension which separates the two left parties (SP and GPS) from the three *bourgeois* parties (CVP, FDP, SVP). The liberal party is slightly more extreme on the economic dimension than the christian democrats.

The second dimension, the cultural dimension, goes from conservative (bottom) to liberal

---

<sup>4</sup>Estimates are based on the 47th legislative period (2003-2005) of the lower house and were generated by employing Bayesian roll call data analysis (Clinton and Rivers, 2004). The exact specification and the imposed identifying assumptions can be found in the original paper (Leemann, 2009).

Figure 1: Ideal Points of Legislators in the Lower Chamber



(top) and distinguishes mainly the four parties, GPS, SP, CVP, and FDP from the far right (SVP). This dimension encompasses as diverse issues as gay rights, environmental questions, and entry into the European Union. Interestingly, there is no party occupying the lower left quadrant, which would be a economically left (labor oriented) but socially and culturally conservative party.

### 2.3.1 Wedge Issues

The main fault lines between the parties are either on the economic dimension, separating the left parties (GPS, SP) from the other parties and the cultural dimension, separating the far right (SVP) from the other parties. As argued above, issues useful for referendums need not only to divide the supporters of the other parties, but also be non-technical, salient, and non-dividing for the own party base.

For the left parties, social issues could be used this way. First, questions regarding social security and welfare can be reduced to simple questions of redistribution. At the same time,

the left electorate is very homogenous with regard to social issues. Finally, swing voters at the left border of the bourgeois parties can be attracted on some of these issues.

For the far right party one needs to focus on the cultural dimension. As can be seen in Figure 1, the cultural dimension is only exploited by the far right party. Again, issues which lend themselves to partisan referendums must be non-dividing for the triggering party. The right wing party has two issues it can use: immigration and European politics. The SVP takes a conservative position on both issues, fighting against immigration and accession into the EU (Kriesi, 2005b). At the same time these parties are divisive issues for the other two bourgeois parties (CVP, FDP). Both parties came under pressure from their constituency, the CVP often for their immigration policy and the FDP for their rather pro-EU politics.

### **2.3.2 Electoral Cycles, the Government's Influence in Decision Making, and Law Vetting in Committees**

Here I focus on two additional effects. One pertains to the origin (government, legislative committee, or single legislator) of a bill. I argue that bills coming from the government or from a committee are better vetted and therefore more likely to pass and avoid the referendum. If there is a referendum the government tends to weigh in on its own bills which increases the probability that it passes. A second argument is based on the electoral gains a party can achieve by triggering a referendum. Since ballot propositions generate media coverage, parties have an incentive to engage in direct democracy. This effect should be strongest the closer the next elections are.

*Origin of a bill:* A bill can either come from a single legislator, a group of likeminded lawmakers, the government (executive), or from a committee. The first two possibilities describe bills which are drafted by actors with similar preferences. The latter two options are distinct as both the government and the legislative committees are proportionally assigned to parties. A bill can only pass government or committee if three of the five major parties compromise. I argue that a bill originating in a committee will pass with higher probability because it has already secured a majority in committee and has been extended and adapted to deal with objections from other parties. The same logic holds when the government drafts a law. In Switzerland, four of the five major parties are in the executive.<sup>5</sup> In addition, the government (*Bundesrat*) has several advantages over parties and interest groups in the deliber-

---

<sup>5</sup>Currently there are five parties in the government and only four of them are considered big in this paper. But for the period which the data here covers (1995-2005), the four parties in government were the four largest parties.

ation process. The government controls the bureaucracy which in turn generates information about the expected consequences of new laws (Kriesi, 2009; Trechsel and Sciarini, 1998b). The government also enjoys a high level of trust and it can be shown that citizens trusting the government tend to follow their vote recommendation to a higher degree Kriesi (2005a, 143-153). Laws from the government are well balanced as the government does not engage in position taking since the government is mostly policy oriented. It is important to note that the Swiss government is reelected by the legislature every four years and is highly sheltered from any electoral pressures (Lijphart, 1999; Steiner, 1974). The legislature hardly ever changes the partisan make up of the government. In over 150 years, the legislative body only twice did not re-elect a federal minister (Klöti, 2004; Linder, 1999), its motivation lies in the law itself. Together with the high trust of citizens in the government, I argue that a government drafted law that enjoys more popular support is more likely to be adopted.

*Electoral Cycle:* Apart from the issue area, I expect that parties are more likely to trigger referendums in the run-up to an election. Note, while this is similar to Meredith's (2009) claim, the underlying mechanism is different. Meredith argues that ballots attract different types of voters and so scheduling a vote at the same time as an election, will change the likely median voter and therefore the outcome. I argue that scheduling votes in the run-up to elections allows parties to take positions and send a costly signal to their constituents that they *fight* for their interests.<sup>6</sup> Triggering a referendum also brings a lot of public attention and extensive media coverage. Since political advertising is prohibited on TV or radio, this is one way to access mass-media. I therefore argue, that *ceteris paribus*, referendums are more likely closer to elections.

To facilitate the arguments presented, I will list the different hypotheses which are tested in section 5.

*H1: Potential opposition parties are more likely to trigger a referendum if they are unified.*

*H2: The closer upcoming elections are, the higher is the expected electoral payoff for parties to trigger a referendum.*

*H3: Specific issues are far more likely to attract referendums. Laws on social issues, the European Union, and immigration attract more referendums.*

---

<sup>6</sup>To trigger a referendum a party needs to collect 50,000 signatures in 100 days. This first step is already costly, but the main cost factor is the campaign the party has to run. Members of the legislature are expected to appear in town hall meetings (*Podiumsdiskussionen*) which forces them to contribute a lot of time to the campaign. These two elements make it clear that such a signal is costly.

In the next section, I present an original data set which I enables me to test these hypotheses. The empirical model and its formal underpinnings are presented in section 4. Section 5 presents the results, and section 6 concludes.

### 3 Data

This paper employs an original data set based on 426 bill proposals and laws. I coded all parliamentary initiatives and motions which could potentially lead to a law.<sup>7</sup> I also scanned all bills and traced them back to their origins to ensure that I am not missing any legislative acts. I use as starting point Sciarini and Nicolet's (2005) database of all bills adopted between 1995 and 2005 subject to a non-required referendum. I selected those for which I could identify in the message submitted by the government, that it addressed a particular motion adopted by parliament. This allowed me to link a specific bill with its original motion. In addition, I also included in this dataset all motions which were rejected by parliament. Finally, I added all parliamentary initiatives voted upon between 1995 and 2005. For this (and other variables discussed below) I used a dataset containing roll call votes from the lower house for a period from December 3, 1996 to October 6, 2005 (45th, 46th, and part of the 47th legislative period).

#### 3.1 The Variables

For each bill, a number of variables was coded. First, I coded the four possible *outcomes* that can occur; a bill proposal can be rejected on the floor or be pulled back by its drafter ( $y_1$ ); a bill can be passed by the legislative and become law ( $y_2$ ); a bill can also be passed and then be subject to a referendum in which it either passes ( $y_4$ ) or not ( $y_3$ ). The model, explained in section 4, allows me to predict these four outcomes. A full table with all outcome and predictor variables can be found on the next page (Table 1).

Based on searches of the law data base and the verbatim records one could identify the *proposer*. If the proposal was submitted by an entire committee, I also checked records to see if a single member can be attributed with being the originator. Based on the electronic roll call data one can also record the individual vote behavior.<sup>8</sup> This allows me to code when parties were unified in their *opposition* to a specific bill. If more than three quarters of a party oppose a bill, I coded that party as opposing the bill.

---

<sup>7</sup>Parliamentary initiatives lead to bills elaborated without government intervention and are adopted by the two chambers, while motions, if adopted by both chambers, request from the government a law proposal.

<sup>8</sup>See here for roll call data and a description of it (<http://www.smartmonitor-database.ch>).

In addition the Smartmonitor data set contains the issue areas as they were categorized by the parliamentary services.<sup>9</sup> This variable will prove crucial as it allows one to identify which bills are from policy areas that should provide attractive platforms for various parties as a basis for referendums.

### 3.2 An Ideology Measure

As will become clear in section 4, we need a measure for the ideological position of a bill. This measure is central to evaluate early positive models of the referendum. The ideological position of a law is measured by taking a weighted average of the *yea*-votes a bill receives. If all Social Democrats and all green MPs vote for a law, but no other MP, I locate the bill exactly in between the position of the Social Democrats and the Greens. If only half of the members of the Green Party support it, we weight the Green ideal point by  $\frac{1}{2}$  and the Social Democrat’s ideal point by 1.

I measure ideological distance (how extreme a bill is) as the absolute value of the distance to the spatial mean of the parliament. The ideal points were estimated based on roll-call votes from the 47th legislative period, Bayesian ideal point estimation was used (Clinton, Jackman and Rivers, 2004). This measure is crucial since it is necessary for a basic model in which legislators only have policy-related goals.

