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**Quantifying Parliamentary
Representation of
Constituents' Preferences
with Quasi-Experimental Data**

Working Paper No. 2011 - 02

Quantifying Parliamentary Representation of Constituents' Preferences with Quasi-Experimental Data[#]

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Abstract

We assess the effect of constituents' preferences on legislators' decisions within a quasi-experimental setting. In the Swiss referendum process, citizens and legislators reveal their preferences for legislative proposals. We match roll call votes of all Swiss legislators on 102 legislative proposals with revealed constituents' preferences on exactly the same issues from 1996 to 2008. The setting allows us to quantify the quality of parliamentary representation and we identify conditions which affect convergence between constituents' preferences and legislators' decisions. Results show that a legislator's probability to accept a law proposal increases by 16.8 percentage points when district voters accept the proposal.

Key words: Political Representation, Constituents' Preferences, Spatial Voting Models, Referenda.

Political Science Classification: Representation and Electoral Politics, Political Behavior.

JEL Classification: D7, H7.

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1 Introduction

The literature on political representation tries to assess whether “what legislators do” corresponds to “what constituents want”. Legislators deviate systematically more from the median voter’s interests (Gerber and Lewis 2004) and from voters’ interests in general (Levitt 1996 and Matusaka 1995) than theoretical models of spatial voter competition predict.¹ While the empirical literature agrees that politicians deviate from constituents’ interests, it generally fails to reach a consensus regarding the extent of such deviations (see, e.g., Lott and Davis 1992, Bender and Lott 1996). The central problem of empirical studies is to elicit constituents’ preferences concerning law proposals and compare them with real legislative decisions.

In the literature, positions of voters and their representatives are usually constructed or estimated from “ideology scores” or election surveys such as, for instance, the Comparative Study of Electoral Systems employed by Golder and Stramski (2010) and others. Identified voter positions are then mapped on a one dimensional left to right or liberal to conservative axis, and compared to the constructed ideological positions of the representatives. This approach exhibits several weaknesses as aggregating individual positions into one single dimension is a tricky task.

In this paper we pursue a much more straightforward approach. We use unique quasi-experimental data which allow us to identify whether legislators’ decisions correspond to revealed preferences of their constituents’ majority. We quantify the parliamentary representation of constituents’ revealed preferences by comparing Swiss referenda results to roll call votes in parliament on the very same issues and with identical wording. Our setting also permits us to estimate the impact of voters’ revealed preferences on legislators’ decisions in national parliament and to identify conditions under which constituents’ preferences are better or worse represented.

Due to the nature of our data, we directly observe constituents’ revealed preferences and do not need to construct preference measures. Swiss referenda are an ideal device to quantify how well legislators represent their constituents’ preferences and to identify conditions moderating the influence of constituents’ preferences on political decisions. During the referendum process, legislators and the population vote on exactly the same legislative and constitutional proposals with identical wording. By casting their votes, citizens as well as

¹ For earlier contributions see Kau and Rubin (1978), Peltzman (1984) or Kalt and Zupan (1984).

legislators express their preferences and rank different legislative proposals against the status quo. This fact makes Switzerland an ideal laboratory to study the relationship between constituents and their representatives and serves as a testing ground for the way political representation works.

Our approach overcomes many measurement problems prevailing in the empirical literature. It solves problems induced by aggregating multiple dimensions because constituents' preferences for different issues are revealed in referenda and every referendum can be viewed as a unique issue. Referenda results reveal voters' preferences on legislative proposals which are implemented immediately when approved by the majority of voters and, thus, transferred to real policy outcomes. We consequently measure political representation of the majority of constituents' preferences on real life issues with . Finally, we avoid caveats of comparisons inherent in cross-country research. The sub-national electoral districts analyzed in this paper provide a common basic framework regarding dimensions such as legal rules, political patterns, history, culture, norms and the institutional context.

Our empirical results indicate that legislators diverge significantly from the preferences of their constituents against predictions from spatial voter completion models. Legislators vote in accordance with their constituents' interests in 17.5 percentage points more of the cases than a random model of politicians flipping a coin would predict. Congruence between constituents and their representatives is highest when legislators know in advance that a referendum will be held. Moreover, we show that legislators' decisions are affected by voters' preferences to some extent. The average probability that a legislator accepts a law proposal increases by approximately 16.8 percentage points when the majority of district voters accepts instead of rejects the proposal. Finally, we identify conditions which make legislators more or less sensitive to their voters. The influence of constituents' preferences on legislative decisions depends on district heterogeneity, a legislator's personal characteristics, party positions, and the electoral system.

Understanding how political representation works and whether politicians really do what their constituents want is of paramount importance for modern democracies.² Our results advance new explanations on how well political representation works, how well spatial

² The importance of political representation in general can even be traced back to Thomas Hobbes who states that "The office of the Sovereign, (be it a Monarch, or an Assembly,) consisteth in the end, for which he was trusted with the Souveraign Power, namely the procuration of the Safety Of The People; [...] But by Safety here, is not meant a bare Preservation, but also all other Contentments of life, [...]" (Thomas Hobbes, *Leviathan*, Chapter 30, pp. 242-243).

models such as the median voter model apply to real legislative decisions, and which other factors matter when trying to align legislators' behavior with citizens' preferences.

The remainder of this paper is organized as follows: Section 2 provides a short review of the literature and theoretical considerations when evaluating parliamentary representation of constituents' preferences. Section 3 presents our quasi-experimental data. The quality of parliamentary representation of voters' preferences is assessed in Section 4. Additionally, we explore factors which induce legislators to diverge more or less extensively from their constituent's preferences. Finally, Section 5 offers some concluding remarks.

2 Literature and Theoretical Considerations

Legislative decisions in democracies are usually made by majority rule. The majority rule is probably the most widely accepted decision rule for social choices. May (1952, p. 683) demonstrates that any decision function which "is not based on simple majority decision [...] will either fail to give a definite result in some situation, favor one individual over another, favor one alternative over the other, or fail to respond positively to individual preferences." Recently, Osborne and Turner (2010) showed that majority decisions through referenda may even lead to higher welfare than decisions based on cost benefit analyses by a planner.³

The majority rule's prevalence in political decisions has motivated scholars to employ median voter positions as well as median choices in a vast number of economic models. Classical theory suggests an elegant mapping from the median voter's interests to political representation and subsequently to policies: Downs (1957), following Hotelling (1929), first described the positional strategies of candidates when electoral competition works along a single policy dimension. The well known Downsian result of spatial competition is convergence of legislators' positions to the median voter.

The prediction of Downsian convergence is theoretically appealing. However, starting with Kau and Rubin (1978, 1979) and Peltzman (1984), literature on legislative shirking showed that systematic deviations from voters' interests exist. Lott and Davis (1992), Stratmann (1995), Bender and Lott (1996), and Gerber and Lewis (2004) provide additional results and an overview of the literature.

Theoretical and empirical contributions also investigated the possibility that legislators may react to stimuli other than median voters' preferences. Amongst legislators' competing

³ Cost benefit analysis (with sincere reporting) is inferior to a referendum in common value environments while in private value environments it is superior (see Osborne and Turner 2010).

principals are interest groups such as campaign contributors (see, e.g., Denzau and Munger 1986; Stratmann 1992), political parties (see, e.g., Alesina and Rosenthal 1989; Ansolabehere et al. 2001; Carey 2007), diverse subsets of the constituents (see, e.g., Jung et al. 1994; Levitt 1996; Golder and Stramski 2010), as well as the national electorate and its subsets. Moreover, district heterogeneity (Gerber and Lewis 2004) and voter margins (Lee et al. 2004) among other factors may induce divergence between constituents and legislators. Grofman (2004) offers a critical assessment of spatial voting models where he provides an overview of alternatives and complements to the classical median voter model.

The measurement of voters' preferences and their match with legislators' behavior is central to the literature on political representation. Due to the lack of a direct measure, congruency of interests of members of parliament with voters is often measured by "ideology scores" such as the ADA scores in the United States (see, e.g., Kenny and Lotfinia 2005; López and Ramírez 2008). To obtain proxies for district majority preferences, legislators' scores usually are regressed on districts' characteristics. The fitted ADA scores are considered to represent the district's interests, whereas the residuals exhibit the politician's divergence from his/her constituency. Such measures based on constituency characteristics have been criticized as inappropriate measures of legislative preferences by Krehbiel (1993, p. 21), among others. Levitt (1996) uses a slightly different approach. He measures district's median voters preferences by means of state's House delegation in the US and estimates the relative weights that senators assign to their party, ideology, district voters in general, and their supporting constituency. His results suggest that ideology is the primary determinant for senators' voting behavior while party line and voter preferences play minor roles.

Another branch of literature draws on election survey data such as the Comparative Study of Electoral Systems (CSES) project, Eurobarometer and the World Values Survey (see Blais and Bodet 2006 for a review of the literature). Golder and Stramski (2010) describe different ways of measuring congruence between legislators and voters with surveys.

Our approach overcomes problems of measures for legislators' and voters' positions constructed from ideology scores and surveys. We directly compare representatives' roll call votes and citizens' preferences revealed in referenda. Many authors discuss the effects of initiatives and referenda on the political process, citizens' representation and citizens' well-being (see, e.g., Frey 1994; Matsusaka 1995; Gerber 1996; Feld and Matsusaka 2003). However, only very few scholars consider roll call votes or referenda outcomes as measures for constituents' representation: Hersch and McDougall (1988) analyzed three referenda on "sin" issues held in Kansas to measure congruence between legislators and voters. Garret

(1999) examines legislative shirking in a single referendum in 1994 on allowing the state of West Virginia to operate a lottery. Both contributions find significant divergence between citizens and representatives. Recently, Gerber and Lewis (2004) draw on a dataset of individual vote returns from California and compare legislators' positions on a unidimensional NOMINATE scale with estimated districts' median voter preferences from referenda. They find limited explanatory power of the median voter hypothesis.⁴ By controlling for intra-district heterogeneity, they conclude that in heterogeneous districts, legislators are strongly influenced by their parties and virtually unconstrained by the district median voter. Our empirical approach is closely related to this sparse literature which uses referenda results to evaluate political representation.

