Party pressure in roll call votes*

Simon Hug† Reto Wüest‡

Paper prepared for presentation at the Annual Meeting of the America Political Science Association, Washington DC, August 29-September 1, 2019

Abstract

Since roll call votes are likely to occur for very specific votes in most parliaments and may influence legislators' voting behavior, assessing what such votes can tell us about legislator preferences has proved to be an important conundrum. Drawing on a unique dataset comprising not published, automatically roll called and requested roll call votes from the lower house of the Swiss parliament, we are able to identify the effects of both roll call voting and selecting particular topics for roll call votes. As we also have information on who requested a roll call, we can assess whether requester identity affects MPs' voting behavior. Based on an IRT model with multiple cutpoints, we find that party pressure is more prevalent in published votes and estimated ideal-points therefore differ when voting behavior is exposed to maximal scrutiny. Thus, we demonstrate that inferences drawn from roll call votes can lead to biased inferences.

* Earlier versions of this paper were prepared for presentation at the Annual Meeting of the Midwest Political Science Association (Chicago, April 3-6, 2014), the Annual Conference of the European Political Science Association (Edinburgh, June 16-18, 2014), the Annual Meeting of the American Political Science Association (Washington D.C., August 28-31, 2014) and at a seminar at the Institute of Political Science, Academia Sinica (Taipei, November 6, 2014). Helpful comments by the discussants David Fisk, Nils Ringe and Kent Tedin and participants at these conferences and by Scott Desposato and Bjørn Høyland, as well as research assistance by Sarah Bütikofer and Fabian Wagner are gratefully acknowledged as is the partial financial support by the Swiss National Science Foundation (Grants No. 100012-111909, 100012-129737 and 100017L-162427).

† Département de science politique et relations internationales, Faculté des sciences de la société; Université de Genève; 40 Bd du Pont d'Arve; 1211 Genève 4; Switzerland; phone ++41 22 379 83 78; email: simon.hug@unige.ch

‡ Department of Comparative Politics, University of Bergen, Christies gate 15, 5007 Bergen, Norway, email: reto.wueest@uib.no

Introduction

Members of democratic legislatures are typically accountable to multiple principals. Most importantly, legislators are accountable to constituents and party leaders, although, depending on the institutional context, they may also be held accountable by presidents and subnational executives (Carey, 2009). As a number of scholars have argued, the extent to which different principals can monitor and eventually sanction legislators depends fundamentally on the amount of information revealed about individual voting decisions (Carrubba, Gabel and Hug, 2008; Carey, 2009; Hug, 2016; Wüest, 2016). While information about legislators' individual voting behavior is readily accessible if votes are taken by roll call,[1] it is more difficult to obtain if individual voting records are not made publicly available. The method by which votes are taken is thus likely to affect legislators' voting calculus: legislators should vote primarily on the basis of their personal policy preferences in signal votes (i.e., unpublished votes), whereas they should have more incentives to take into account the preferences of their principals in roll call votes.

Exploring differences between legislators' behavior in roll call votes and their behavior in signal votes is often complicated by the fact that we lack individual-level voting data for the latter type of votes. In this paper, we analyze a unique data set from the lower chamber of the Swiss parliament (the National Council) containing information on individual voting behavior not only for roll call votes but also for signal votes. Based on these data, we estimate a model that extends the two-cutpoints item-response theory (IRT) model proposed by Clinton, Jackman and Rivers (2004). This models allows us to estimate the pressure that party leaders, on the one hand, and voters, on the other hand, exert on legislators in roll call votes. In addition, comparing the ideal-point estimates with those obtained from a basic IRT-model allows us to assess whether taking into account pressures from the MPs' principals affects our inferences.

In the next section we offer a brief discussion of the literature into which our contribution fits. Then we discuss the theoretical underpinnings before presenting our model and the data that we will employ. Finally, we present our empirical results before concluding with a discussion of future avenues for research.