Formally, I denote the ideal point of the parties as  $\theta_i$ , where  $i \in (\text{GPS}, \text{SPS}, \text{CVP}, \text{FDP}, \text{SVP})$ . Note,  $\theta_i$  is a vector with two elements denoting the ideal point’s  $x$ -coordinate and  $y$ -coordinate. The degree of approval of a certain party is  $A_i$ , where this is nothing else than the number of *yea* votes divided by the number of all votes. The ideological position of a the  $j^{\text{th}}$  bill –  $\delta_j$  – is then:

$$\delta_j = \frac{\sum_i \theta_i \cdot A_i}{\sum_i A_i} \tag{1}$$

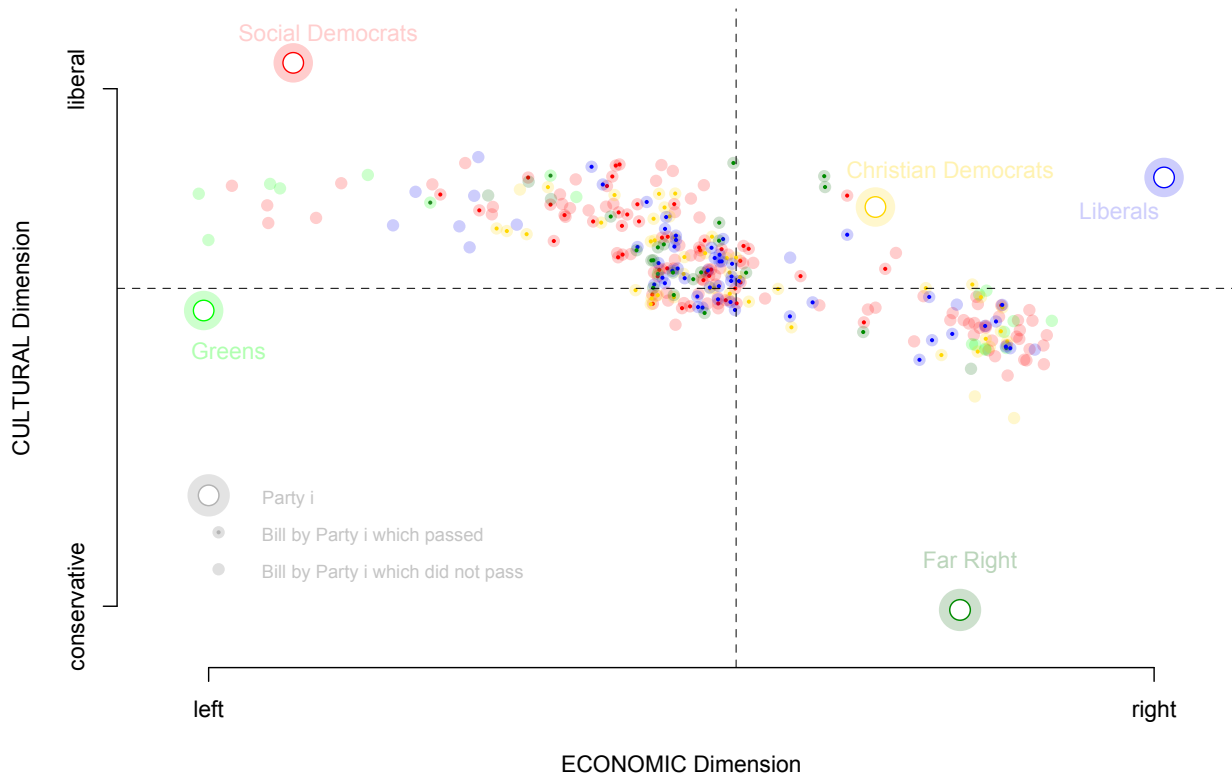
Squaring the two elements of  $\delta_j$  and tacking the square root of the sum gives the distance of the  $j^{\text{th}}$  law to the mean ideological point in the policy space. The larger the distance, the more extreme a bill. For any given bill there are several votes. The content of a PI changes during the voting process due to the possibility of amendments. I therefore took the final vote (*Gesamtabstimmung* or *Schlussabstimmung*).

---

<sup>9</sup>According to Smartmonitor the issues for bills from before 2000 were classified using an automated coding procedure by the smartmonitor database operators. This might add some noise to the issue measures.

The next figure illustrates the location of the five major parties as well as the location of all bills in the data set. The dark dots indicate those bills which passed the lower house.

Figure 2: Ideal Points of the Five Big Parties and the Estimated Bill Locations



*Note:* The size of the party icon is roughly proportional to its size. The dots with a dark center represent laws that passed.

The next plot shows the bills which attracted a referendum vote and also which laws were rejected by the citizenry. The grey dots are laws that either did not pass or did not provoke a referendum. The purple dots are bills which face a referendum vote. The dark dots indicate those bills where the people objected to a new law.

Figure 3: Estimated Bill Locations and Outcomes

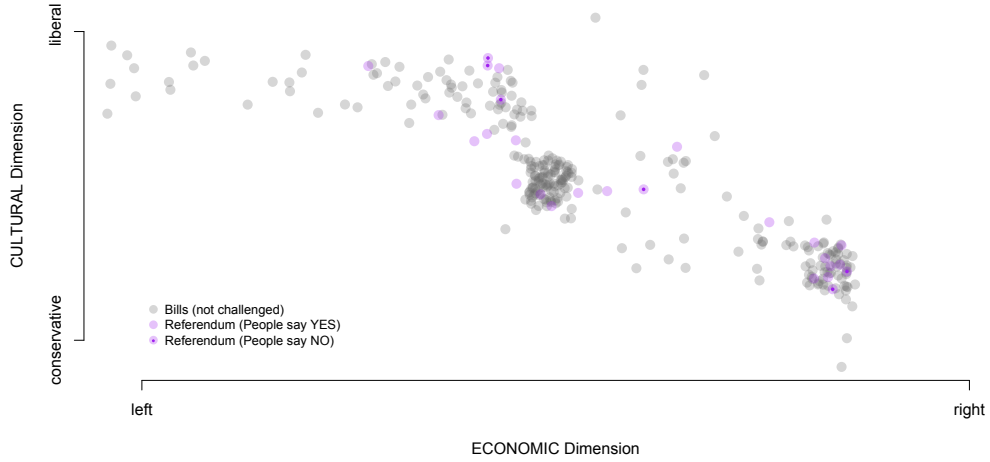


Table 1: Descriptive Statistics

Variable	Description	Type	n	min	max	$\bar{x}$	modal/sd(x)
y <sub>1</sub>	Law does not pass legisl.	outcome	426	0	1	0.37	0
y <sub>2</sub>	Law passes w/o referendum	outcome	426	0	1	0.55	1
y <sub>3</sub>	Referendum; people say no	outcome	426	0	1	0.02	0
y <sub>4</sub>	Referendum; people say yes	outcome	426	0	1	0.24	0
Distance	D. from mean legislator	predictor	426	0.13	1.06	0.40	0.29
Government	Law proposed by government	predictor	426	0	1	0.19	0
GPS	Law proposed by GPS	predictor	426	0	1	0.06	0
SP	Law proposed by SP	predictor	426	0	1	0.29	0
CVP	Law proposed by CVP	predictor	426	0	1	0.19	0
FDP	Law proposed by FDP	predictor	426	0	1	0.22	0
SVP	Law proposed by SVP	predictor	426	0	1	0.12	0
OP_GPS	GPS opposed to law	predictor	426	0	1	0.20	0
OP_SP	SP opposed to law	predictor	426	0	1	0.18	0
OP_CVP	CVP opposed to law	predictor	426	0	1	0.14	0
OP_FDP	FDP opposed to law	predictor	426	0	1	0.16	0
OP_SVP	SVP opposed to law	predictor	426	0	1	0.26	0
Vvoteyear	Vote in an election year	predictor	426	0	1	0.37	0
Vvoteyear 1	Vote 1 year before election year	predictor	426	0	1	0.26	0
Vvoteyear 2	Vote 2 years before election year	predictor	426	0	1	0.21	0
Vvoteyear 3	Vote 3 years before election year	predictor	426	0	1	0.15	0
Time till Election	Months till next election	predictor	426	0	46	20.08	14.62
Social	Law touches on social issue	predictor	426	0	1	0.19	0
Europe	Law touches on Europe issue	predictor	426	0	1	0.03	0
Immigration	Law touches on immigration issue	predictor	426	0	1	0.05	0

### 3.2.1 Imperfect Measure

This measure is meant to capture how extreme a bill is and therefore I average by party position, weighted by in-party vote share. But this relies on several assumptions. First, the two dimensional structure is adequate and second, votes are cast in a sincere way.