We match Swiss legislators' roll call votes with their electoral district voters' revealed preferences. Constituents' preferences are measured by referenda in which voters decide on the very same legislative proposals legislators cast their roll call votes on. By examining 102 different referenda, we complement the literature and analyze congruence of constituents and legislators on a broad range of social, economic, cultural and demographic legislative proposals. As opposed to other measures, we work with referenda outcomes which do not hinge on expert opinions, aggregation bias or survey data problems. As referenda permit citizens to judge different policies and to rank them against the status quo they represent a measure of revealed preferences as already argued by Schneider et al. (1981). Our matched data of Swiss referenda have several major advantages: Swiss voters cast their votes on exactly the same legislative proposal with the identical wording as the legislators voted on in parliament. Hence, we measure legislators' behavior on exactly the same scale as voters' preferences. Moreover, information embodied in referenda is much richer than ideology measures because preferences are not constructed but observed. Even if the ideological positions of voters and citizens were close, there may exist large differences with respect to how they interpret the wording of a proposal and its implications for policy outcomes. Swiss referenda decisions are implemented immediately once voters have decided. Thus, the vote in parliament is binding and policy relevant which starkly contrasts with electoral platforms of political parties and individual candidates. Each referendum can be viewed as defining a unique one-dimensional space. This allows us to test legislators' deviations from their constituents issue by issue. Instead of reducing the distance between politicians and their

⁴ Gerber and Lewis (2004) stress that voters' and politicians' positions are not measured on the same scale. Hence their scales are not directly comparable and no stronger prediction than monotonicity could be made.

voters to one or two different policy spaces as common in the literature, we directly observe whether legislators deviated from the majority of their constituents on 102 political, economic and social issues. Additionally, we exploit different types of referenda to provide an upper bound for congruence and we estimate the effect of district majority preferences on legislators' behaviors. Finally, our data allows us to identify various conditions which affect the quality of parliamentary representation of voters' preferences.

3 Data and Revealed Preferences

To evaluate the quality of representation of voters' preferences in parliament, we match revealed constituents' majority preferences from referenda for the years 1996 to 2008 with individual roll call votes by legislators in the Swiss National Council, i.e. the parliament's lower house. Similar to the United States, Switzerland is one of the oldest democracies with a federal constitution dating back to 1848 with two houses, the National Council or 'Nationalrat' (which relates to the US house of representatives) and the State Council or 'Ständerat' (which relates to the US Senate).

The Swiss National Council's 200 members are each elected in one of the 26 Swiss electoral districts which are identical to the cantons. Legislators vote on law as well as constitutional proposals. A proposal is adopted by the National Council if a majority of legislators supports it.⁵ The parliamentary services record individual votes carried out on legislative proposals for every legislator and make them publicly available.

Proposals adopted by the National Council and the State Council do not necessarily turn into law, which is a peculiar characteristic of the Swiss political system not found at the national level of any other country. Swiss citizens have the possibility to demand a referendum on proposals accepted by parliament. Referenda are thus an important institution for Swiss citizen to voice their opinion and major parliamentary decisions are subject to voter's approval. For constitutional changes a referendum is even mandatory (*mandatory referenda*). If parliament intends to change or implement a new law a referendum is not mandatory but Swiss citizens may demand a so called *facultative referendum* on the proposed legislation by collecting 50000 signatures out of approximately 4.9 million registered voters. A Parliament's legislative proposal is rejected if 50 percent of the popular votes are against

⁵ For a proposal to be enacted the State Council has to agree too as well as the population in cases where a referendum is held on the proposal.

it.⁶ Finally, by a so called *initiative*, Swiss citizens may also demand a constitutional amendment by collecting 100000 signatures. Legislators cannot refuse an initiative unless it violates formal rules. Members of parliament are required to vote on the text of every initiative which serves as a recommendation for the popular vote. Legislators may also decide to work out a counter proposal to the initiative. Both, the initiative and the counter proposal are presented to the voters at the same ballot.⁷

The institution of the referendum has regularly used, as may be seen from Table 1, for the period of our analysis. We provide the original text of each referendum's topic in our dataset and the national result in the Appendix, Table A1.

< Table 1 here >

A full set of referenda results are available for every electoral district and for the whole period of analysis from the year 1996 to 2008 by the Swiss Federal Statistical Office and the Swissvotes Database. Appendix Table A2 gives additional explanations and descriptive statistics of our dataset.

Voters reveal their preferences for legislative decisions in referenda by ranking the new proposals of the parliament or the popular initiative against the status quo. Thereby, decisions in referenda mirror directly the utility of voters while financial streams and expert's judgment may not reflect utility implications for the majority. The constituents' preferences reveal themselves in a referendum and each referendum can be viewed as a unique policy space which eliminates potential problems when aggregating multiple policy dimensions to a single scale.

In our analysis we match roll call votes of individual legislators from the parliamentary services with decisions of district voters in referenda on the same issues. According to Krehbiel (1993), roll call votes are most proximate to the adoption of governmental policies. We study 17674 legislative decisions cast by a total of 394 different legislators on 102 referenda from 1996 to 2008.⁸

Swiss referenda cover a very broad range of socio-economic and political issues. However, not all parliamentary decisions are necessarily presented to voters in a referendum.

⁶ In the case of constitutional changes a proposal is also rejected if a majority of the electoral districts (the cantons) vote against it.

⁷ Counter proposals to initiatives have been presented in five cases. As they are presented together with the initiative to the electorate they are not considered as independent.

⁸ Parliamentary decisions in the year 1995 are considered too, because decisions by legislators precede referenda. There are 200 members of parliament in each legislature. Note that members of parliament may be absent or abstain from voting due to sickness, voyage, political duties, professional bias, or other responsibilities which reduces to number of observation from theoretically 20400 by 13.4 percent to 17674.

This may result in a potential selection bias which is a common problem of studies focusing on referenda. In the Swiss case a potential selection bias is likely to be low. Firstly, for constitutional amendments a referendum is always mandatory. Moreover, for law changes, the low signature requirement for referenda (less than 1 % of the population may require a referendum on a parliamentary decision) assures that even weakly controversial decisions may be subject to voter's approval. Finally, by including initiatives which are initiated directly by citizens, we mitigate problems of policy selection as well as agenda setting in parliament to some extent and come close to covering all policy dimensions relevant for constituents. By analyzing how different types of referenda alter representatives' incentives to align their votes with the preferences of the majority of constituents we obtain an upper bound for convergence between legislators and constituents.

We analyze the quality of political representation of the majority of constituents. Democratic decisions are generally majority decisions and representation of the majority (the median voter) is a benchmark case for single as well as multi-member districts. As we analyze single referenda which may each reflect different policy dimensions, the issue of politicians dispersing over a certain policy space is less relevant because in multi-member districts politicians may also cover more policy dimensions. The sub-national units, i.e. the electoral districts, provide a broad empirical field within a common framework of identical basic dimensions. Consequently, we can identify other factors such as district heterogeneity, party affiliations, differences in the electoral system, etc. which may influence the constituent's effect on legislators' behaviors.

In a first step to evaluate divergence between legislators and constituents, we analyze the match of legislators' decisions and constituents' decisions, i.e. we compare whether legislators decided on a legislative proposals in the same way as their voters. For instance, a legislator from the Canton of Zurich who votes "yes" on the "Law on Family Allowances" matches his constituency's majority opinion and, thus, the preferences of the majority of voters if at least 50 percent of voters from the Canton of Zurich vote "yes" in the referendum on November 26, 2006, too. Because the delegates' vote occurs before the citizens' vote, legislators need to forecast the decisions of their constituents to vote according to their constituency's preferences (see Garrett 1999 for a similar issue). When a referendum's result is close to the 50 percent mark, legislators may have problems identifying the preferences of the constituents. To analyze robustness of our divergence measure to such slight changes, we modify the threshold of 50 percent to whether legislators vote like 45, 47.5, 52.5 or 55 percent of voters, respectively.

In a second step, we estimate a logistic model with district clustering to explain the yes-vote of legislators by whether electoral district voters voted “yes” or “no” in a referendum. This allows us to analyze the quality of parliamentary representation of constituents’ preferences. Instead of focusing on divergence between voters and legislators, we quantify how constituents influence a legislator’s decisions. We estimate the effect of the predicted majority’s yes-vote in a referendum on the probability that the legislator will agree on the same issue in parliament.

Lastly, we analyze conditions when legislators follow constituents’ preferences better or worse by looking at a number of factors which are outside a purely spatial model. We focus on the influence of district heterogeneity, a politician’s personal characteristics, party affiliation, the electoral system and time lags. All these factors are shown to influence the quality of parliamentary representation beyond spatial considerations.

4 Empirical Results

4.1 Baseline Results

Table 2 presents empirical results to quantify divergence between legislators and their constituents.

< Table 2 here >

In 67.5 percent of the analyzed legislative and popular decisions, members of parliament vote in line with constituents’ preferences as shown in column (1), line (a). If legislative choices of politicians were purely random, i.e. not influenced by constituents’ preferences or other factors, we should observe that a politician agrees in half of the cases with the population of his/her electoral district. Put differently, legislators tossing a coin would agree in 50 percent of the cases with the majority of their respective districts even if there is no relationship between politician and constituency (see Krehbiel 1993 for a similar argument).⁹ The t-value in parenthesis indicates that the mean of all matched referenda and legislative decisions is significantly higher than 50 percent. Thus, observed congruence between legislators and the constituents’ preferences is by approximately 17.5 percentage points higher than the purely random choice assumption where legislators toss a coin.

⁹ Theoretically, it is possible that a legislator agrees in less than 50 percent with the majority of constituents as other factors may drive divergence.

Legislators may not intend to diverge from their constituent's preferences. Instead, they may have difficulties identifying in advance the majority for reasonable close referenda and reside with the minority ex-post, e.g. they reside with 47.5 percent of the population but not with 52.5 percent. By definition parliamentary decisions take place before the respective popular vote.¹⁰ In lines (b) to (e) we study variations of the threshold defining congruence between 45 and 55 percent to confirm that divergence is not due to difficulties of legislators in identifying the constituents' position in close races. Depending on the threshold, legislators vote according to the preferences of their constituency in 65.6 to 68.6 percent of the cases. Consequently, divergence between legislators and constituents derived in line (a) does not seem to be decisively affected by information uncertainty about constituents' positions in close referenda.

Specification (2) analyzes how well legislators represent their constituents when only mandatory referenda are considered. In Switzerland mandatory referenda are required when parliament would like to enact constitutional amendments. With mandatory referenda, politicians know in advance that citizens have to confirm legislative decisions in a referendum. Therefore, they have few incentives to deviate from constituents' majority preferences to pursue special interests. Moreover, they know for sure that their decisions are compared against the district majority's will. Thus, congruence between legislators and constituents is expected to be highest for mandatory referenda. Analyzing mandatory referenda allows us to calculate an upper bound for congruence between legislators and constituents.¹¹ In column (2), line (a) we observe that with mandatory referenda congruence is 26.3 percentage points above the congruency level which a purely random assumption about politicians' behaviors would predict. The degree of congruence is with 76.3 percent 8.7 percentage points higher than when all referenda are investigated and congruence fluctuates by approximately 2.8 percentage points when the threshold is changed between 45 to 55 percent as reported in lines (b) to (e). Again, minimal divergence between legislators and voters does not decisively depend on the threshold level.

¹⁰ Politicians decide first and only then divergence to voters can be measured reasonably. Similarly, in other countries without referenda, surveys on specific laws can only be conducted after laws have been enacted. Otherwise surveys would be of a purely hypothetical nature. Initiatives in our data allow legislators to deduce certain positions of voters in advance.

¹¹ It could be argued that law proposals not subject to referenda have even a higher congruence than constitutional issues. This cannot be excluded as such proposals usually touch less important and uncontroversial issues. However, in a similar vein it could be argued that convergence would be highest for the infinity of issues parliament never decides on (such as "waging war against the rest of the world", for example). Finally, less than 1 % of the population may require a referendum.