[1] We will use the term "roll call vote" in a broad sense for all votes for which the public can get information on how individual members of parliament voted. For the parliamentary chamber that we study in this paper, such "roll call votes" are (as all other votes) carried out with the help of an electronic voting system, but are subsequently published online .

Literature

In a large plurality of chambers of parliament the important business of voting is only partly visible to the outside world—and even, sometimes, to actors inside the parliamentary chambers (Hug, 2010; Hug, Wegmann and Wüest, 2015; Wüest, 2016). Whether votes are taken by roll call, thus making individual voting decisions visible to actors inside and outside parliament, is likely to matter for the voting behavior of legislators. Focusing on actors inside parliament, Carrubba, Gabel and Hug (2008) propose a game-theoretic model in which party leaders invoke roll call votes in order to discipline party members. Their results show that legislators' behave differently in roll call votes than in signal votes and that the party unity in observed roll call votes is larger than the party unity in unobserved (and undisciplined) signal votes.

This jibes well with work on the US Congress, which demonstrated that what is visible in roll call votes is likely to be distinct from all other votes (e.g., Roberts, 2007). Thus, Lynch and Madonna (2013) alert us to the changes in the way votes are done in Congress (see relatedly Lynch and Madonna, 2019). Similarly, Hug (2010) studies the effect of roll call votes on legislators' behavior empirically by relying on data from the 45th (1995-1999) and 46th (1999-2003) legislative period of the Swiss National Council. Since 1996, the Swiss National Council has recorded legislators' votes by means of an electronic voting system. Until 2007, these individual votes were automatically published in the minutes of the parliament for final passage votes as well as for votes dealing with urgent matters or a law preventing increases in public debt. In addition, individual votes could be published on request by 30 legislators signing a petition for a roll call vote. Otherwise, the individual voting decisions of legislators were not made publicly available. Comparing party unity across automatic roll call votes, requested roll call votes, and unpublished signal votes, Hug (2010) shows that most parties were more unified in automatic roll call votes than in requested roll call votes and signal votes.

Wüest (2016) also relies on vote data from the Swiss National Council to study the effect of roll call votes on legislators' voting behavior. Based on an IRT model and data from the National Council's 47th legislative period (2003-2007), Wüest shows that roll call votes affect the voting behavior of reelection-seeking legislators. A likely reason for this result is that reelection-seeking legislators become more responsive to their principals when their individual votes are made transparent in roll call votes.

Two questions arise from these studies that we would like to address in this paper.

First, do legislators behave differently in roll call votes than in signal votes due to party pressure, voter pressure, or both? Second, do these two types of pressures that principals of members of parliament exert vary across votes? We describe the theory and data on which we rely to answer these questions in the next two sections.

Theory

As Clinton, Jackman and Rivers (2004) nicely discuss, a basic IRT model used to estimate the ideal points of legislators on the basis of their roll-call votes assumes that each vote is independent of all the others. This also implies that legislators only decide on the basis of their ideal points, i.e., their most preferred policy positions, and the locations of the 'yea' and 'nay' outcomes of a vote. To relax this assumption Clinton, Jackman and Rivers (2004) propose for an analysis of votes in the United States Congress an IRT model with two cutpoints. More specifically they propose a model with 'party-specific inducements' that operate if a vote is not lopsided. They assume that in this case the cutpoints will be moved from the one that would be observable if no 'party-specific inducements' were present. As there are only two political parties represented in Congress, and members of each party will be subject to party-specific inducements, only the difference between these 'inducements' is identified.

Clinton, Jackman and Rivers's (2004) two-cutpoints IRT model is tailored for roll-call vote data from parliaments with two parties. More specifically, as it is assumed that in lopsided votes no party influence is exerted, the cutpoints estimated for these votes reflect the traditional cutpoints in the basic IRT model. In close votes, however, an additional utility-shock is modeled that affects only one party. From this it results that in the latter votes two cutpoints are estimated, one for each party.