The ideal points of the parties are based on a Bayesian ideal point analysis which requires identifying assumptions. One of these is that the variance of the ideal points in both dimensions is 1. But this means that by assumption the two dimensions are assigned equal weight. That is, the ideological measure is based on the distance and both dimensions, cultural and economic, enter with equal weight which might bias the measure. If for example, the measure over-weights the cultural dimension, I might ascribe too much extremism to bills that are only supported by the far right. However, given the conclusions in this paper I believe that this potential bias does not influence the results.

The second potential bias comes from the sincerity assumption. If legislators are casting sophisticated votes, we should not be using their voting behavior as an indicator of the ideological preferences. The ideal points were generated by focusing only on final votes since here the sophisticated and the sincere choice should be equivalent (Clinton, 2007). But in the spirit of this paper, I argue that no legislator should have any incentive to misrepresent his or her vote in the final vote because the referendum might constitute the final stage. Note, that sincerity is a standard assumption in many models using legislative votes. There is no incentive to provoke a referendum by voting yes to an opposed bill. That would mean that a legislator would support a law in parliament which she would then critique in the aftermath for her electoral advantage. Votes on bills are public and are usually reported. The other possibility of mis-representation would be that a legislator supports a bill, but votes against it. Again, it is hard to imagine a situation in which such behavior would be beneficial to the legislator. I am therefore less worried about sophisticated voting and its distortions for our measure.

## 4 Model and Method

The importance of the strategic nature of interactions among political actors due to referendums became clear in a series of game-theoretic studies (e.g., Romer and Rosenthal, 1978; Romer and Rosenthal, 1979*b*; Denzau, Mackay, and Weaver, 1981; Steunenber, 1992; Gerber, 1996; Matsusaka and McCarty, 2001; Hug and Tsebelis, 2002; Hug, 2004; Kessler, 2005; Besley

and Coate, 2008). All these studies, modeling the interactions among various political actors, highlight that to assess the effect of referendums one needs to take into account the strategic nature of these interactions. This section draws heavily from Hug and Leemann (2010).

At the empirical level, these theoretical models have mostly informed studies on the political consequences of referendums (e.g., Gerber, 1996; Kirchgässner, Feld, and Savioz, 1999; Matsusaka, 2004; Hug, 2010). Hence, they relied mostly on comparative static analyses of the theoretical models mentioned above to compare policy outcomes between units with and without referendums. Given the focus on the final policy outcome, proceeding like this is not problematic, but it implies black-boxing what has happened during the strategic interactions leading to the policy outcome.

Empirical studies dealing with particular decisions, e.g., the decision to launch a referendum (e.g., Trechsel and Sciarini, 1998*a*; Closa, 2008)<sup>10</sup> or the decision by voters (e.g., Gamble, 1997; Frey and Goette, 1998; Donovan and Bowler, 1998), are hampered, however, when they fail to take the strategic context into account. For instance, for the latter studies Gerber and Hug (1999) show that focusing on passage rates of particular referendums cannot inform us about the policy consequences of referendums, simply because such studies neglect the strategic context.

Consequently, to understand the full implications, of referendum institutions one needs both theoretically informed models and also empirical models that reflect the strategic interactions concerned. In what follows, we propose such an empirical model relying on a theoretical model covering different types of referendum institutions. This will allow us to assess what factors influence the decisions at the various stages of decision-making leading, possibly, to a referendum, while taking into account the strategic nature of the interactions.

## 4.1 The Structure

The assumed theoretical structure rests on a model proposed by Hug (2004, 323-326) that models the interactions among three players. The first player (henceforth proposer) decides to adopt a certain law or not to adopt it. Should the law be adopted the second player (henceforth opposition) decides whether to call for a referendum or not. If the second player does not trigger a referendum the new law becomes effective. Should player 2 trigger a referendum, the third player (henceforth people) will be asked in a referendum if she wants the new law

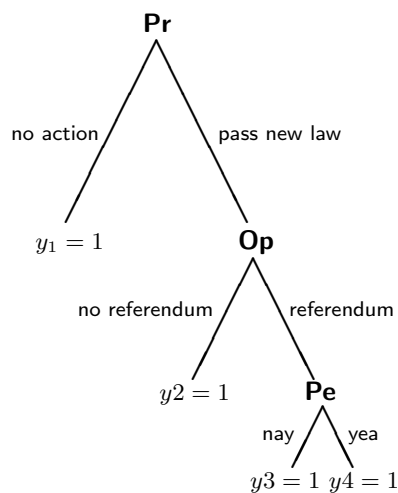
---

<sup>10</sup>Finke and König's (2009) study is a notable exception, since they adopt a quantal response model to address the question which countries decided to launch a referendum on the European Union's constitutional treaty.

or if she does not want it.

Player 1 in this model resembles a governmental coalition which coalesces for a specific law. The opposition (player 2) is in the Swiss case not a well-established group of parties or interest groups but rather a coalition of parties and interest groups that are opposed to a specific bill and have to decide if they want to fight it or not. Player 3 is the people. The structure of the game can be displayed as follows:

Figure 4: Underlying Formal Theoretical Model



*Notes:* Game tree of the theoretical model. **Pr** is the proposing party, **Op** is the opposing party, and **Pe** are the people. There are four possible outcomes, denoted by 1, 2, 3, and 4

The structure of the game is displayed in Figure 4. Player 1 in this model resembles a governmental coalition which coalesces for a specific law. The opposition (player 2) is in the Swiss case not a well-established group of parties or interest groups but rather a coalition of parties and interest groups that are opposed to a specific bill and have to decide if they want to fight it or not. Player 3 are the people.

## 4.2 The Empirical Model

Quantitative empirical testing of formal theoretical models is a distinct endeavor. On the one hand, statistical methods assume conditional independence of the observations. On the other hand, hypotheses born out of a formal model often imply strategic dependence (Hall, 2003).

Here we will only mention two issues. First, the assumed strategic nature of the data generating process leads to statistically *dependent* observations. To take into account the strategic nature, we need to rely on nested models. A second potential problem is that comparative statics usually relies on some form of (generalized) linear model which in general assumes monotonic effects. This assumption does not have to hold for data generating processes that are strategic in their nature (e.g., Signorino, 1999*b*, 286-288).

#### 4.2.1 Quantal Response Equilibria

This framework was first developed to analyze experimental data (McKelvey and Palfrey, 1995, 1996, 1998). A myriad of experiments had been carried out in which participants were asked to play specific games (e.g. divide the dollar). The theoretical prediction is that everyone should play such that her actions maximize her utility. Often scholars did, however, not observe results perfectly in line with predictions based on the Nash equilibrium. This resulted in an empirical puzzle.

The notion of *bounded rationality* informed many of the proposed solutions to this puzzle. If an actor faces a non-rational opponent, playing the game as informed by Nash's (1950, 1951) best response correspondence might not be the best strategy. These two motivations led McKelvey and Palfrey (1995) to develop an equilibrium refinement that allows for deviations from the strict Nash equilibrium predictions, the *quantal response equilibrium*.

The traditional prediction is that a player will always pick action  $a$  over action  $b$  if the utility of  $a$  is greater than the utility of  $b$  ( $U_a \geq U_b$ ). McKelvey and Palfrey (1995) instead predict that if  $U_a \geq U_b$ , the player has a higher likelihood of choosing  $a$  than  $b$ . The  $y$ -axis displays the predicted probability of a player choosing action  $a$ . The  $x$ -axis displays the utility for a player from action  $a$ . The different curves in the right plot represent different error variances. Note that since the data stems from experimental research in McKelvey and Palfrey's (1995) work, the utility (or, more precisely, the payoff) is known to the analyst. The probability is a function of the difference of the two utilities. The quantal response equilibrium (QRE) allows for players making mistakes, players misperceiving the incentives and for not completely rational behavior. As one would expect, this model is to a far greater extent able to account for experimental results (McKelvey and Palfrey, 1998, 20).

McKelvey and Palfrey (1995, 1996, 1998) assume that players make small mistakes more often than large mistakes. Depending on the assumption of the error, one can derive a solution concept, which resembles common econometric models (random utility models).