Column (3) reports results for the subset of facultative referenda, only. Politicians do not know in advance that their law proposals will be challenged in a facultative referendum. With simple law changes politicians have more leeway to diverge from the constituents' preferences because law changes are not automatically subject to citizen's control. Consequently, divergence between legislators and constituents is likely to be higher, i.e. congruence will be lower. Line (a) confirms that in the 63.8 percent of the cases legislators voted like the constituents when law proposals were subject to a facultative referendum as compared to 76.3 percent for mandatory referenda in column (2), line (a). This indicates that politicians tend to diverge more when their decisions are not automatically subject to a referendum. Divergence depends more on the chosen threshold for facultative referenda. In lines (b) to (e) we observe that changes in the threshold to identify congruence lead to comparatively high fluctuations. When the threshold is set to 45 percent of constituents, congruence between politicians and constituents increases by approximately 2.9 percentage points compared to line (a). On the other hand, when politicians are required to represent at least 55 percent or more of district citizens, congruence falls from 63.8 percent in line (a) to 58.9 percent in line (e).

Voters in Switzerland have the possibility to demand a constitutional change on their own by an initiative. The initiative committee formulates its proposed amendment as it is to be added to the constitution and as it is to be presented to the voters. Legislators have to express their opinion about the proposed constitutional change. Usually legislators reject initiatives, and often the majority of citizens reject the constitutional change demanded by an initiative. Thus, in 66.9 percent of the cases legislators decide like the constituents when constitutional changes demanded by initiatives are concerned. Lines (b) to (e) show that representation of constituents fluctuates only slightly when the threshold to identify congruence changes.

Representatives to the national parliament may not only consider the welfare of their constituents but also the policy consequences for Switzerland as a whole. Indeed, the mandate of representatives to the National Council might be seen to represent the Swiss population as a whole and not only their districts. In column (5) we analyze referenda where districts have voted as Switzerland as a whole, i.e. we focus on referenda where the constituents from the legislator's district as well as the majority of Swiss constituents agree. Line (a) shows that congruence is by approximately 19.6 percentage points higher than in a purely random model of politicians tossing a coin. This is higher than the average effect of 17.5 percent which indicates that legislators are not only influenced by the constituents of

their district but also by Swiss voters in general. Representation of constituent's interests does not depend on the threshold level chosen and fluctuations are minor as shown in lines (b) to (e).

4.2 Influence of district median on legislators

Another strategy to evaluate the quality of parliamentary representation of constituents' preferences is to analyze whether politicians are more likely to accept law and constitutional proposals when their constituents agree to the same proposals in a referendum. We explain the yes-vote of an individual legislator using a logistic model. Our explanatory variable is a binary identifier which indicates whether the majority of constituents voted "yes" on the same issue as the legislator.

We estimate the change in the likelihood that legislators agree to a proposal given that the district voters agree too. Results of the logistic model are presented in Table 3. We use district level clustering to correct standard errors which are given in parenthesis. Discrete effects measure the impact of a change in each variable on the probability of a legislator to agree to the law proposal when all other variables are evaluated at zero. The discrete effect printed next to the intercept measures the baseline probability that a legislators votes "yes".

< Table 3 here >

In specification (1) all 102 referenda enter the model. The baseline probability that a politician agrees is approximately 58.3 percent.¹² The probability that a legislator agrees to a law proposal increases when district voters agree. This is reflected by the positive coefficient for the dummy variable in column (1) which indicates whether the majority of constituents agree or not. Thus, politicians react to constituents' preferences. When constituents support instead of reject the proposal in a referendum, the likelihood that a representative of the district votes "yes" in parliament increases by 16.8 percentage points. The logistic model controls for the type of referendum. For constitutional changes demanded by parliament the probability that a legislator votes "yes" increases by 15.5 percentage points while constitutional referenda demanded by citizen via initiatives decreases the yes-vote probability of legislators by 25.8 percentage points.

¹² The baseline probability of the intercept is calculated under the assumption that the majority of voters reject the proposal in a referendum. The baseline probability must be higher than 50 percent for proposals initiated by parliament because otherwise the proposal would not have passed parliament. This is not the case for initiatives.

We evaluate the explanatory power of the logistic model using two different measures. Firstly, the Brier score measures the accuracy of probability assessments by averaging squared deviations between predicted probabilities with real outcomes. The score is bound between zero and one where a lower score represents higher accuracy. Secondly, the Nagelkerke Pseudo R2 compares the likelihood ratios of the estimated model with a model containing a constant only. It adjusts the measure such that the range of possible values extends to the value of one which indicates the best fit. The explanatory power of specification (1), which corresponds to a bare-bones spatial voting model such as the median voter model, is reasonable for logistic models considering the Brier score and the Nagelkerke Pseudo R2.

In column (2) we restrict the dataset to mandatory referenda. The baseline probability that legislators vote “yes” for constitutional proposals is approximately 74.5 percent as indicated by the intercept. If the district majority accepts a constitutional change in the referendum, the probability that legislators vote “yes” increases too. The coefficient of the dummy identifying constituents’ preferences is positive and significant. However, constituents’ preferences have a smaller influence on representatives’ behaviors when constitutional changes in mandatory referenda are concerned. The discrete change indicates that when the district majority agrees to law proposals the probability that legislators cast a yes-vote increases by 11.2 percentage points. The explanatory power of specification (2) is fair considering the Brier score but low considering the Nagelkerke Pseudo R2. The low Nagelkerke Pseudo R2 is explained by the fact that the model containing only a constant has a high explanatory power. In other words, legislators’ acceptance of constitutional changes that passed parliament is generally high.

Specification (3) focuses on facultative referenda. The baseline probability is with 61.9 percent lower for law changes than for constitutional changes. When the district majority agrees to the law change, the probability that the legislator agrees increases significantly. The discrete change in the probability is with 11.7 percentage points slightly higher than in the case of mandatory referenda. Again, constituents’ preferences seem to induce only small changes in law setting behavior of representatives. The Brier score is comparable to specification (1) but the pseudo R2 is in the range of specification (2).

Initiatives are a unique way to evaluate the behavior of legislators as they are constitutional proposals initiated by citizens. They allow us to analyze how representatives react to proposals in general and to constituents in particular when proposals did not emerge from the standard parliamentary process. One aim of the institution of initiatives is to

introduce citizens' opinions into parliament. Consequently, legislators are directly confronted with citizens' wishes and have to decide how their constituents will decide. Initiatives are usually rejected in parliament by a majority of legislators (and often also by the majority of voters). This is reflected by the negative coefficient of the intercept in column (4). A legislator's baseline probability to accept the text of an initiative is 31.6 percent. However, district majority preferences have a larger impact on legislators' behaviors. The probability that a representative agrees to the constitutional changes proposed by initiatives increases by 25.0 percentage points if his/her district favors the respective constitutional change.

Finally, we analyze districts where the district majority has voted in the same way as the aggregate of all Swiss voters (specification 5). Again, legislators may not only care about the utility of their constituents but they also seem to be motivated to care to some extent about the whole nation. Consequently, they are in a conflict whether to vote with their constituents against the nation's majority or with the nation's majority against their constituent's interests. However, when the majority of Switzerland votes as the district majority this potential conflict of interests vanishes. We can expect that if both district and nation agree, the influence of constituents on representatives' behaviors is higher. This hypothesis is confirmed in column (5). The likelihood that the legislator votes "yes" on a proposal if district constituents (and national majority) agree to the proposal increases by 21.0 percent. Discrete effects of the controls for the referenda type are slightly higher than in earlier estimates.¹³

4.3 Explaining divergence

As shown in Table 2, congruence between legislators and constituents' preferences is approximately 17.5 percentage points higher than a purely random choice assumption concerning legislators' behaviors would predict. Table 3 indicates that constituents' preferences influence legislators in their choices. If a majority of constituents agreed in the referendum, the likelihood that the legislator agrees is approximately 16.8 percentage points higher.

According to these estimates, constituents' preferences do not fully explain legislators' behavior. Thus, factors outside the traditional spatial voting models may drive the divergence

¹³ The quantitative effects of influence of constituents slightly increase when only referenda are analyzed where the district population has either accepted the proposal with 52.5 percent or more or rejected the proposal with 52.5 percent or more (close races deleted from dataset). In specification (1) the influence of constituents increases to increases from 16.8 percent to 18.9 percent when only referenda with clear results are analyzed.

between voters and representatives. Our data allows us to identify different explanations for when voters' preferences have a higher or lower influence on legislative decisions. We analyze which factors, apart from spatial considerations, may influence the quality of parliamentary representation. Results are presented in Table 4.

< **Table 4 here** >

Influence of district characteristics

Legislators from more heterogeneous and urban districts may be less responsive to the constituents' preferences than legislators from homogenous districts (see Gerber and Lewis 2004). Opinions are usually more dispersed in urban than in rural areas. Thus, we explain legislators' yes-votes by how constituents decided in a referendum and interact this variable with urbanization. We standardize all continuous variables such that the median of a standardized variable is zero. This facilitates interpretation of discrete effects. While we do not expect heterogeneity to have a direct influence on the yes-vote of legislators, we predict that in districts with a higher degree of urbanization, the influence of constituents' preferences on legislators' behaviors is lower, i.e. we expect a negative interaction term. Specification (1) confirms our expectations. The interaction term between the yes-vote of constituents and urbanization is negative and significant. Thus, in more urban districts voters influence representatives by a lower degree. Put differently, when urbanization inside the electoral district is low the influence of constituents' preferences on the legislator increases. Next to the interaction term we calculate a discrete effect for changing from a situation where the majority of constituents does not cast a yes-vote to a situation where the majority casts a yes-vote and urbanization increases by one standard deviation. By comparing the discrete effect of the variable "Constituents vote YES" with the discrete effect next to the interaction term, we observe that the influence of constituents' preferences drops from 18.6 percent when urbanization is at a median value to 16.0 percent when urbanization is one standard deviation higher.

There is no unique measure for heterogeneity. Apart from urbanization we explore two other indicators (see Vatter, 2003; Neto and Cox, 1997). In specification (2) population density is used. This measure correlates with urbanization because urban areas are usually more densely populated than rural areas. Interacting population density with district preferences allows us to identify the impact of the majority of voters in a heterogeneous district on legislators' behaviors. Similar to specification (1), the interaction term in specification (2) is negative and significant. Thus, given that the constituents support the legislation, the effect on political representatives is smaller when population density is high.

However, the difference in the discrete effects is with $(0.1718 - 0.1661 =) 0.6$ percentage points relatively small, i.e. the influence of constituents' preferences on legislators is only marginally lower when density is one standard deviation higher.

A usual suspect in economic studies concerns the effects of income. However, we have no clear idea how average income influences legislators' behavior when representing constituents. In specification (3) we analyze the effect of district income interacted with constituents' preferences. The effect of constituents on legislators' behaviors is significantly lower in electoral districts with higher income as indicated by the interaction term. Increasing income by one standard deviation changes the influence of the majority of constituents from 17.6 percentage points to 15.4 percentage points.