Applying this approach to parliaments with more than two parties requires adjustments as more than two cutpoints need to be estimated. Høyland (2010) proposes an extension to Clinton, Jackman and Rivers's (2004) two-cutpoints IRT model to make it amenable to the European parliament with more than two party groups (for another application of this extension to the European parliament, see Hug, 2016) by assuming that in legislative votes as opposed to non-legislative ones, (respectively final passage votes as opposed to all other legislative votes as in Hug, 2016) a utility shock is experienced by all MPs and that the cutpoints differ among MPs of different parties

(compared to those without party-group affiliation)[2] by estimating party-vote-specific shifts in the item-difficulty parameters. While this also induces different cutpoints for a set of votes for members of party groups, the fundamentals on which this extension relies are blurred.[3]

Wüest (2016) proposes another model extending the two-cutpoints IRT model of Clinton, Jackman and Rivers (2004) to explore how the voting behavior of Swiss legislators differs depending on whether a vote is taken by a roll call or signal vote. Assuming that the increased transparency brought about by roll call votes may change the voting calculus of reelection-seeking legislators, this model estimates a shift to the item-difficulty parameter in a roll call vote for the subset of reelection-seeking members of each party. The model is identified by assuming a common item-difficulty parameter for all non-reelection-seeking legislators irrespective of whether a vote is taken by a roll call or signal vote.

The model we estimate in this paper builds on the model developed by Wüest (2016). However, while the latter model focuses on pressure exerted by voters (or other principals outside the legislature) in roll call votes, our model takes into account not only voter pressure but also party pressure (or party inducements). As we will describe in more detail below, distinguishing between party leaders and ordinary party members as well as reelection seekers and non-reelection seekers will allow us to disentangle party and voter effects in roll call votes.

Model and Data

A set of legislators, indexed by $i = 1, \ldots, N$, votes on a set of proposals, indexed by $j = 1, \ldots, J$. Assuming a unidimensional policy space, we let $\theta_i \in \mathbb{R}$ denote the ideal point of legislator i and $\zeta_j \in \mathbb{R}$ and $\psi_j \in \mathbb{R}$ the 'yea' and 'nay' positions in the vote on proposal j. Votes are taken either by roll call vote or by signal vote. If a vote is taken by roll call, then the individual voting behavior of legislators is made publicly available. We assume that party leaders and voters are able to monitor and sanction individual legislators' behavior in roll call votes but not in signal votes. Assuming quadratic

[2]These members of the European parliament are assumed not be subject to pressure and thus allow for identification of the 'party-specific inducements' for each party group.

[3]In an earlier version of this paper we used the same approach (results reported in the appendix).

utility functions with independent additive random shocks, legislator i's utilities in a signal vote are given by

$$u_i^{sig}(\zeta_j) = -(\theta_i - \zeta_j)^2 + \eta_{ij},$$
$$u_i^{sig}(\psi_j) = -(\theta_i - \psi_j)^2 + \nu_{ij}.$$

Hence, the probability that legislator i votes yea rather than nay in a signal vote is

$$\begin{aligned}\Pr(y_{ij}^{sig} = 1) &= \Pr\left(u_i^{sig}(\zeta_j) > u_i^{sig}(\psi_j)\right) \\ &= \Pr\left(\nu_{ij} - \eta_{ij} < 2(\zeta_j - \psi_j)\theta_i - (\zeta_j^2 - \psi_j^2)\right) \\ &= F\Big(\beta_j\theta_i - \alpha_j\Big).\end{aligned}$$

This is the standard two-parameter IRT model (e.g., Clinton, Jackman and Rivers, 2004), where $\beta_j = 2(\zeta_j - \psi_j)$ is the item-discrimination parameter and $\alpha_j = \zeta_j^2 - \psi_j^2$ is the item-difficulty parameter.