If a player can choose among two actions ( $a$ ,  $b$ ) and makes mistakes resembling a standard logistic function, the player's probability of choosing  $a$  is  $(1 + e^{\lambda(-U_a+U_b)})^{-1}$ . This is the logit quantal response model.<sup>11</sup>

The graph shows the difference of the two equilibrium predictions. The left plot is the classic Nash equilibrium prediction where the player chooses  $a$  with certainty or does not choose  $a$ . The bottom plot shows the predictions of the LQRE where the probability of choosing  $a$  is a smooth function which increases in  $U(a)$ . Each curve represents a different size of error on the part of the decision maker. The steepest curve (dashed dark purple line) is for a situation in which the error is small compared to the utility.<sup>12</sup>

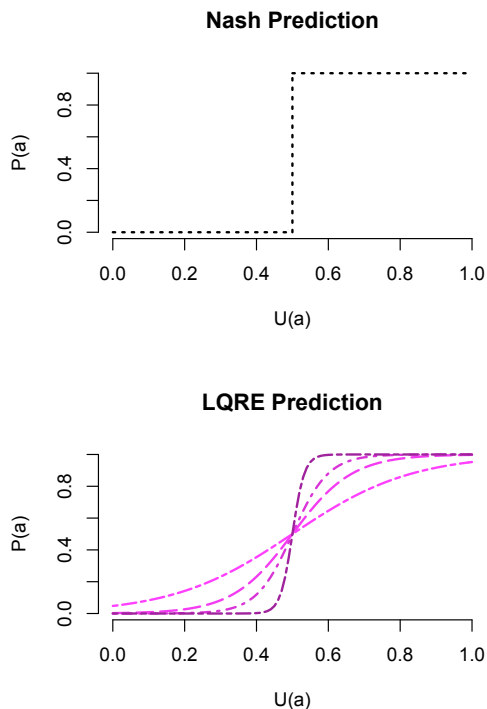


Figure 5: Illustration Quantal Response Models

### Observational Data and LQRE

Signorino (1999b) used this framework to analyze formal theories of international relations and thereby first employed it to analyze observational data. Contrary to experimental settings where the payoffs are known (since the researcher assigns, for example, a monetary incentive), we do not observe the utility of a player. Rather, the utility is assumed to be a function of observed variables, and the contribution to the utility function has to be estimated.

Signorino (1999b, 2003) showed how appropriate statistical models can be derived to test formal theoretical models. This approach allows scholars to test if certain variables contribute

<sup>11</sup>The strategic element enters when one assumes an extensive form game. In such a situation, player 1 moves first and then player 2 moves. Player 1 will take player 2's expected actions into account. This means, that player one's utility from picking action  $a$  will be a function of player two's probability to choose  $A$  or  $B$ . In the above expression,  $U_a$  is then the expected utility which will be a function of the probability of player two choosing  $A$  and the probability of choosing  $B$ .

<sup>12</sup>In the QRE this corresponds to a high  $\lambda$  which is a high degree of rationality.  $\lambda$  is in experimental settings the parameter which researchers seek to estimate.

to an actor’s utility or not. This is similar to any decision model and follows closely the random utility framework. The contribution of Signorino (1999*b*, 2003) lies in the way he provides tools for analysts to incorporate the strategic data generating process. This direct approach is well suited to test the empirical implications of theoretical models.

Building on Signorino’s (1999*b*, 2003) work, Hug and Leemann (2010) derive a specific statistical model to test whether certain variables contribute to the utility of the players in our formal model. We build on these results and present the exact econometric derivation in the appendix (section 7).<sup>13</sup>

## 5 Results

### 5.1 Basic Model

In a first step, I estimate a baseline model. The base model includes in the first stage (parliament, player 1) dummies for five parties and laws from committees and the government form the base category. I also include the distance measure here and expect to see a negative relationship between distance and propensity to pass. At the second node, the opposition, I included a dummy to control for laws coming from the government and the ideological distance measure. Finally, at the last stage, the people, I only use the distance measure.

The predictions from the classic formal models (e.g. Romer and Rosenthal 1979) is that ideological distance should decrease the probability of passage, but increase the probability of a referendum if it passes. Finally, more extreme bills are less likely to pass if put up for a referendum.

In Table 2, I present the estimation results for the basic model along with the standard errors and p-values. At the proposing stage, one finds a significant effect for ideological distance; the more extreme a bill is, the less likely it is to pass. Most importantly, I find a relationship between ideological distance and actions on all three levels as theoretically expected. More extreme laws are less likely to pass the legislative stage; if they pass, they are more likely to provoke a referendum; and, if the law is put to vote, it is less likely to pass.

The party dummies on the first stage allow us to compare relative passage chances for parties. Interestingly, when controlling for ideological distance, laws originating from the government are less likely to pass. At the opposition stage, I do not find any significant effect

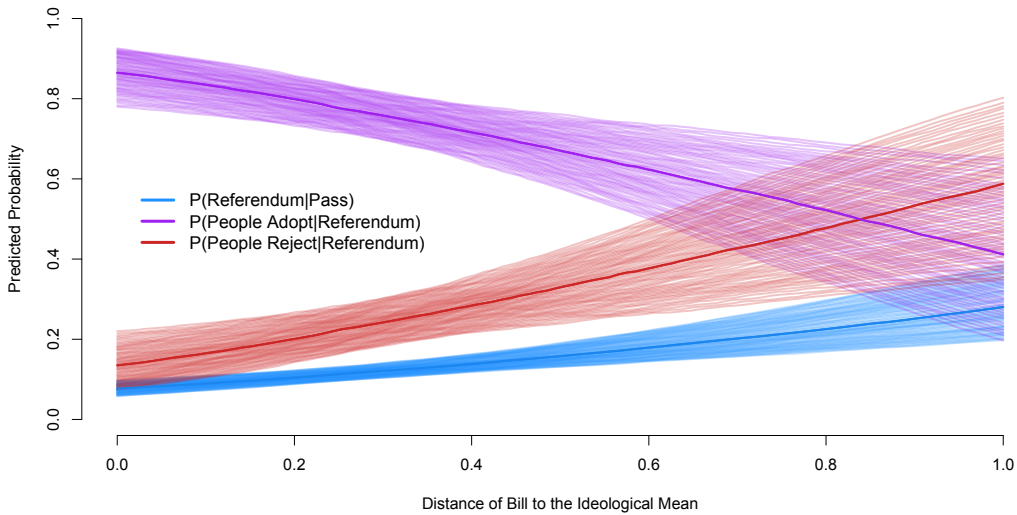
---

<sup>13</sup>Models were coded in R and maximization was carried out with the `optim()` function. Code and specifics are available upon request.

Table 2: Estimation Results Basic Model

	Coefficient	StdErrs	p-Value
<b>constant<sub>pr</sub></b>	2.9	3.99	0.47
<b>GPS</b>	0.53	0.64	0.41
<b>SP</b>	1.57	0.45	0.00
<b>CVP</b>	1.23	0.40	0.00
<b>FDP</b>	2.11	0.44	0.00
<b>SVP</b>	1.87	0.47	0.00
<b>Distance</b>	-13.54	5.82	0.02
<b>constant<sub>op</sub></b>	2.06	0.23	0.00
<b>Distance</b>	1.19	0.56	0.03
<b>Government</b>	0.47	0.32	0.14
<b>constant<sub>pe</sub></b>	1.59	0.47	0.00
<b>Distance</b>	-1.95	0.78	0.01
ll= -264.42	AIC= 554.84	BIC= 607.55	N= 426

Figure 6: Simulation Based Probabilities



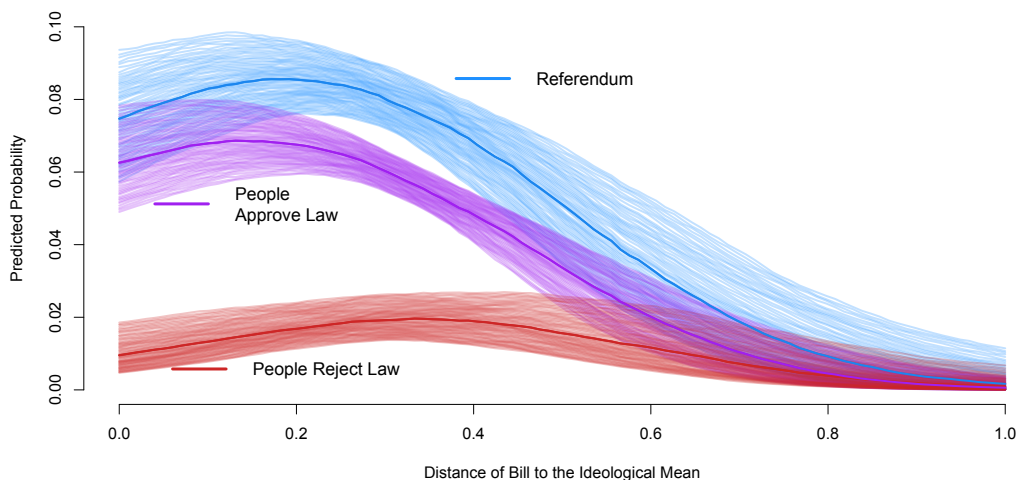
for governmental involvement in drafting a bill once one controls for ideological distance. At the final node, the people, we find that more extreme bills are more likely to be rejected.

In Figure 6 I illustrate the relationship between different probabilities and the ideological distance of a bill to the two-dimensional mean. Larger values on the  $x$ -axis indicate more extreme bills. In this figure, I present conditional statements. If a bill passes the legislative stage, one can see that the probability of a referendum is strictly increasing in distance (**blue**).

Given that a bill passes and a referendum is triggered, I can illustrate the probability that the people accept (**purple**) or reject it (**red**). To illustrate the uncertainty, I also plot 60 additional prediction functions.<sup>14</sup> To generate these predicted probabilities it was assumed that the bill was introduced by the social democrats (SP).