Influence of politicians' characteristics

In addition to district characteristics, politicians' personal characteristics may also influence their voting behavior. Specification (4) shows that the coefficient of the interaction between a legislator's age and constituents' preferences is positive and significant. As constituents vote "yes", older politicians are significantly more likely to react and vote according to their voters. However, the discrete effects point only to a marginally higher influence of constituents' preferences. This result is consistent with the view that older politicians are often more experienced than younger ones and may be less bound by party positions than their younger colleagues. Younger politicians often attempt to advance inside the party. Consequently, they may tend to take more ideological positions which may diverge more from the majority of constituents.

Generally, politicians from parties at the boundary of the electoral spectrum can be expected to take more dispersed decisions than politicians from the center. We construct an identifier for parties which are in the center.¹⁴ This dummy variable is interacted with the "Constituents vote YES" identifier. We observe two distinct effects when controlling for politicians from center parties. First, constituents' preferences themselves turn out to have no significant impact on legislators any more. However, constituents' preferences interacted with center party politicians are highly significant. Thus, being a politician from a center party and knowing that the constituents agree to the legislative proposal increases the probability of voting "yes" in parliament by 21.8 percentage points (interaction term) while

¹⁴ In the left-right dimension parties in Switzerland are commonly ordered as follows: Socialist Party (left) and Greens (left); Christian Democrats (center) and Liberals (center); Swiss People's Party (right).

the baseline influence on politicians from the electoral boundary is only 3.1 percent and insignificant. Put differently, politicians from the boundary of the electoral spectrum tend to react less (or not at all) to constituents' preferences while politicians from the center also consider the majority's position.

Influence of characteristics of the political system

By definition, representatives decide on legislative proposals before people have the possibility to do so, otherwise there would be nothing to decide apart from citizens' demands raised by initiatives. In Switzerland the median duration from parliamentary decisions to a referendum amounts to 247 days. This is particularly fast considering that for most referenda signatures have to be collected, formal delays have to be respected, voting ballots have to be printed, etc. A longer time lag between parliamentary decisions and referenda gives supporters and opponents of legislative proposals more time to campaign. Therefore, it is possible that this time lag either introduces more divergence or more convergence between constituents and legislators. In specification (6) we observe a negative and significant interaction term. If the time lag increases by one standard deviation the probability that the majority of constituents has an influence on politicians decreases from 16.6 to 13.4 percentage points. This is consistent with the view that people having demanded a referendum or an initiative try to campaign harder than those who supported the legislation in parliament or oppose the text of the initiative.

Finally, we analyze the influence of the number of seats of a district in National Council. When an electoral district's number of seats increases the number of parties running for these seats increases as well (Duverger 1954; Downs 1957). Moreover politicians may have more incentives to diverge from the majority's preferences because they gain sufficiently votes by focusing on narrower groups of voters (see Lancaster 1986, Cox 1990). Thus, we expect representatives from districts with a low number of seats to be more sensitive to the constituents' preferences. We interact the identifier whether the district majority agrees to the proposal in a referendum with district magnitude measured by the number of seats a district has. Specification (7) reports the results. The base effect of the district majority on the probability that a legislator votes "yes" is positive and significant. The variable seats itself is insignificant as seats do not have a direct influence on whether a legislator votes "yes" on legislative proposals. The interaction term between the district majority and seats is negative and significant. This indicates that individual legislators from districts with a higher number

of seats show less congruence with constituents' preferences.¹⁵ If district magnitude increases by one standard deviation the influence of constituents' preferences on legislators drops by 3.0 percentage points.

5 Conclusion

Political representation concerns the correspondence between the legislators' behavior and the will of citizens. This paper considers the relationship between citizens' preferences and representatives' decisions in a unique way. Under an institutional setting with direct democratic devices comparable to some US states, we use quasi-experimental data and match revealed citizens' preferences with legislators' roll call votes in parliament. Citizens regularly reveal their preferences in popular referenda in Switzerland. Representatives to the Swiss National Council vote on exactly the same legislative proposals with identical wording as people vote on in referenda. Thus, we pursue a unique way to identify whether legislators represent their constituents' preferences. The nature of the data allows us to assess congruence of constituents and legislators, estimate the influence of the constituents' preferences on legislative decisions and test conditions under which the standard spatial explanations of legislative behavior are theoretically more or less robust.

Empirical results strongly support the hypothesis that legislators diverge significantly from their constituents' preferences. Legislators vote on average 17.5 percentage points more with their constituents than a pure random model of politicians flipping a coin would predict. We identify an upper bound of the congruence between parliamentary decisions and constituents' preferences which is set by mandatory referenda. Mandatory referenda are required for proposals concerning changes in the Swiss constitution. In this type of referendum legislators know in advance that people will vote on the same issues as they did in parliament. Politicians act accordingly and institutional congruence is highest with approximately 26.3 percentage points more than under a purely random choice assumption concerning politicians' behaviors.

We are also able to analyze changes in the probability that legislators accept law proposals if constituents prefer the same proposals and vote "yes" in a referendum. If a

¹⁵ When analyzing the influence of constituents in pure plurality districts (with one seat only) we usually do not find significant results for the yes-vote of the majority of voters which confirms that our results are not an artefact of the electoral system (results available on request).

majority of constituents agrees to legislative proposals, the probability that representatives agree increases by approximately 16.8 percentage points on average.

Finally, we identify different factors which moderate the influence of the constituents' preferences apart from the spatial structure of electoral competition. In heterogeneous districts the influence of the constituents on politicians is lower than in homogenous districts (see Lewis and Gerber 2004 for similar results). Moreover, a politician's age, party affiliation of representatives, the time between the final decision in parliament and the referendum as well as the electoral system influence the effect of constituents' preferences on legislators.

These results have important consequences for our understanding of political representation. Most importantly, different institutional settings and direct democratic control through referenda induce the legislators to either converge or diverge from the majority's preferences. When legislators know in advance that citizens will vote on an issue that they passed in parliament, the match between their behavior and the citizen's vote is highest. Purely spatial explanation of legislators' behaviors offers little insight into the true nature of political representation. District heterogeneity, politicians' characteristics, parties and other factors play a role for divergence.

Our approach measures legislators' divergence from the majority of constituents on real life issues. The factors which induce legislators to either diverge more or less from the district voter preferences are not of a spatial nature. Thus, an important direction for future research involves analyzing robustness issues when introducing heterogeneity, personal characteristics, party positions and so forth in spatial voting models. The central question is, whether standard assumptions about political competition suffice to induce legislators to adhere to constituents' preferences in real life situations. Moreover, sophisticated voters understand that whom they elect also influences the composition of the whole legislative body. They might elect extremists on certain dimension which deviate from their more centrist preferences if this induces legislative outcomes which are eventually centrist. Finally, some of the referenda analyzed might turn out to bear more important practical consequences than others in the long run, i.e. divergence behavior of legislators may be more or less important depending on the issues analyzed.

Bibliography

Alesina, A. & Rosenthal, H. (1989), 'Partisan Cycles in Congressional Elections and the Macroeconomy', *The American Political Science Review* **83**(2), pp. 373-398.

- Ansolabehere, S.; Snyder, J. M. & III, C. S. (2001), 'The Effects of Party and Preferences on Congressional Roll-Call Voting', *Legislative Studies Quarterly* **26**(4), 533-572.
- Bender, B. & Lott, John R, J. (1996), 'Legislator Voting and Shirking: A Critical Review of the Literature', *Public Choice* **87**(1-2), 67-100.
- Blais, A. & Bodet, M. A. (2006), 'Does Proportional Representation Foster Closer Congruence Between Citizens and Policy Makers?', *Comparative Political Studies* **39**(10), 1243-1262.
- Carey, J. M. (2007), 'Competing Principals, Political Institutions, and Party Unity in Legislative Voting', *American Journal of Political Science* **51**, 92-107.
- Coughlin, P. J. (1990), 'Majority Rule and Election Models', *Journal of Economic Surveys* **4**(2), 157-88.
- Denzau, A. T. & Munger, M. C. (1986), 'Legislators and Interest Groups: How Unorganized Interests get Represented', *The American Political Science Review* **80**(1), 89-106.
- Downs, A. (1957), *An Economic Theory of Democracy*, Harper & Row, New York.
- Duverger, M. (1954). 'Political parties: their organization and activity in the modern state', Wiley, New York.
- Feld, L. P. & Matsusaka, J. G. (2003), 'Budget referendums and government spending: evidence from Swiss cantons', *Journal of Public Economics* **87**(12), 2703-2724.
- Frey, B. S. (1994), 'Direct Democracy: Politico-Economic Lessons from Swiss Experience', *The American Economic Review* **84**(2), 338-342.
- Garrett, T. A. (1999), 'A Test of Shirking under Legislative and Citizen Vote: The Case of State Lottery Adoption', *Journal of Law and Economics* **42**(1), 189-208.
- Gerber, E. R. & Lewis, J. B. (2004), 'Beyond the Median: Voter Preferences, District Heterogeneity, and Political Representation', *Journal of Political Economy* **112**(6), 1364-1383.
- Gerber, E. R. (1996), 'Legislative Response to the Threat of Popular Initiatives', *American Journal of Political Science* **40**(1), 99-128.
- Golder, M. & Stramski, J. (2010), 'Ideological Congruence and Electoral Institutions', *American Journal of Political Science* **54**(1), 90-106.
- Grofman, B. (2004), 'Downs and two-party convergence', *Annual Review of Political Science* **7**, 25-46.
- Grossman, G. M. & Helpman, E. (2005), 'Party Discipline and Pork Barrel Politics', NBER Working Paper No. 11396.
- Hersch, P. L. & McDougall, G. S. (1988), 'Voting for 'Sin' in Kansas', *Public Choice* **57**(2),

127-139.