Let $p[i]$ denote the party of legislator i and let $\gamma_{p[i]j}^{\zeta} \in \mathbb{R}$ and $\gamma_{p[i]j}^{\psi} \in \mathbb{R}$ be the payoffs that legislator i receives from her party when voting yea and nay, respectively, in a roll call vote on proposal j. Likewise, let $\delta_{p[i]j}^{\zeta} \in \mathbb{R}$ and $\delta_{p[i]j}^{\psi} \in \mathbb{R}$ be the payoffs that i receives from the voters of party $p[i]$ when voting yea and nay, respectively, in a roll call vote on j. The utilities of i in a roll call vote are then given by

$$u_i^{rcv}(\zeta_j) = -(\theta_i - \zeta_j)^2 + \gamma_{p[i]j}^{\zeta} + \delta_{p[i]j}^{\zeta} + \eta_{ij},$$
$$u_i^{rcv}(\psi_j) = -(\theta_i - \psi_j)^2 + \gamma_{p[i]j}^{\psi} + \delta_{p[i]j}^{\psi} + \nu_{ij},$$

and the probability that i votes yea rather than nay in a roll call vote is

$$\begin{aligned}\Pr(y_{ij}^{rcv} = 1) &= \Pr\left(u_i^{rcv}(\zeta_j) > u_i^{rcv}(\psi_j)\right) \\ &= \Pr\left(\nu_{ij} - \eta_{ij} < 2(\zeta_j - \psi_j)\theta_i - (\zeta_j^2 - \psi_j^2) + \gamma_{p[i]j}^{\zeta} - \gamma_{p[i]j}^{\psi} + \delta_{p[i]j}^{\zeta} - \delta_{p[i]j}^{\psi}\right) \\ &= F\left(\beta_j\theta_i - \alpha_j + \gamma_{p[i]j} + \delta_{p[i]j}\right),\end{aligned}$$

where β_j and α_j are again the item-discrimination and item-difficulty parameters and $\gamma_{p[i]j} = \gamma_{p[i]j}^{\zeta} - \gamma_{p[i]j}^{\psi}$ is the net payoff i receives from her party if voting yea rather than nay in a roll call vote on j and $\delta_{p[i]j} = \delta_{p[i]j}^{\zeta} - \delta_{p[i]j}^{\psi}$ is the net payoff i receives from voters if casting a yea vote rather than a nay vote in a roll call vote on j.

Finally, letting $\mathbb{1}\{sig_j = 1\}$ be an indicator function for signal votes and $\mathbb{1}\{rcv_j = 1\}$ be an indicator function for roll call votes, the likelihood function for the data can be written as

$$L(\cdot) = \prod_{i=1}^{N}\prod_{j=1}^{J} \mathbb{1}\{sig_j = 1\}\left\{ F\Big(\beta_j\theta_i - \alpha_j\Big)^{y_{ij}^{sig}} \Big(1 - F\Big(\beta_j\theta_i - \alpha_j\Big)\Big)^{1-y_{ij}^{sig}} \right\}$$
$$+\mathbb{1}\{rcv_j = 1\}\left\{ F\Big(\beta_j\theta_i - \alpha_j + \gamma_{p[i]j} + \delta_{p[i]j}\Big)^{y_{ij}^{rcv}} \right.$$
$$\left. \times\Big(1 - F\Big(\beta_j\theta_i - \alpha_j + \gamma_{p[i]j} + \delta_{p[i]j}\Big)\Big)^{1-y_{ij}^{rcv}} \right\}.$$

We rely on a number of assumptions in order to identify the model. First, we assume that non-reelection-seeking legislators are not subject to voter pressure. This means that $\delta_{p[i]j} = 0$ for all legislators i that do not seek reelection to the next legislative period of the National Council. Second, we assume that there is no party pressure on party leaders and legislators that do not belong to a parliamentary party. Hence, it is $\gamma_{p[i]j} = 0$ if i is the leader of party p or if i is not affiliated to a parliamentary party.[4] Finally, we deal with additive and multiplicative aliasing by normalizing model parameters after estimation and with reflection invariance by using prior information on legislators' party membership and constraining the parameter on that variable (see Bafumi, Gelman, Park and Kaplan, 2005).[5]