In Figure 7 I show unconditional statements. Again, we are looking at predicted probabilities for a bill, where I assume that it was introduced by the social democrats. Note how low the probability of a referendum is in general. This can be seen already in the raw data, where only 33 out of 426 laws faced a plebiscite.

Figure 7: Simulation Based Probabilities



The probability of a referendum (**blue**) is a non-monotonic function in distance. That is because there are two contrary forces at work; the more extreme a bill is, the less likely to pass. But if it passes, it is more likely to be subject to a referendum. This explains why one finds a non-monotonic relationship between ideological distance and the probability of a referendum.

The **purple** line illustrates the relationship between ideological distance and the probability that the citizens will vote yes on a new law and accept it. The **red** line shows the probability that a law will fail in a referendum vote. For low values of ideological distance this is an increasing function, as it becomes more extreme, it is more likely to be rejected in

<sup>14</sup>These 60 lines do not represent a 95% confidence interval as they are representing the 60% of draws which are closest to the mean effects. Rather they give a sense of uncertainty in the estimates.

a vote. But for large values of ideological distance the relationship becomes negative. The more extreme the bill, the less likely that it will fail in a plebiscite. The reason is not that the people are more likely to say yes, but that such a bill is less likely to ever pass the floor.

## 5.2 Partisan Patterns

Are certain parties more likely to trigger referenda? From the ideological positions of the parties one would expect to find either the far right party (SVP) in opposition to a law or the social democrats (SP) together with the greens (GPS). The former should be laws that are divisive on the second dimension (cultural dimension) and the latter should be divisive on the economic dimension.

Table 3: Party Effects

	Coefficient	SE	p-Value
<b>constant<sub>pr</sub></b>	12.22	2.10	0.00
<b>GPS</b>	0.34	0.69	0.62
<b>SP</b>	1.57	0.51	0.00
<b>CVP</b>	0.88	0.45	0.05
<b>FDP</b>	2.21	0.49	0.00
<b>SVP</b>	2.39	0.56	0.00
<b>Distance</b>	-13.64	6.91	0.05
<b>constant<sub>op</sub></b>	1.75	0.12	0.00
<b>Distance</b>	0.28	0.45	0.53
<b>Opposition SP</b>	0.06	0.04	0.18
<b>Opposition GPS</b>	0.09	0.04	0.04
<b>Opposition SVP</b>	0.13	0.04	0.00
<b>constant<sub>pe</sub></b>	0.87	0.38	0.02
<b>Distance</b>	0.54	0.77	0.49
<b>Government</b>	0.40	0.12	0.00
ll= -253.51	AIC= 539.02	BIC= 603.89	N= 426

To see if these three parties are in any way more likely to impose a referendum vote on a new bill, I add partisan indicators to the second node in the model. I use the model from Table 2, but remove the variable for government origin since I will now focus on the opposition. Table 3 shows the estimation results. Comparing the first node estimation results from Table 3 with the results from Table 2 there are hardly any differences. The coefficient for ideological distance is almost exactly the same and there is only a change in the coefficient for CVP, which decreases by half while its standard error remains unchanged.

At the second node there are four explanatory variables: the ideological distance and three party dummies indicating whether the parties are in opposition to a bill or not. Once

controlling for the three potential oppositional groups, ideological distance itself loses its significant effect. This null finding is not stable and depends on the specification of the model.<sup>15</sup> I refrain from claiming that the ideological position does not matter.

I find significant effects for SVP and GPS which means that, if the Green Party or the far right are overwhelmingly opposed to a bill, that increases the propensity that there will be a referendum. I do not find a significant effect for the Social Democratic Party (SP). Note however, that the Green Party (GPS) and the Social Democratic Party (SP) have a similar ideological position and often vote together. If one collapses the two dummies to generate a general indicator for left opposition, there is a clear effect (see appendix, Table 6).

Finally, turning our attention to the last node, one can look at the decision of the voters whether to accept or reject a new law. Here, I include a variable for the governmental effect to control for the government's advantage in the public deliberation phase. I find that while ideological distance loses its significant impact, laws that were drafted by the government and enjoy its full support, are significantly more likely to be accepted by the citizens.

### 5.3 Temporal Effects and Hot Issues

To test whether there is any general temporal effect, I include a variable that measures time. There are two measures; dummies for the year in the four-year cycle in which the final vote takes place. The second is the number of months from the final vote till the next election. Table 4 shows the results for a model in which one uses time to the next elections measured in months.

While the effects that I found in Tables 2 & 3 do hold up in this specification, the standard errors increase. Especially at the second node where I include an additional explanatory variable (`Time till Election`) the  $p$ -values go from 0.04 to 0.13 and from 0.00 to 0.07. The relevant point here is that one does not find any significant temporal effect.

I also used alternative specification such as including a dummy variable for election years or including time and the squared measure of time to allow for a more flexible functional form (see Tables 7&8 in the appendix). Based on these results one can say that there is no empirical support for any temporal effects. There is no change in propensities for triggering a referendum based on the proximity of the next elections.

---

<sup>15</sup>This seems especially true for the final stage and whether one includes the government dummy or not. Also, it has to be taken into account that the oppositional dummies are based on the same final votes as the measure for ideological distance, e.g. the variables `distance` and `op_svp` have a correlation coefficient of 0.59.

Table 4: Time Effects

	Coefficient	StdErrs	p-Value
<code>constant<sub>pr</sub></code>	6.49	5.22	0.21
<code>GPS</code>	0.32	0.69	0.64
<code>SP</code>	1.52	0.51	0.00
<code>CVP</code>	0.86	0.44	0.05
<code>FDP</code>	2.16	0.49	0.00
<code>SVP</code>	2.34	0.55	0.00
<code>distance</code>	-9.95	6.19	0.11
<code>constant<sub>op</sub></code>	1.70	0.16	0.00
<code>Opposition GPS</code>	0.11	0.07	0.13
<code>Opposition SP</code>	0.08	0.06	0.21
<code>Opposition SVP</code>	0.16	0.09	0.07
<code>distance</code>	0.09	0.45	0.85
<code>Time till Election</code>	0.02	0.02	0.34
<code>constant<sub>op</sub></code>	0.73	0.45	0.10
<code>distance</code>	-0.44	1.26	0.73
<code>Government</code>	0.71	0.36	0.05
ll= -253.46	AIC= 540.92	BIC= 609.85	N= 426

The second question pertained to *hot* issues which are more likely to provoke referendums than others. As argued in the theoretical section, I believe that given complexity and the ideological position of parties, there should be a significant impact once laws pertain to immigration, social security, or the relationship to the European Union.

In Table 5, I find estimation results which re-iterate all the main findings so far. Here, there is only empirical support for immigration. Bills which touch on immigration issues are more likely to provoke a referendum and there is a clear and significant effect for the far right party (SVP) and the greens. Based on the data and the models, there is empirical support for the issue hypothesis.

#### 5.4 Qualifying Remarks

There are three main findings we present here. First, parties matter. When potential opposition parties vote in a very unified manner it is more likely that we will observe a referendum. Second, there is no relationship in this data set between the election date and the probability of a referendum. Finally, issue areas matter as immigration issues are more likely to attract a plebiscite than other topics.

For the first finding: parties matter. This result illustrates that it matters which party is in opposition to a bill even when one controls for issue and for the extremity of the bill.

Table 5: Hot Topics

	Coefficient	StdErrs	p-Value
<b>constant<sub>pr</sub></b>	-1.5	0.78	0.06
<b>GPS</b>	-0.41	0.67	0.54
<b>SP</b>	0.64	0.44	0.14
<b>CVP</b>	0.25	0.40	0.52
<b>FDP</b>	1.41	0.41	0.00
<b>SVP</b>	1.68	0.48	0.00
<b>Distance</b>	-10.29	2.10	0.00
<b>constant<sub>op</sub></b>	2.16	0.27	0.00
<b>Opposition GPS</b>	0.46	0.21	0.03
<b>Opposition SP</b>	0.11	0.19	0.56
<b>Opposition SVP</b>	0.53	0.17	0.00
<b>Distance</b>	1.48	1.02	0.15
<b>Immigration</b>	0.71	0.36	0.05
<b>Europe</b>	0.54	0.50	0.28
<b>Social</b>	0.24	0.20	0.24
<b>constant<sub>pe</sub></b>	1.25	0.48	0.01
<b>Distance</b>	-1.87	1.17	0.11
<b>Government</b>	0.79	0.35	0.03
ll= -254.59	AIC= 547.18	BIC= 624.21	N= 426

There are two ways to read this. One can argue that this shows which parties are using the referendum more often or one can argue that this shows us, that only cohesive parties will be able to use direct democratic measures to further their goals. We side with the former since we only find the effect for the far right populist party (Kriesi et al. 2005).

The second finding is a non-finding. It is possible that parties fully anticipate the electorally induced temptation to trigger a referendum and anticipate this. If this were true, we would expect to see that parties submit less extreme bills. However, it is not this paper's intention to uncover the rationale of introducing a bill, but rather to understand how parties respond to bill proposals.