- Hobbes, T. (1904), *Leviathan or the Matter, Forme and Power of a Commonwealth, Ecclesiasticall and Civill*, edited by A. R. Waller, Cambridge University Press, Cambridge.
- Hotelling, H. (1929), 'Stability in Competition', *The Economic Journal* **39**(153), 41-57.
- Jung, G.-R.; Kenny, L. W. & Lott, J. R. (1994), 'An explanation for why senators from the same state vote differently so frequently', *Journal of Public Economics* **54**(1), 65-96.
- Kalt, J. P. & Zupan, M. A. (1984), 'Capture and Ideology in the Economic Theory of Politics', *The American Economic Review* **74**(3), 279-300.
- Kau, J. B. & Rubin, P. H. (1979), 'Self-Interest, Ideology, and Logrolling in Congressional Voting', *Journal of Law and Economics* **22**(2), 365-84.
- Kau, J. B. & Rubin, P. H. (1978), 'Voting on Minimum Wages: A Time-Series Analysis', *Journal of Political Economy* **86**(2), 337-42.
- Kenny, L. & Lotfinia, B. (2005), 'Evidence on the importance of spatial voting models in presidential nominations and elections', *Public Choice* **123**(3), 439-462.
- Krehbiel, K. (1993), 'Constituency Characteristics and Legislative Preferences', *Public Choice* **76**(1-2), 21-37.
- Lancaster, T. D. (1986), 'Electoral Structures and Pork Barrel Politics', *International Political Science Review* **7**(1), 67-81.
- Lee, D. S.; Moretti, E. & Butler, M. J. (2004), 'Do Voters Affect Or Elect Policies? Evidence from the U. S. House', *The Quarterly Journal of Economics* **119**(3), 807-859.
- Levitt, S. D. (1996), 'How Do Senators Vote? Disentangling the Role of Voter Preferences, Party Affiliation, and Senator Ideology', *The American Economic Review* **86**(3), 425-441.
- Lott, J. R. & Davis, M. L. (1992), 'A Critical Review and an Extension of the Political Shirking Literature', *Public Choice* **74**(4), 461-84.
- López, E. & Ramírez, C. (2008), 'Mr. Smith and the economy: the influence of economic conditions on individual legislator voting', *Public Choice* **136**(1), 1-17.
- Matusaka, J. G. (1995), 'Fiscal Effects of the Voter Initiative: Evidence from the Last 30 Years', *Journal of Political Economy* **103**(3), 587-623.
- May, K. O. (1952), 'A Set of Independent Necessary and Sufficient Conditions for Simple Majority Decision', *Econometrica* **20**(4), 680-684.
- McKelvey, R. D. (1979), 'General Conditions for Global Intransitivities in Formal Voting Models', *Econometrica* **47**(5), 1085-1112.
- Milesi-Ferretti, G. M.; Perotti, R. & Rostagno, M. (2002), 'Electoral Systems And Public

- Spending', *Quarterly Journal of Economics* **117**(2), 609-657.
- Neto, O. A. & Cox, G. W. (1997), 'Electoral Institutions, Cleavage Structures, and the Number of Parties', *American Journal of Political Science* **41**(1), 149-174.
- Osborne, M. J. & Turner, M. A. (2010), 'Cost Benefit Analyses versus Referenda', *Journal of Political Economy* **118**(1), 156-187.
- Peltzman, S. (1984), 'Constituent Interest and Congressional Voting', *Journal of Law and Economics* **27**(1), 181--210.
- Schneider, F.; Pommerehne, W. W. & Frey, B. S. (1981), Politico-economic interdependence in a direct democracy: The case of Switzerland, in Douglas A. Hibbs & Heino Fassbender, ed., 'Contemporary Political Economy, Studies on the Interdependence of Politics and Economics', North Holland, Amsterdam, .
- Schofield, N. (1983), 'Generic Instability of Majority Rule', *The Review of Economic Studies* **50**(4), 695-705.
- Schofield, N. (1978), 'Instability of Simple Dynamic Games', *Review of Economic Studies* **45**(3), 575-594.
- Stratmann, T. (1992), 'Are Contributors Rational? Untangling Strategies of Political Action Committees', *The Journal of Political Economy* **100**(3), 647-664.
- Stratmann, T. (1995), 'Campaign Contributions and Congressional Voting: Does the Timing of Contributions Matter?', *Review of Economics and Statistics* **77**(1), 127-136.
- Vatter, A. (2003), 'Legislative Party Fragmentation in Swiss Cantons: A Function of Cleavage Structures or Electoral Institutions?', *Party Politics* **9**(4), 445-461.

Table 1: Referenda in Switzerland

	<i>accepted</i>	<i>refused</i>	<i>sum</i>
Mandatory referenda	15	3	18
Facultative referenda	27	7	34
Initiatives	3	47	50
Total	45	57	102

Notes: Referenda in Switzerland according to type from 1996 to 2008.

Table 2: Quality of parliamentary representation: Divergence between legislators and median voters

	<i>All referenda (1)</i>	<i>Mandatory referenda (2)</i>	<i>Facultative referenda (3)</i>	<i>Initiatives (4)</i>	<i>District voted as Switzerland (5)</i>
(a) Legislator votes as 50 % of constituents (majority)	0.6752 (49.7448)	0.7626 (34.6223)	0.6381 (22.1021)	0.6688 (33.2789)	0.6963 (53.9629)
(b) Legislator votes as 45.0 % of constituents	0.6862 (53.3456)	0.7757 (37.0649)	0.6672 (27.2846)	0.6666 (32.7891)	0.6994 (54.9637)
(c) Legislator votes as 47.5 % of constituents	0.6809 (51.6071)	0.7715 (36.2746)	0.6518 (24.5048)	0.6679 (33.0723)	0.699 (54.8407)
(d) Legislator votes as 52.5 % of constituents	0.6663 (46.8997)	0.756 (33.4247)	0.6112 (17.5479)	0.6715 (33.875)	0.689 (51.6072)
(e) Legislator votes as 55.0 % of constituents	0.6564 (43.7768)	0.7483 (32.096)	0.5887 (13.8704)	0.6693 (33.3823)	0.6805 (48.9255)
(f) Observations (Referenda)	17674 (102)	3147 (18)	5916 (34)	8611 (50)	15980 (102)

Notes: The table presents the match of legislators' decisions in parliament and constituents' decisions in referenda (# of matches divided by total # of decisions). The t-value in parenthesis tests whether the mean of the matches is significantly different to 50 percent.

Table 3: Influence of constituents' preferences on legislators' behaviors

	<i>All referenda</i> (1)		<i>Mandatory referenda</i> (2)		<i>Facultative referenda</i> (3)		<i>Initiatives</i> (4)		<i>District voted as Switzerland</i> (5)	
	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>
(Intercept)	0.3334*** (0.0905)	0.5826	1.0718*** (0.1872)	0.7449	0.4861*** (0.0945)	0.6192	-0.7715*** (0.0578)	0.3161	0.1416** (0.0692)	0.5353
Constituents vote YES	0.7676*** (0.0720)	0.1679	0.7200*** (0.1637)	0.1122	0.5415*** (0.1020)	0.1173	1.0380*** (0.1056)	0.2501	0.9320*** (0.0657)	0.2099
RefMandatory	0.7016*** (0.0427)	0.1553							0.7481*** (0.0438)	0.1735
RefInitiative	-1.0661*** (0.1263)	-0.258							-0.8859*** (0.1162)	-0.2133
Brier Score	0.2001		0.1331		0.2056		0.22			0.1977
Nagelkerke R2	0.2425		0.0189		0.0181		0.0398			0.257
N	17674 (102)		3147 (18)		5916 (34)		8611 (50)			15980 (102)

Notes: *** indicates a significance level of below 1 %; ** indicates a significance level between 1 and 5 %; * indicates a significance level between 5 and 10 %. Robust standard errors for logistic models using clustering at district level are given in parenthesis below the coefficient. Discrete effects represent the effects on the probability to observe the dependent variable for change in the independent variables from 0 to 1 (all other variables set to 0). Discrete effects for the intercepts represent the baseline probability to observe a yes-vote. Facultative referenda form the omitted category in specifications (1) and (5).

Table 4: Influence of constituents' preferences on legislators' behaviors: Explaining divergence

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>	<i>Coef.</i>	<i>Discrete Effect</i>
(Intercept)	0.3209*** (0.0921)	0.5795	0.3260*** (0.0921)	0.58079	0.3356*** (0.0921)	0.58311	0.3252*** (0.0903)	0.58058	0.6361*** (0.1096)	0.65387	0.3759*** (0.0957)	0.59289	0.3375*** (0.0954)	0.58359
Constituents vote YES	0.8432*** (0.0767)	0.1825	0.7863*** (0.0736)	0.1718	0.8112*** (0.0785)	0.1758	0.7760*** (0.0716)	0.1699	0.1381 (0.1107)	0.0306	0.7714*** (0.0737)	0.1661	0.8377*** (0.0824)	0.1805
Urban (base)	0.1645 (0.1798)	0.0083												
Constituents YES * Urban	-0.7526** (0.3527)	0.1596												
Density (base)		2.7e-05 (2.2e-05)	0.0057											
Constituents YES * Density		-0.0001* (3.4e-05)	0.1661											
Income (base)			8.8e-09 (2.7e-06)	2.7e-05										
Constituents YES * Income			-9.3e-06** (4.5e-06)	0.1539										
Age (base)							-0.0208*** (0.0067)	-0.0391						
Constituents YES * Age							0.0246*** (0.0083)	0.1753						
CenterParty (base)									-0.6993*** (0.0665)	-0.1697				
Constituents YES * CenterParty									1.8464*** (0.1714)	0.2184				
TimeToRef (base)											-0.0003* (0.0002)	-0.0092		
Constituents YES * TimeToRef											-0.0010*** (0.0003)	0.1341		
Seats (base)													0.0037 (0.0029)	0.0097
Constituents YES * Seats													-0.0184*** (0.0042)	0.1505
RefType	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Brier Score	0.1999	0.2001	0.1999	0.1999	0.1995	0.1958	0.1998	0.1997						
Nagelkerke R2	0.2439	0.2426	0.2439	0.2439	0.2458	0.2785	0.2441	0.2449						
N	17674 (102)	17674 (102)	17674 (102)	17674 (102)	17674 (102)	17674 (102)	17674 (102)	17674 (102)						

Notes: *** indicates a significance level of below 1 %; ** indicates a significance level between 1 and 5 %; * indicates a significance level between 5 and 10 %. Robust standard errors for logistic models using clustering at district level are given in parenthesis below the coefficient. Facultative referenda form the omitted category. Discrete effects represent the effects on the probability to observe the dependent variable for change in the independent variables from zero to one standard deviation (to one) for continuous (discrete) variables while all other variables set to zero. Discrete effects for the intercepts represent the baseline probability to observe a yes-vote. For interaction terms all continuous variables have been standardized such that their median equals zero. Discrete effects of interaction terms represent the change from a situation where both variables are zero to a situation where constituents vote "yes" and the other variable increases by one standard deviation (by one) for continuous (discrete) variables.

Appendix Table A1: Referenda in Switzerland (detailed)

<i>Original topic of referendum</i>	<i>Date</i>	<i>% yes and type</i>
Volksinitiative «Gegen Kampfjetlärm in Tourismusgebieten» Initiative populaire du 03.11.2005 'Contre le bruit des avions de combat à réaction dans les zones touristiques» Iniziativa popolare del 03.11.2005 'Contro il rumore dei velivoli da combattimento nelle regioni turistiche»	24.02.08	31.92 initiative
Bundesgesetz über die Verbesserung der steuerlichen Rahmenbedingungen für unternehmerische Tätigkeiten und Investitionen Loi fédérale du 23.03.2007 sur l'amélioration des conditions fiscales applicables aux activités entrepreneuriales et aux investissements (loi sur la réforme de l'imposition des entreprises II) Legge federale del 23.03.2007 sul miglioramento delle condizioni quadro fiscali per le attività e gli investimenti imprenditoriali (legge sulla riforma II dell'imposizione delle imprese)	24.02.08	50.53 facultative
Bundesgesetz über die Invalidenversicherung Modification du 6.10.2006 de la loi fédérale sur l'assurance-invalidité (LAI) Modifica del 6.10.2006 della legge federale sull'assicurazione per l'invalidità (LAI)	17.06.07	59.09 facultative
Volksinitiative «Für eine soziale Einheitskrankenkasse» Initiative populaire du 09.12.2004 'Pour une caisse maladie unique et sociale» Iniziativa popolare del 09.12.2004 'Per una cassa malati unica e sociale»	11.03.07	28.76 initiative
Bundesgesetz über die Zusammenarbeit mit den Staaten Osteuropas Loi fédérale du 24.03.2006 sur la coopération avec les Etats d'Europe de l'Est Legge federale del 24.03.2006 sulla cooperazione con gli Stati dell'Europa dell'Est	26.11.06	53.42 facultative
Bundesgesetz über die Familienzulagen Loi fédérale du 24.03.2006 sur les allocations familiales (loi sur les allocations familiales, LAFam) Legge federale del 24.03.2006 sugli assegni familiari (legge sugli assegni familiari, LAFam)	26.11.06	67.98 facultative
Volksinitiative «Nationalbankgewinne für die AHV» Initiative populaire du 09.10.2002 'Bénéfices de la Banque nationale pour l'AVS» Iniziativa popolare del 09.10.2002 'Utili della Banca nazionale per l'AVS»	24.09.06	41.74 initiative
Bundesgesetz über die Ausländerinnen und Ausländer Loi fédérale du 16.12.2005 sur les étrangers (LEtr) Legge federale del 16.12.2005 sugli stranieri (LStr)	24.09.06	67.97 facultative
Änderung des Asylgesetzes Modification du 16.12.2005 de la loi sur l'asile (LAsi) Modifica del 16.12.2005 della legge sull'asilo (LAsi)	24.09.06	67.76 facultative
Bundesbeschluss über die Neuordnung der Verfassungsbestimmungen zur Bildung Arrêté fédéral du 16.12.2005 modifiant les articles de la Constitution sur la formation Decreto federale del 16.12.2005 sul nuovo ordinamento delle disposizioni costituzionali nel settore della formazione	21.05.06	85.58 obligatory
Volksinitiative «für Lebensmittel aus gentechnikfreier Landwirtschaft» Arrêté fédéral concernant l'initiative populaire «pour des aliments produits sans manipulations génétiques» Decreto federale concernente l'iniziativa popolare «per alimenti prodotti senza manipolazioni genetiche»	27.11.05	55.67 initiative
Arbeitsgesetz (Ladenöffnungszeiten in Zentren des öffentlichen Verkehrs) Loi fédérale sur le travail dans l'industrie, l'artisanat et le commerce (Loi sur le travail) Legge federale sul lavoro nell'industria, nell'artigianato e nel commercio (Legge sul lavoro)	27.11.05	50.56 facultative
Bundesbeschluss über die Ausdehnung des Personenfreizügigkeitsabkommens auf die neuen EU-Staaten und über die Revision der flankierenden Massnahmen Arrêté fédéral portant approbation et mise en oeuvre du protocole relatif à l'extension de l'accord entre la Confédération suisse, d'une part, et la Communauté européenne et ses Etats membres, d'autre part, sur la libre circulation des personnes aux nouve Decreto federale che approva e traspone nel diritto svizzero, mediante revisione delle misure collaterali, il Protocollo concluso con la Comunità europea e i suoi Stati membri relativo all'estensione dell'Accordo sulla libera circolazione delle	25.09.05	55.98 facultative
Bundesbeschluss über die Genehmigung und die Umsetzung der bilateralen Abkommen zwischen der Schweiz und der EU über die Assoziierung an Schengen und Dublin Arrêté fédéral du 17.12.2004 portant approbation et mise en oeuvre des accords bilatéraux d'association à l'Espace Schengen et à l'Espace Dublin Decreto federale del 17.12.2004 che approva e traspone nel diritto svizzero gli accordi bilaterali con l'UE per l'associazione della Svizzera alla normativa di Schengen e Dublino	05.06.05	54.63 facultative
Bundesgesetz über die eingetragene Partnerschaft gleichgeschlechtlicher Paare (Partnerschaftsgesetz, PartG) Loi fédérale du 18.06.2004 sur le partenariat enregistré entre personnes du même sexe (loi sur le partenariat, Lpart) Legge federale del 18.06.2004 sull'unione domestica registrata di coppie omosessuali (legge sull'unione domestica registrata, LUD)	05.06.05	58.04 facultative
Bundesbeschluss zur Neugestaltung des Finanzausgleichs und der Aufgabenteilung zwischen Bund und Kantonen (NFA) Arrêté fédéral du 03.10.2003 concernant la réforme de la péréquation financière et de la répartition des tâches entre la Confédération et les cantons (RPT) Decreto federale del 03.10.2003 concernente la nuova impostazione della perequazione finanziaria e della ripartizione dei compiti tra Confederazione e Cantoni (NPC)	28.11.04	64.37 obligatory
Bundesbeschluss über eine neue Finanzordnung Arrêté fédéral du 19.03.2004 sur un nouveau régime financier Decreto federale del 19.03.2004 concernente un nuovo ordinamento finanziario	28.11.04	73.81 obligatory

Bundesgesetz über die Forschung an embryonalen Stammzellen Loi fédérale du 19.12.2003 relative à la recherche sur les cellules souches embryonnaires (Loi relative à la recherche sur les cellules souches, LRCS) Legge federale del 19.12.2003 concernente la ricerca sugli embrioni soprannumerari e le cellule staminali embrionali (Legge sulla ricerca embrionale, LRE)	28.11.04	66.39 facultative
Bundesbeschluss über die ordentliche Einbürgerung sowie über die erleichterte Einbürgerung junger Ausländerinnen und Ausländer der zweiten Generation Arrêté fédéral du 03.10.2003 sur la naturalisation ordinaire et sur la naturalisation facilitée des jeunes étrangers de la deuxième génération Decreto federale del 03.10.2003 sulla naturalizzazione ordinaria e la naturalizzazione agevolata dei giovani stranieri della seconda generazione	26.09.04	43.24 obligatory
Bundesbeschluss über den Bürgerrechtserwerb von Ausländerinnen und Ausländern der dritten Generation Arrêté fédéral du 03.10.2003 sur l'acquisition de la nationalité par les étrangers de la troisième génération Decreto federale del 03.10.2003 sull'acquisto della cittadinanza degli stranieri della terza generazione	26.09.04	48.37 obligatory
Volksinitiative 'Postdienst für alle' Initiative populaire du 26.04.2002 'Services postaux pour tous' Iniziativa popolare del 26.04.2002 'Servizi postali per tutti'	26.09.04	49.77 initiative
Bundesgesetz über die Erwerbsersatzordnung für Dienstleistende in Armee, Zivildienst und Zivilschutz (Erwerbsersatzgesetz, EOG) Modification du 03.10.2003 de la loi fédérale sur le régime des allocations pour perte de gain en faveur des personnes servant dans l'armée, dans le service civil ou dans la protection civile (Loi sur les allocations pour perte de gain, LAPG) Modifica del 03.10.2003 della legge federale sulle indennità di perdita di guadagno in caso di servizio militare, servizio civile o servizio di protezione civile (Legge sulle indennità di perdita di guadagno, LIPG)	26.09.04	55.45 facultative
Bundesgesetz über die Alters- und Hinterlassenenversicherung (11. AHV-Revision) Loi fédérale sur l'assurance-vieillesse et survivants (LAVS) (11e révision de l'AVS) Legge federale sull'assicurazione per la vecchiaia e per i superstiti (LAVS) (11a revisione dell'AVS)	16.05.04	32.1 facultative
Bundesbeschluss über die Finanzierung der AHV/IV durch Anhebung der Mehrwertsteuersätze Arrêté fédéral du 03.10.2004 sur le financement de l'AVS/AI par le biais d'un relèvement de la taxe sur la valeur ajoutée Decreto federale del 03.10.2003 relativo al finanziamento dell'AVS/AI mediante l'aumento delle aliquote dell'imposta sul valore aggiunto	16.05.04	31.42 obligatory
Gegenentwurf zur Volksinitiative «Avanti – für sichere und leistungsfähige Autobahnen» Contre-projet de l'Assemblée fédérale du 03.10.2003 relatif à l'Initiative populaire «Avanti - pour des autoroutes sûres et performantes» Controprogetto dell'Assemblea federale del 03.10.2003 relativo all'Iniziativa popolare «Avanti - per autostrade sicure ed efficienti»	08.02.04	37.2 initiative (cp)
Obligationenrecht (Miete). Änderung Code des obligations (Bail à loyer) Codice delle obbligazioni (Locazione)	08.02.04	35.93 facultative
Bundesgesetz über die Armee und die Militärverwaltung (Armee XXI) Loi fédérale sur l'armée et l'administration militaire (Loi sur l'armée, LAAM), Modification Legge federale sull'esercito e sull'amministrazione militare (Legge militare, LM), Modifica	18.05.03	76.04 facultative
Bundesgesetz über den Bevölkerungsschutz und den Zivilschutz Loi fédérale sur la protection de la population et sur la protection civile (LPPCi) Legge federale sulla protezione della popolazione e sulla protezione civile (LPPC)	18.05.03	80.56 facultative
Volksinitiative «Ja zu fairen Mieten» Initiative populaire «pour des loyers loyaux» Iniziativa popolare «Per delle pigioni corrette»	18.05.03	32.73 initiative
Volksinitiative «für einen autofreien Sonntag pro Jahreszeit - ein Versuch für vier Jahre» Initiative populaire «Pour un dimanche sans voitures par saison - un essai limité à quatre ans (Initiative des dimanches)» Iniziativa popolare «per una domenica senz'auto ogni stagione - una prova per quattro anni (iniziativa per le domeniche)»	18.05.03	37.65 initiative
Volksinitiative «Gesundheit muss bezahlbar bleiben» Initiative populaire «La santé à un prix abordable (initiative-santé)» Iniziativa popolare «La salute a prezzi accessibili (iniziativa sulla salute)»	18.05.03	27.09 initiative
Volksinitiative «Gleiche Rechte für Behinderte» Initiative populaire «Droits égaux pour les personnes handicapées» Iniziativa popolare «Parità di diritti per i disabili»	18.05.03	37.67 initiative
Volksinitiative «Strom ohne Atom - Für eine Energiewende und die schrittweise Stilllegung der Atomkraftwerke» Initiative populaire «Sortir du nucléaire - Pour un tournant dans le domaine de l'énergie et pour la désaffectation progressive des centrales nucléaires (Sortir du nucléaire)» Iniziativa popolare «Corrente senza nucleare - Per una svolta energetica e la disattivazione progressiva delle centrali nucleari (Corrente senza nucleare)»	18.05.03	33.71 initiative
Volksinitiative «MoratoriumPlus - Für die Verlängerung des Atomkraftwerk-Baustopps und die Begrenzung des Atomrisikos» Initiative populaire «Moratoire-plus - Pour la prolongation du moratoire dans la construction de centrales nucléaires et la limitation du risque nucléaire (Moratoire-plus)» Iniziativa popolare «Moratoria più - Per la proroga del blocco della costruzione di centrali nucleari e il contenimento del rischio nucleare (Moratoria più)»	18.05.03	41.6 initiative