I find that immigration laws are especially likely to provoke a referendum. Given the topic's high salience we expect to see partisan behavior on this issue and that is what we find. But, it is not the case that the populist right wing party uses direct democracy for electoral gains. A close look at the cases under consideration reveals that in all observations either the green party or a pro-immigration group launched a referendum.<sup>16</sup> Close followers of Swiss politics might be less surprised as the only direction of policy change in immigration questions during the last two decades has been to tighten laws.

<sup>16</sup>The five votes are 525, 524, 519, 455, 454, and 417 (official identifier from the federal statistics office).

## 6 Conclusion

I have set out to do two things; first, I wanted to test the most common critiques of direct democracy. I tested whether the propensity of referendums is related to three main factors (H1: parties in opposition; H2: the electoral calendar; and H3: specific issue areas). Second, I show how one can successfully analyze data which is based on an overtly strategic data generating process.

The main assumption by proponents of direct democracy, but also by positivist scholars, is that the ideological position of the bill matters. I find that the estimates always have the theoretically expected direction (negative at node 1, positive at node 2, and negative at node 3), but do not always achieve statistical significance on conventional levels due to the low number of cases and correlation among other explanatory factors.

I do not find any temporal effects and only moderate partisan effects. In addition, immigration is a hot button issue in Swiss politics. But contrary to the expectation, it is not that the far right that uses direct democracy. It is possible that the relationship is more complex. If the far right can force the legislature with the referendum threat to accept more stringent immigration laws, one would expect to see left parties triggering referendums on immigration laws. However, the basic critique that parties enjoy heightened media attention and therefore trigger plebiscites too easily cannot be backed up empirically.

Finally, the significant party effects also provide no evidence for any normative shortcomings. The grand coalition in Switzerland has come under pressure in the nineties and especially among the non-left parties there has been considerable amounts of conflict. This is in line with the finding that the far right triggers referendums since it is often left out of compromises or refuses to compromise.

Despite the many claims of direct democracy being derailed, I do not find evidence for any such pathologies of the practice of direct democracy. The use of the direct democratic referendum institution is not dominated by the the electoral calendar, nor is it the case that parties trigger referendums on moderate bills just to engage in public debate. So far it seems that the owner is still walking the dog.

## References

- Besley, Timothy, and Stephen Coate. 2008. "Issue Unbundling via Citizens' Initiatives." *Quarterly Journal of Political Science* 3(4): 379–397.
- Broder, David S. 2000. *Democracy Derailed: The Initiative Movement and the Power of Money*. New York: Harcourt.
- Butler, David, and Austin Ranney, eds. 1994. *Referendums Around the World*. London: MacMillan.
- Clinton, Joshua. 2007. "Lawmaking and Roll Calls." *Journal of Politics* 69(2): 457–469.
- Clinton, Joshua, Simon Jackman, and Douglas Rivers. 2004. "The Statistical Analysis of Roll Call Data." *American Political Science Review* 98: 355–370.
- Closa, Montero Carlos. 2008. "Why Convene Referendums? Explaining Decisions in EU Constitutional Politics." *Journal of European Public Policy* 14(8): 1311 – 1332.
- Cronin, Thomas E. 1989. *Direct Democracy. The Politics of Initiative, Referendum, and Recall*. Cambridge: Harvard University Press.
- Denzau, Arthur, Robert Mackay, and Carolyn L. Weaver. 1981. "On the Initiative-Referendum Option and the Control of Monopoly Government." In *Tax and Expenditure Limitations*, ed. Helen F. Ladd, and T. Nicolaus Tideman. Washington: The Urban Institute Press pp. 191–222.
- Donovan, Todd, and Shaun Bowler. 1998. "Direct Democracy and Minority Rights: An Extension." *American Journal of Political Science* 42(3 July): 1020–1024.
- Donovan, Todd, Caroline J. Tolbert, and Daniel A. Smith. 2009. "Political Engagement, Mobilization, and Direct Democracy." *Public Opinion Quarterly* 73(1).
- Finke, Daniel, and Thomas König. 2009. "Why risk popular ratification failure? A comparative analysis of the choice of the ratification instrument in the 25 Member States of the EU." *Constitutional Political Economy* 20(3): 341–365.
- Frey, Bruno S., and Lorenz Goette. 1998. "Does the Popular Vote Destroy Civil Rights?" *American Journal of Political Science* 42(4): 1343–1348.
- Gamble, Barbara. 1997. "Putting Civil Rights to a Popular Vote." *American Journal of Political Science* 41(1): 245–269.
- Gerber, Elisabeth R. 1996. "Legislative Response to the Threat of Popular Initiatives." *American Journal of Political Science* 40(1): 99–128.
- Gerber, Elisabeth R. 1999. *The Populist Paradox: Interest Group Influence and the Promise of Direct Legislation*. Princeton: Princeton University Press.
- Gerber, Elisabeth R., and Simon Hug. 1999. *Minority Rights and Direct Legislation. Theory, Methods, and Evidence*. La Jolla: Department of Political Science, University of California, San Diego.
- Goebel, Thomas. 2002. *A Government by the People: Direct Democracy in America, 1890-1940*. Chapel Hill, NC: University of North Carolina Press.
- Hall, Peter. 2003. "Aligning Ontology and Methodology in Comparative Politics." In *Comparative Historical Analysis in the Social Sciences*. Cambridge: Cambridge University Press pp. 373–404.
- Hug, Simon. 2004. "Occurrence and Policy Consequences of Referendums. A Theoretical Model and Empirical Evidence." *Journal of Theoretical Politics* 16(3): 321–356.

- Hug, Simon. 2010. "Policy Consequences of Direct Legislation in the States. Theory, Empirical Models and Evidence." *Quality & Quantity* pp. 1–20.
- Hug, Simon, and George Tsebelis. 2002. "Veto Players and Referendums around the World." *Journal of Theoretical Politics* 14(4 (October)): 465–516.
- Hug, Simon, and Lucas Leemann. 2010. "Modeling the strategic interactions in representative democracies with referendums." *Presented at the Annual Meeting of the Midwest Political Science Association, Chicago* .
- John M. de Figueiredo, Chang Ho Ji La, and Thad Kousser. 2010. "Financing Direct Democracy: Revisiting the Research on Campaign Spending and Citizen Initiatives." *Duke Law Working Papers*. 50: 1–46.
- Kessler, Anke. 2005. "Representative versus Direct Democracy: The Role of Informational Asymmetries." *Public Choice* 122(January): 9.38.
- Kirchgässner, Gebhard, Lars P. Feld, and Marcel R. Savioz. 1999. *Die direkte Demokratie der Schweiz: Modern, erfolgreich, entwicklungs- und exportfähig*. Basel: Helbing und Lichtenhahn.
- Klöti, Ulrich. 2004. "The Government." In *Handbook of Swiss Politics*, ed. Hanspeter Kriesi Wolf Linder Ulrich Klöti, Peter Knoepfel, and Yannis Papadopoulos. Zürich: Neue Zürcher Zeitung.
- Kriesi, Hanspeter. 2001. "The Federal Parliament: The Limits of Institutional Reform." *West European Politics* 24(2): 59–76.
- Kriesi, Hanspeter. 2005a. *Direct Democratic Choice*. Maryland: Lexington Books.
- Kriesi, Hanspeter. 2009. "Sind Abstimmungsergebnisse käuflich?" *Demokratie als Leidenschaft. Planung, Entscheidung und Vollzug in der Schweizerischen Demokratie (Festschrift für Prof. Dr. Wolf Linder zum 65. Geburtstag)* Adrian Vatter, Fritz Sager and Frédéric Varone (eds.).
- Kriesi, Hanspeter, and Alexander H. Trechsel. 2008. *The Politics of Switzerland. Continuity and Change in a Consensus Democracy*. Cambridge University Press.
- Kriesi, Hanspeter, and Dominique Wisler. 1999. "The Impact of Social Movements on Political Institutions: A Comparison of the Introduction of Direct Legislation in Switzerland and the United States." In *How Social Movements Matter*, ed. McAdam Guigni, and Tilly. Minneapolis: University of Minnesota pp. 42–65.
- Kriesi, Hanspeter, Edgar Grande Romain Lachat Martin Dolezal Simon Bornschier, and Timotheus Frey. 2008. *West European Politics in the Age of Globalization*. Cambridge: Cambridge University Press.
- Kriesi, Hanspeter, Romain Lachat Peter Selb Simon Bornschier Marc Helbling. 2005b. *Der Aufstieg der SVP. Acht Kantone im Vergleich*. Zürich: Neue Zürcher Zeitung.
- Leemann, Lucas. 2009. "Catch me if you can. Recovering sophisticated voting in the lower house of Switzerland." *Presented at the Annual Meeting of the Midwest Political Science Association* .
- Leimgruber, Philipp, Dominik Hangartner, and Lucas Leemann. 2010. "Comparing Candidates and Citizens in the Ideological Space." *Swiss Political Science Review* 16(3): 499–531.
- Lijphart, Arend. 1999. *Patterns of Democracy. Government Forms and Performance in Thirty-Six Countries*. New Haven : Yale University Press.
- Linder, Wolf. 1999. *Schweizerische Demokratie*. Bern: Paul Haupt.