Volksinitiative «für ein ausreichendes Berufsbildungsangebot» Initiative populaire «Pour une offre appropriée en matière de formation professionnelle (Initiative pour des places d'apprentissage)» Iniziativa popolare federale «per un'offerta appropriata di posti di tirocinio (Iniziativa sui posti di tirocinio)»	18.05.03	31.61 initiative
Bundesbeschluss über die Änderung der Volksrechte Arrêté fédéral relatif à la révision des droits populaires Decreto federale concernente la revisione dei diritti popolari	09.02.03	70.35 obligatory
Bundesgesetz über die Anpassung der kantonalen Beiträge an Spitalbehandlungen Loi fédérale sur l'adaptation des participations cantonales aux coûts des traitements hospitaliers dispensés dans le canton selon la loi fédérale sur l'assurance-maladie Legge federale sull'adeguamento dei contributi cantonali per le cure stazionarie all'interno dei Cantoni in base alla legge federale sull'assicurazione malattie	09.02.03	77.36 facultative
Volksinitiative «gegen Asylrechtsmissbrauch» Initiative populaire «contre les abus dans le droit d'asile» Iniziativa popolare «contro gli abusi in materia di asilo»	24.11.02	49.91 initiative
Bundesgesetz über die obligatorische Arbeitslosenversicherung und die Insolvenzentschädigung Modification de la loi fédérale sur l'assurance-chômage obligatoire et l'indemnité en cas d'insolvabilité Modifica della legge federale sull'assicurazione obbligatoria contro la disoccupazione e l'indennità per insolvenza	24.11.02	56.1 facultative
Volksinitiative «Überschüssige Goldreserven in den AHV-Fonds» Initiative populaire «pour le versement au fonds AVS des réserves d'or excédentaires de la Banque nationale suisse» Iniziativa popolare «per destinare le riserve d'oro eccedentarie della Banca nazionale svizzera al Fondo AVS»	22.09.02	46.37 initiative
Gold für AHV, Kantone und Stiftung (Gegenvorschlag zur Goldinitiative) Contre-projet: «L'or à l'AVS, aux cantons et à la Fondation» Controprogetto: «L'oro all'AVS, ai Cantoni e alla Fondazione»	22.09.02	46.39 initiative (cp)
Elektrizitätsmarktgesetz Loi sur le marché de l'électricité (LME) Legge sul mercato dell'energia elettrica (LMEE)	22.09.02	47.42 facultative
Schweizerisches Strafgesetzbuch (Schwangerschaftsabbruch, Fristenregelung) Modification du code pénal suisse (Interruption de grossesse) Modifica del Codice penale svizzero (Interruzione della gravidanza)	02.06.02	72.15 facultative
Volksinitiative «für Mutter und Kind - für den Schutz des ungeborenen Kindes und für die Hilfe an seine Mutter in Not» Initiative populaire «pour la mère et l'enfant» Iniziativa popolare «per madre e bambino»	02.06.02	18.25 initiative
Volksinitiative «für den Beitritt der Schweiz zur Organisation der Vereinten Nationen (UNO)» Initiative populaire fédérale «pour l'adhésion de la Suisse à l'Organisation des Nations Unies (ONU)» Iniziativa popolare federale «per l'adesione della Svizzera all'Organizzazione delle Nazioni Unite (ONU)»	03.03.02	54.61 initiative
Volksinitiative «für eine kürzere Arbeitszeit» Initiative populaire fédérale «pour une durée du travail réduite» Iniziativa popolare federale «per una durata ridotta del lavoro»	03.03.02	25.37 initiative
Bundesbeschluss über eine Schuldenbremse Arrêté fédéral concernant un frein à l'endettement Decreto federale sul freno all'indebitamento	02.12.01	84.74 obligatory
Volksinitiative «für eine gesicherte AHV - Energie statt Arbeit besteuern!» Initiative populaire «pour garantir l'AVS - taxer l'énergie et non le travail!» Iniziativa popolare «per garantire l'AVS - tassare l'energia e non il lavoro!»	02.12.01	22.86 initiative
Volksinitiative «für eine glaubwürdige Sicherheitspolitik und eine Schweiz ohne Armee» Initiative populaire «pour une politique de sécurité crédible et une Suisse sans armée» Iniziativa popolare «per una politica di sicurezza credibile e una Svizzera senza esercito»	02.12.01	21.9 initiative
Volksinitiative «Solidarität schafft Sicherheit: Für einen freiwilligen zivilen Friedensdienst (ZFD)» Initiative populaire «La solidarité crée la sécurité: pour un service civil volontaire pour la paix (SCP)» Iniziativa popolare «la solidarietà crea sicurezza: per un servizio civile volontario per la pace (SCP)»	02.12.01	23.21 initiative
Volksinitiative «für eine Kapitalgewinnsteuer» Initiative populaire «pour un impôt sur les gains en capital» Iniziativa popolare «per un'imposta sugli utili da capitale»	02.12.01	34.11 initiative
Bundesgesetz über die Armee und die Militärverwaltung (Bewaffnung) Modification du 06.10.2000 de la loi fédérale sur l'armée et l'administration militaire (LAAM) (Armement) Modifica del 06.10.2000 della legge federale sull'esercito e sull'amministrazione militare (Legge militare, LM) (Armamento)	10.06.01	50.99 facultative
Bundesgesetz über die Armee und die Militärverwaltung (Ausbildungszusammenarbeit) Modification du 06.10.2000 de la loi fédérale sur l'armée et l'administration militaire (LAAM) (Coopération en matière d'instruction) Modifica del 06.10.2000 della legge federale sull'esercito e sull'amministrazione militare (Legge militare, LM) (Cooperazione in materia di istruzione)	10.06.01	51.14 facultative
Bundesbeschluss über die Aufhebung der Genehmigungspflicht für die Errichtung von Bistümern Arrêté fédéral du 15 décembre 2000 portant abrogation de la disposition constitutionnelle soumettant l'érection des évêchés à l'approbation de la Confédération Decreto federale del 15 dicembre 2000 concernente la soppressione dell'obbligo d'approvazione per l'istituzione di diocesi	10.06.01	64.2 obligatory
Volksinitiative «Ja zu Europa!» Initiative populaire fédérale «Oui à l'Europe!» Iniziativa popolare «Sì all'Europa!»	04.03.01	23.15 initiative

Volksinitiative «für tiefere Arzneimittelpreise» Initiative populaire fédérale «pour des médicaments à moindre prix» Iniziativa popolare «Per farmaci a prezzi più bassi»	04.03.01	30.85 initiative
Volksinitiative «für mehr Verkehrssicherheit durch Tempo 30 innerorts mit Ausnahmen (Strassen für alle)» Initiative populaire fédérale «pour plus de sécurité à l'intérieur des localités grâce à une vitesse maximale de 30 km/h assortie d'exceptions (Rues pour tous)» Iniziativa popolare «per una maggior sicurezza stradale grazie alla velocità massima dei 30 km/h nelle località, con eccezioni (Strade per tutti)»	04.03.01	20.3 initiative
Volksinitiative «für eine Flexibilisierung der AHV - gegen die Erhöhung des Rentenalters für Frauen» Initiative populaire «pour un assouplissement de l'AVS - contre le relèvement de l'âge de la retraite des femmes» Iniziativa popolare «a favore di un'AVS flessibile - contro l'aumento dell'età di pensionamento per le donne»	26.11.00	39.47 initiative
Volksinitiative «für ein flexibles Rentenalter ab 62 für Frau und Mann» Initiative populaire «pour une retraite à la carte dès 62 ans, tant pour les femmes que pour les hommes» Iniziativa popolare «per un'età pensionabile flessibile: dai 62 anni per donne e uomini»	26.11.00	46.02 initiative
Volksinitiative «Sparen beim Militär und der Gesamtverteidigung - für mehr Frieden und zukunftsgerichtete Arbeitsplätze» Initiative populaire «Economiser dans l'armée et la défense générale - pour davantage de paix et d'emplois d'avenir» Iniziativa popolare «Risparmi nel settore militare e della difesa integrata - per più pace e posti di lavoro con un futuro»	26.11.00	37.62 initiative
Volksinitiative «für tiefere Spitalkosten» Initiative populaire «pour des coûts hospitaliers moins élevés» Iniziativa popolare «per costi ospedalieri più bassi»	26.11.00	17.89 initiative
Bundespersonalgesetz Loi sur le personnel de la Confédération (LPers) Legge sul personale federale (LPers)	26.11.00	66.83 facultative
Volksinitiative «für einen Solarrappen» Initiative populaire «pour l'introduction d'un centime solaire (Initiative solaire)» Iniziativa popolare «per l'introduzione di un centesimo solare» (Iniziativa solare)	24.09.00	31.26 initiative
Gegenentwurf Verfassungsartikel über eine Förderabgabe für erneuerbare Energien Contre-projet: Article constitutionnel sur une redevance pour l'encouragement des énergies renouvelables Controprogetto: Articolo costituzionale sulla tassa di incentivazione per le energie rinnovabili	24.09.00	45.28 initiative (cp)
Verfassungsartikel über eine Energielenkungsabgabe für die Umwelt (Gegenentwurf zur zurückgezogenen Energie-Umwelt-Initiative) Article constitutionnel sur une redevance incitative sur l'énergie en faveur de l'environnement (contre-projet à l'initiative énergie et environnement, qui a été retirée) Articolo costituzionale sulla tassa di incentivazione sull'energia per l'ambiente (controprogetto concernente l'iniziativa energia e ambiente che è stata ritirata)	24.09.00	44.51 initiative (cp)
Volksinitiative «für eine Regelung der Zuwanderung» Initiative populaire «pour une réglementation de l'immigration» Iniziativa popolare «per una regolamentazione dell'immigrazione»	24.09.00	36.2 initiative
Volksinitiative «Mehr Rechte für das Volk dank dem Referendum mit Gegenvorschlag» Initiative populaire «pour davantage de droits au peuple grâce au référendum avec contre-proposition» Iniziativa popolare «Più diritti per il Popolo grazie al referendum con controproposta»	24.09.00	34.1 initiative
Bundesbeschluss über die Genehmigung der sektoriellen Abkommen zwischen der Schweizerischen Eidgenossenschaft einerseits und der Europäischen Gemeinschaft andererseits Arrêté fédéral portant approbation des accords sectoriels entre, d'une part, la Confédération suisse et, d'autre part, la Communauté européenne ainsi que, le cas échéant, ses Etats membres ou la Communauté européenne de l'énergie atomique Decreto federale che approva gli accordi settoriali fra la Confederazione Svizzera da una parte e la Comunità europea nonché eventualmente i suoi Stati membri o la Comunità europea dell'energia atomica dall'altra	21.05.00	67.19 facultative
Bundesbeschluss über die Justizreform Arrêté fédéral relatif à la réforme de la justice Decreto federale sulla riforma giudiziaria	12.03.00	86.36 obligatory
Volksinitiative «für Beschleunigung der direkten Demokratie (Behandlungsfristen für Volksinitiativen in Form eines ausgearbeiteten Entwurfs)» Initiative populaire fédérale «pour une démocratie directe plus rapide (Délai de traitement des initiatives populaires présentées sous forme de projet rédigé de toutes pièces)» Iniziativa popolare «per accelerare la democrazia diretta (termini di trattazione per le iniziative popolari in forma di progetto elaborato)»	12.03.00	30 initiative
Volksinitiative «für eine gerechte Vertretung der Frauen in den Bundesbehörden (Initiative 3. März)» Initiative populaire fédérale «pour une représentation équitable des femmes dans les autorités fédérales (Initiative du 3 mars)» Iniziativa popolare federale «per un'equa rappresentanza delle donne nelle autorità federali (Iniziativa 3 marzo)»	12.03.00	17.97 initiative
Volksinitiative «zum Schutze des Menschen vor Manipulationen in der Fortpflanzungstechnologie (Initiative für menschenwürdige Fortpflanzung [FMF])» Initiative populaire fédérale «pour la protection de l'être humain contre les techniques de reproduction artificielle (Initiative pour une procréation respectant la dignité humaine [PPD])» Iniziativa popolare «per la protezione dell'essere umano dalle manipolazioni nella tecnologia riproduttiva (Iniziativa per una riproduzione rispettosa della dignità umana [RRD])»	12.03.00	28.24 initiative