- Linder, Wolf. 2004. "Direct Democracy." In *Handbook of Swiss Politics*, ed. Hanspeter Kriesi Wolf Linder Ulrich Klöti, Peter Knoepfel, and Yannis Papadopoulos. Zürich: Neue Zürcher Zeitung.
- Magleby, David B. 1984. *Direct Legislation: Voting on Ballot Propositions in the United States*. Baltimore: The Johns Hopkins University Press.
- Marks, Gary, Liesbet Hooghe Moira Nelson, and Erica Edwards. 2006. "Party Competition and European Integration in the East and West: Different Structure, Same Causality." *Comparative Political Studies* 39(2): 155–175.
- Matususaka, John G. 2004. *For the Many or the Few. How the Initiative Process Changes American Government*. Chicago: Chicago University Press.
- Matususaka, John G., and Nolan M. McCarty. 2001. "Political Resource Allocation: The Benefits and Costs of Voter Initiatives." *Journal of Law, Economics, & Organization* 17(2 October): 413–448.
- Mayhew, David R. 1974. *Congress: The Electoral Connection*. New Haven: Yale University Press.
- McKelvey, Richard D., and Thomas R. Palfrey. 1995. "Quantal Response Equilibria for Normal Form Games." *Games and Economic Behavior* 10: 6–38.
- McKelvey, Richard D., and Thomas R. Palfrey. 1998. "Quantal Response Equilibria for Extensive Form Games." *Experimental Economics* 1: 9–41.
- Meredith, Marc. 2009. "The Strategic Timing of Direct Democracy." *Economics and Politics* 21(1): 159–177.
- Nash, John F. 1950. "Equilibrium Points in N-Person Games." *Proceedings of the National Academy of Sciences* 36(January): 48–49.
- Nash, John F. 1951. "Non-Cooperative Games." *Annals of Mathematics* 54(September): 286–295.
- Neidhart, Leonhard. 1970. *Plebiszit und pluralitäre Demokratie. Eine Analyse der Funktion des schweizerischen Gesetzesreferendums*. Francke Verlag Bern.
- Nicholson, Stephen. 2005. *Voting the Agenda: Candidates Elections and Ballot Propositions*. Princeton, NJ: Princeton University Press.
- Romer, Thomas, and Howard Rosenthal. 1978. "Political Resource Allocation, Controlled Agendas, and the Status Quo." *Public Choice* 33(4): 27–43.
- Romer, Thomas, and Howard Rosenthal. 1979a. "Bureaucrats Versus Voters: On the Political Economy of Resource Allocation by Direct Democracy." *The Quarterly Journal of Economics* 93(4): 563–587.
- Romer, Thomas, and Howard Rosenthal. 1979b. "Bureaucrats versus Voters: On the Political Economy of Resource Allocation by Direct Democracy." *Quarterly Journal of Economics* 93(4): 561–587.
- Sciarini, Pascal, and Sarah Nicolet. 2005. "Internationalization and Domestic Politics: Evidence from the Swiss Case." In *Contemporary Switzerland. Revisiting the Special Case*, ed. Hanspeter Kriesi, Peter Farago, Martin Kohli, and Milad Zarin-Nejadon. New York: Palgrave MacMillan,.
- Serdült, Uwe. 2007. "Direct Democracy in Switzerland and its Discontents." *Presented at the International Conference on Direct Democracy in Latin America, Argentina* .
- Signorino, Curtis S. 1999a. "Strategic Interaction and the Statistical Analysis of International Conflict." *American Political Science Review* 93: 279–297.

- Signorino, Curtis S. 1999b. "Strategic Interaction and the Statistical Analysis of International Conflict." *American Political Science Review* 93: 279–297.
- Signorino, Curtis S. 2003. "Structure and Uncertainty in Discrete Choice Models." *Political Analysis* 11: 316–344.
- Smartmonitor. 2010. "The Swiss Legislative Database."
- Smith, Daniel A., and Caroline J. Tolbert. 2004. *Educated by Initiative: The Effects of Direct Democracy on Citizens and Political Organizations in the American States*. Ann Arbor: The University of Michigan Press.
- Smith, Daniel A., and Dustin Fridkin. 2008. "Delegating Direct Democracy: Interparty Legislative Competition and the Adoption of the Initiative in the American States." *American Political Science Review* 102(3): 333–350.
- Steiner, Jürg. 1974. *Amicable Agreement Versus Majority Rule*. Chapel Hill: The University of North Carolina Press.
- Steunenberg, Bernard. 1992. "Referendum, Initiative, and Veto Power." *Kyklos* 45(4): 501–529.
- Stratmann, Thomas. 2005. "The Effectiveness of Money in Ballot Measure Campaigns." *Southern California Law Review* May.
- Stratmann, Thomas. 2006. "Is Spending More Potent for or against a Proposition? Evidence from Ballot Measures." *American Journal of Political Science* 50(3): 788–801.
- Todd Donovan, Caroline J. Tolbert, and Daniel A. Smith. 2008. "Priming Presidential Votes by Direct Democracy." *The Journal of Politics* 70(4): 1217–1231.
- Trechsel, Alexander, and Pascal Sciarini. 1998a. "Direct Democracy in Switzerland: Do Elites Matter?" *European Journal of Political Research* 33(1): 99–124.
- Trechsel, Alexander H., and Pascal Sciarini. 1998b. "Direct democracy in Switzerland: Do elites matter?" *European Journal of Political Research* 33: 99–124.
- Weyl, Walter. 1912. *The New Democracy: An Essay on Certain Political and Economic Tendencies in the United States*. New York: Macmillan.

## 7 Appendix

### 7.1 The Empirical Model

In part 4 we presented the formal model that is the foundation of this paper. A party or a group of parties decides to propose a new law. If the law is adopted the opponents decide whether to trigger a referendum and if so, the people eventually decide whether the proposed law is enacted or not.

There are three actors, the proposing coalition (**Pr**), the opposition (**Op**), and the people (**Pe**). We assume that these players will choose the action that yields the highest utility to them. Hence, the opposers will choose to trigger a referendum if the true utility ( $U^*$ ) of this is higher than from not triggering a referendum. Formally, this means that  $U_{Op}^*(\text{no referendum}) < U_{Op}^*(\text{referendum})$ . The decision of each player is either 0 (proposing no law; not calling for a referendum; saying no to the law) or 1 (proposing new law; calling for a referendum; saying yes to the law):

$$y_{Pr} = \begin{cases} 0 & \text{if } U_{Pr}^*(\text{no action}) \geq U_{Pr}^*(\text{new law}) \\ 1 & \text{if } U_{Pr}^*(\text{no action}) < U_{Pr}^*(\text{new law}) \end{cases}$$

$$y_{Op} = \begin{cases} 0 & \text{if } U_{Op}^*(\text{no referendum}) \geq U_{Op}^*(\text{referendum}) \\ 1 & \text{if } U_{Op}^*(\text{no referendum}) < U_{Op}^*(\text{referendum}) \end{cases}$$

$$y_{Pe} = \begin{cases} 0 & \text{if } U_{Pe}^*(\text{vote no}) \geq U_{Pe}^*(\text{vote yes}) \\ 1 & \text{if } U_{Pe}^*(\text{vote no}) < U_{Pe}^*(\text{vote yes}) \end{cases}$$

An observation where  $y_{Pr} = 1$ ,  $y_{Op} = 1$ , and  $y_{Pe} = 0$  is a case in which a new law was introduced, the opposing group(s) called for a referendum, and the people eventually rejected the new law. This corresponds to outcome 3 in the game tree (see graph 1). Since we will employ variables in the empirical part, which are observed by all players, we assume that the random part enters through actors who err. This assumption implies that the errors, the difference in the observed and the true utility, are only due to *errors* of the player who is taking a action. This corresponds with the notion of *agent error*.<sup>17</sup> This is a sensible assumption in this legislative application as the explanatory variables are known to all actors and we do not think that there is any relevant source of variation which we can not measure and model.<sup>18</sup>

#### 7.1.1 Deriving the Likelihood Function

The probability that the people will vote *yes* on a new law is  $q$  and since there are only two possible actions, the probability of a *no* vote is  $1 - q$ . We will assume that errors are normally distributed, and

<sup>17</sup>A comprehensive account for the choice of the error structure and its consequences is presented by Signorino (2003, 322).