Volksinitiative «für die Halbierung des motorisierten Strassenverkehrs zur Erhaltung und Verbesserung von Lebensräumen (Verkehrshalbierungs-Initiative)» Initiative populaire fédérale «visant à réduire de moitié le trafic routier motorisé afin de maintenir et d'améliorer des espaces vitaux (initiative pour la réduction du trafic)» Iniziativa popolare «per il dimezzamento del traffico stradale motorizzato, allo scopo di salvaguardare e di migliorare gli spazi vitali (Iniziativa per dimezzare il traffico)»	12.03.00	21.33 initiative
Asylgesetz Loi sur l'asile (LAsi) Legge sull'asilo (LAsi)	13.06.99	70.59 facultative
Bundesbeschluss über dringliche Massnahmen im Asyl- und Ausländerbereich Arrêté fédéral sur les mesures d'urgence dans le domaine de l'asile et des étrangers (AMU) Decreto federale concernente misure urgenti nell'ambito dell'asilo e degli stranieri (DMAS)	13.06.99	70.84 facultative
Bundesbeschluss über die ärztliche Verschreibung von Heroin Arrêté fédéral sur la prescription médicale d'héroïne Decreto federale concernente la prescrizione medica di eroina	13.06.99	54.42 facultative
Bundesgesetz über die Invalidenversicherung Loi fédérale sur l'assurance-invalidité (LAI) Legge federale sull'assicurazione per l'invalidità (LAI)	13.06.99	30.29 facultative
Bundesgesetz über die Mutterschaftsversicherung Loi fédérale sur l'assurance-maternité Legge federale sull'assicurazione per la maternità	13.06.99	38.99 facultative
Bundesbeschluss über eine neue Bundesverfassung Arrêté fédéral relatif à une mise à jour de la Constitution fédérale Decreto federale su una nuova Costituzione federale	18.04.99	59.16 obligatory
Bundesbeschluss über die Änderung der Voraussetzung für die Wählbarkeit in den Bundesrat Arrêté fédéral concernant la modification des conditions d'éligibilité au Conseil fédéral Decreto federale concernente la modifica delle condizioni di eleggibilità al Consiglio federale	07.02.99	74.67 obligatory
Bundesbeschluss betreffend die Verfassungsbestimmung über die Transplantationsmedizin Arrêté fédéral concernant un article constitutionnel sur la médecine de la transplantation Decreto federale concernente un articolo costituzionale sulla medicina di trapianti	07.02.99	87.77 obligatory
Volksinitiative «Wohneigentum für alle» Initiative populaire fédérale «Propriété du logement pour tous» Iniziativa popolare «abitazione in proprietà per tutti»	07.02.99	41.32 initiative
Bundesgesetz über die Raumplanung Loi fédérale sur l'aménagement du territoire (LAT) Legge federale sulla pianificazione del territorio (LPT)	07.02.99	55.94 facultative
Bundesbeschluss über Bau und Finanzierung von Infrastrukturvorhaben des öffentlichen Verkehrs Arrêté fédéral relatif à la réalisation et au financement des projets d'infrastructure des transports publics Decreto federale concernente la costruzione e il finanziamento dei progetti d'infrastruttura dei trasporti pubblici	29.11.98	63.5 obligatory
Bundesbeschluss über einen befristet geltenden, neuen Getreideartikel Arrêté fédéral sur un nouvel article céréalier de durée limitée Decreto federale concernente un nuovo articolo di validità limitata sui cereali	29.11.98	79.43 obligatory
Volksinitiative «für eine vernünftige Drogenpolitik» Initiative populaire «pour une politique raisonnable en matière de drogue» Iniziativa popolare «per una politica ragionevole in materia di droga»	29.11.98	26.01 initiative
Bundesgesetz über die Arbeit in Industrie, Gewerbe und Handel Loi fédérale sur le travail dans l'industrie, l'artisanat et le commerce (Loi sur le travail) Legge federale sul lavoro nell'industria, nell'artigianato e nel commercio (Legge sul lavoro)	29.11.98	63.38 facultative
Bundesgesetz über eine leistungsabhängige Schwerverkehrsabgabe Loi fédérale concernant une redevance sur le trafic des poids lourds liée aux prestations Legge federale concernente una tassa sul traffico pesante commisurata alle prestazioni	27.09.98	57.2 facultative
Volksinitiative «für preisgünstige Nahrungsmittel und ökologische Bauernhöfe» Initiative populaire «pour des produits alimentaires bon marché et des exploitations agricoles écologiques» Iniziativa popolare «per prodotti alimentari a buon mercato e aziende rurali di coltura ecologica»	27.09.98	22.99 initiative
Volksinitiative «für die 10. AHV-Revision ohne Erhöhung des Rentenalters» Initiative populaire «pour la 10e révision de l'AVS sans relèvement de l'âge de la retraite» Iniziativa popolare «per la 10e revisione dell'AVS senza aumento dell'età di pensionamento»	27.09.98	41.48 initiative
Bundesbeschluss über Massnahmen zum Haushaltsausgleich Arrêté fédéral instituant des mesures visant à équilibrer le budget Decreto federale che istituisce provvedimenti intesi a equilibrare il bilancio	07.06.98	70.7 obligatory
Volksinitiative «zum Schutz von Leben und Umwelt vor Genmanipulation (Gen-Schutz-Initiative)» Initiative populaire «pour la protection de la vie et de l'environnement contre les manipulations génétiques (Initiative pour la protection génétique)» Iniziativa popolare «per la protezione della vita e dell'ambiente dalla manipolazione genetica (Iniziativa protezione	07.06.98	33.29 initiative
Volksinitiative «S.o.S. - Schweiz ohne Schnüffelpolizei» Initiative populaire «S.o.S. - pour une Suisse sans police fouineuse» Iniziativa popolare «S.o.S. - per una Svizzera senza polizia ficcanaso»	07.06.98	24.59 initiative
Bundesbeschluss über die Finanzierung der Arbeitslosenversicherung Arrêté fédéral sur le financement de l'assurance-chômage Decreto federale concernente il finanziamento dell'assicurazione contro la disoccupazione	28.09.97	49.18 facultative

Volksinitiative «Jugend ohne Drogen» Initiative populaire «Jeunesse sans drogue» Iniziativa popolare «Gioventù senza droghe»	28.09.97	29.34 initiative
Volksinitiative «EU-Beitrittsverhandlungen vors Volk!» Initiative populaire fédérale «Négociations d'adhésion à l'UE: que le peuple décide!» Iniziativa popolare «Negoziati d'adesione all'UE: decida il popolo!»	08.06.97	25.95 initiative
Volksinitiative «für ein Verbot der Kriegsmaterialausfuhr» Initiative populaire fédérale «pour l'interdiction d'exporter du matériel de guerre» Iniziativa popolare «per un divieto di esportazione di materiale bellico»	08.06.97	22.5 initiative
Bundesbeschluss über die Aufhebung des Pulverregals Arrêté fédéral concernant la suppression de la régale des poudres Decreto federale concernente la soppressione della regalia delle polveri	08.06.97	82.18 obligatory
Volksinitiative «gegen die illegale Einwanderung» Arrêté fédéral concernant l'Initiative populaire «contre l'immigration clandestine» Decreto federale concernente l'Iniziativa popolare «contro l'immigrazione clandestina»	01.12.96	46.34 initiative
Bundesgesetz über die Arbeit in Industrie, Gewerbe und Handel Loi fédérale sur le travail dans l'industrie, l'artisanat et le commerce (Loi sur le travail) Legge federale sul lavoro nell'industria, nell'artigianato e nel commercio (Legge sul lavoro)	01.12.96	32.97 facultative
Gegenentwurf zur Volksinitiative «Bauern und Konsumenten - für eine naturnahe Landwirtschaft» Contre-projet relatif à l'Initiative populaire «Paysans et consommateurs - pour une agriculture en accord avec la nature» Controprogetto relativo all'Iniziativa popolare «Contadini e consumatori - per un'agricoltura in armonia con la natura»	09.06.96	77.59 initiative (cp)
Bundesbeschluss über den Uebertritt der bernischen Gemeinde Vellerat zum Kanton Jura Arrêté fédéral sur le transfert de la commune bernoise de Vellerat au canton du Jura Decreto federale sul passaggio del Comune bernese di Vellerat al Canton Giura	10.03.96	91.64 obligatory

Table A2: Descriptive Statistics

<i>Variable</i>	<i>Description & Source</i>	<i>Mean</i>	<i>SD</i>
Constituents vote YES	District majority voted "yes" in referendum. Swissvotes Database.	0.4546	0.4980
RefMandatory	Indicator variable: If referendum is mandatory value is 1. Swissvotes Database.	0.1781	0.4999
RefInitiative	Indicator variable: If initiative value is 1. Swissvotes Database.	0.4872	0.4719
Urban	Urbanization rate. Federal Statistical Office.	0.6724	0.2083
Density	Inhabitants per km2. Federal Statistical Office.	509.4	868.0
Age	Member of parliament's age at time of final vote in parliament. Swiss Parliamentary Services.	52.7	7.6
Seats	Canton's number of seats in the national council. Federal Statistical Office.	15.8	10.9
GDPperCapita	Cantonal GDP per Capita in 2005 Swiss Francs. Federal Statistical Office.	52380.0	12520.2
CenterParty	Indicator variable: If member of parliament belongs to the CVP (Christian Democrats) or FDP (Liberals) value is 1. Swiss Parliamentary Services.	0.3736	0.4838
TimeToRef	Days from final decision in parliament to referendum. Swiss Parliamentary Services.	273.9	131.1

Notes: Descriptive statistics are based on 17674 decisions of members of parliament on 102 referenda from 1996 to 2009. Data sources indicated next to variable descriptions.