<sup>18</sup>This assumption is less relevant than one expects. It can be shown that alternative specifications of the source of error lead eventually identical statistical results (see Signorino, 2003).

therefore the probability can be defined as:

$$q = \Phi \left[ \frac{U_{Pe}(y) - U_{Pe}(n)}{\sqrt{2}} \right] \quad (2)$$

where  $\Phi[\cdot]$  denotes the cumulative standard normal distribution. The utility to the people from accepting a new law is  $U_{Pe}(y)$ , and the utility from rejecting the law is  $U_{Pe}(n)$ . We do not observe the true utility  $U_{Pe}^*$  but only  $U_{Pe}$ . Further, we assume that the error has a normal distribution.<sup>19</sup> So far, this is nothing else than an ordinary probit model.

The opposition will trigger a referendum if they expect higher utility than if they accept the new law. The expected utility of the opposition is a function of their expectation of the people's action. The expected utility that the opposition obtains from triggering a referendum ( $r$ ) is:

$$E[U_{Op}(r)] = q \cdot U_{Op}(r|y) + (1 - q) \cdot U_{Op}(r|n) \quad (3)$$

The inclusion of the people's actions makes this a strategic interaction. In the same way the expected utility of accepting a new law – not triggering a referendum – is:

$$E[U_{Op}(nr)] = q \cdot U_{Op}(nr|\cdot) + (1 - q) \cdot U_{Op}(nr|\cdot) = U_{Op}(nr|\cdot) \quad (4)$$

It is now possible to make a statement about the probability of observing a referendum ( $p$ ) - the probability that the opposition will trigger a referendum:

$$p = \Phi \left[ \frac{q \cdot U_{Op}(r|y) + (1 - q) \cdot U_{Op}(r|n) - U_{Op}(nr|\cdot)}{\sqrt{2}} \right] \quad (5)$$

In a final step we can make a statement about the probability that the proposing party introduces a new law. The proposing coalition will introduce a new law if it expects a higher utility from this action than from not proposing a new law. The expected utility of proposing a new law is:

$$\begin{aligned} E[U_{Pr}(\ell)] &= p \cdot q \cdot U_{Pr}(\ell|r, y) + p \cdot (1 - q) \cdot U_{Pr}(\ell|r, n) \\ &\quad + (1 - p)U_{Pr}(\ell|nr, \cdot) \end{aligned} \quad (6)$$

We denote the probability that a new law is proposed by  $g$ . This probability can be expressed as a function of  $p$ ,  $q$ ,  $U_{Pr}(\cdot|nr, \cdot)$ ,  $U_{Pr}(\cdot|r, y)$ , and  $U_{Pr}(\cdot|r, n)$ . The utility of not proposing a new law is the utility obtained from the status quo. In terms of expected utilities one can determine that

$$g = \Phi \left[ E[U_{Pr}(\ell)] - E[U_{Pr}(sq)] \right] \quad (7)$$

---

<sup>19</sup>Note, that by assuming that the error has a standard normal distribution, we have also assumed that its variance is 1. This assumption is necessary, because otherwise the parameters would not be identified.

Since the expected utilities of  $\mathbf{Pr}$  are a function of  $p$  and  $q$ , and since these two probabilities are functions of  $E[U_{Op}]$  and  $U_{Pe}$ , the decision to propose a law or not is based on the entire game tree. Since we will eventually parameterize the utility functions and use data to estimate the utility, we can write:

$$g = \Phi \left[ \frac{p \cdot q \cdot U_{Pr}(\ell|r, y) + p \cdot (1 - q) \cdot U_{Pr}(\ell|r, n) + (1 - p) \cdot U_{Pr}(\ell|nr) - U_{Pr}(sq|\cdot)}{\sqrt{2}} \right] \quad (8)$$

As  $p$  and  $q$  are also based on utilities that we will parametrize, we can express  $g$  as a function of  $\mathbf{x}_{Pr}$ ,  $\mathbf{x}_{Op}$ ,  $\mathbf{x}_{Pe}$ ,  $\beta_{Pr}$ ,  $\beta_{Op}$ , and  $\beta_{Pe}$ .

We first defined the three different actions that lead to the four possible outcomes ( $y_{Pr}$ ,  $y_{Op}$ ,  $y_{Pe}$ ). In a second step we derived the probabilities of the individual actions as a function of utilities and expected utilities. In the final step, we parameterize the utility as in any other random utility model. The difference in the people's utility ( $U_{Pe}(y) - U_{Pe}(n)$ ) will be parametrized with  $\mathbf{x}_{Pe}\beta_{Pe}$ . Note, that the parameters  $\beta_{Pe}$  are not only determined by the data of the last node, but by the entire dataset. This point will prove to be crucial later. The same derivation can be carried out for the other two probabilities leading to similar insights.

It is now a simple matter of defining the likelihood function and the log-likelihood for this statistical model as follows:

$$\mathcal{L} = \prod_{i=1}^n \underbrace{[1 - g]^{(1 - y_{Pr})}}_{Outcome1} \times \underbrace{[g \cdot (1 - p)]^{y_{Pr}(1 - y_{Op})}}_{Outcome2} \times \underbrace{[g \cdot p \cdot (1 - q)]^{y_{Pr}y_{Op}(1 - y_{Pe})}}_{Outcome3} \times \underbrace{[g \cdot p \cdot q]^{y_{Pr}y_{Op}y_{Pe}}}_{Outcome4} \quad (9)$$

$$\begin{aligned} \ell\ell = & \sum_{i=1}^n (1 - y_{Pr}) \ln[1 - g] + y_{Pr}(1 - y_{Op}) \ln[g \cdot (1 - p)] + \\ & + y_{Pr}y_{Op}(1 - y_{Pe}) \ln[g \cdot p \cdot (1 - q)] + y_{Pr}y_{Op}y_{Pe} \ln[g \cdot p \cdot q] \end{aligned} \quad (10)$$

We denoted which part of the likelihood corresponds to which outcome in the game tree to show the close connection of the statistical model and the formal model. Equation 9 can be maximized and thereby the probabilities are estimated. By estimating the probabilities one also estimate the relative utilities. This allows to identify which variables contribute to the relative utilities. Technically, we can now estimate the coefficients  $\beta_{Pr}$ ,  $\beta_{Op}$ , and  $\beta_{Pe}$ . This allows us to make statements whether observed variables contribute to the utility of a specific actor or not.

Table 6: Unified Left Opposition

	rna	Coefficient	StdErrs	p-Value
1	Pr: constant	11.48	NaN	NaN
2	gps	0.32	0.69	0.64
3	sp	1.50	0.49	0.00
4	cvp	0.80	0.43	0.06
5	fdp	2.13	0.47	0.00
6	svp	2.32	0.54	0.00
7	distance	-13.26	6.31	0.04
9	Op: constant	1.73	0.08	0.00
10	distance	-0.25	0.46	0.59
11	left	0.08	0.00	0.00
12	op_svp	0.13	0.02	0.00
13	Pe: constant	0.85	0.34	0.01
14	distance	-0.45	0.92	0.63
15	br	0.4	-	-
16	ll= -253.64	AIC= 537.28	BIC= 598.1	N= 426

Table 7: Dummy Years

	rna	Coefficient	StdErrs	p-Value
1	Pr: constant	2.96	2.83	0.29
2	gps	0.18	0.70	0.79
3	sp	1.33	0.52	0.01
4	cvp	0.68	0.44	0.12
5	fdp	1.97	0.48	0.00
6	svp	2.26	0.53	0.00
7	distance	-10.97	3.50	0.00
9	Op: constant	1.70	0.18	0.00
10	op_gps	-0.16	0.10	0.09
11	op_sp	-0.10	0.08	0.19
12	op_svp	-0.24	0.11	0.03
13	distance	0.3	0.59	0.62
14	Vvoteyearin	-0.08	0.07	0.26
15	Vvoteyearin1	0.01	0.07	0.90
16	Pe: constant	0.67	0.47	0.16
17	distance	-0.58	1.24	0.64
18	br	0.87	0.40	0.03
19	ll= -253.92	AIC= 543.84	BIC= 616.82	N= 426

Table 8: Time and Time<sup>2</sup>

	rna	Coefficient	StdErrs	p-Value
1	Pr: constant	4.93	5.72	0.39
2	gps	0.23	0.70	0.74
3	sp	1.45	0.59	0.01
4	cvp	0.77	0.51	0.14
5	fdp	2.10	0.55	0.00
6	svp	2.30	0.57	0.00
7	distance	-12.88	6.60	0.05
9	Op: constant	1.70	0.20	0.00
10	op-gps	-0.11	0.13	0.37
11	op_sp	-0.07	0.07	0.27
12	op_svp	-0.17	0.16	0.27
13	distance	0.23	0.80	0.77
14	abstL	0.06	0.07	0.43
15	abstL2	-0.01	0.02	0.5
16	Pe: constant	0.66	0.92	0.47
17	distance	-0.03	3.00	0.99
18	br	0.72	0.47	0.12
19	ll= -253.68	AIC= 543.36	BIC= 616.34	N= 426