We estimate our model based on data from the Swiss National Council. As mentioned above, the Swiss National Council has recorded legislators' votes since 1996. However, until 2007, these individual votes were only published for votes that were automatically roll called or votes for which a roll call vote was requested by at least 30 legislators. While since 2007, legislators' individual votes are fully available for all votes, for the period from 1996 to 2007, the full voting record is only made available

[4]Strictly speaking, party and voter pressure do not have to be equal to 0 for the above-mentioned subsets of legislators for the model to be identified. If they are not, then $\gamma_{p[i]j}$ and $\delta_{p[i]j}$ should be interpreted as the difference between the party pressure and voter pressure, respectively, on the above-mentioned subsets of legislators and the respective pressure on other legislators.

[5]Specifically, we generate the normalized parameters $\tilde{\theta}_i = (\theta_i - \bar{\theta})/s_\theta$, $\tilde{\beta}_j = \beta_j s_\theta$, and $\tilde{\alpha}_j = \alpha_j - \beta_j\bar{\theta}$, where $\bar{\theta}$ and s_θ are the mean and the standard deviation of the estimated θ_i's, and establish the prior distribution $\theta_i \sim N(\mu_{\theta 0} + \mu_{\theta 1}x_i, \sigma_\theta)$, where x_i is equal to -1 if i is a member of a left party, equal to 1 if i is a member of a right party, and equal to 0 otherwise and where hyperparameter $\mu_{\theta 1}$ is constrained to be positive.

for scientific research. As our model requires individual voting data for both roll call votes and signal votes, we rely on data from the 47th legislative period (2003-2007) of the National Council.

In order to estimate our model, we also need information on the identity of party leaders and legislators who did not seek reelection to the 48th legislative period of the National Council. We identified party leaders (i.e., the presidents of the parliamentary party groups) based on information provided by the Swiss parliament and data compiled by Turner-Zwinkels, Huwyler, Bailer, Frech, Manow and Hug (2019) (see Appendix).[6] We defined as non-reelection seekers the incumbent legislators that did not appear on any of the party lists in the 2007 parliamentary election.[7] In our data, there are six party leaders (one for each party group) and 35 non-reelection-seeking legislators.[8]

Results

As discussed above our unique empirical data stems from the Swiss lower chamber, for which we have available individual voting records for both signal and roll call votes. Among the latter one can distinguish between votes that are made public because of the rules of procedure of parliament (see above) and those that were made public because of a request of at least 30 members of parliament.[9] We restrict our analysis to votes

[6]The Swiss parliament provides information on the presidents of parliamentary party groups under `https://www.parlament.ch/de/über-das-parlament/archiv/archiv-fraktionen/fraktionspraesidien-seit-1917` (last accessed on August 20, 2019).

[7]Incumbent legislators that did not appear on a party list in the 2007 election were not coded as non-reelection seekers if (i) they were elected to the cabinet (the Federal Council), (i) they resigned from the National Council because they were elected to a subnational executive or another prestigious position, (iii) they died while in office, or (iv) they resigned from their office due to health reasons.

[8]23 of these 35 legislators are listed as retiring legislators on the website of the Swiss parliament (`https://www.parlament.ch/de/über-das-parlament/archiv/wahlen-im-rueckblick/nationalratswahlen/wahlen-2007`, last accessed on August 20, 2019). For all of the remaining legislators we were able to find newspaper articles that reported on the legislators' resignation from their parliamentary office.

[9]In future iterations of this paper we will include similar analyses of the Swiss upper chamber, as this chamber operates since 2014 under the same rules as the ones used by the lower chamber between 2003 and 2007. As we have access to the full voting record of the upper chamber (see Bailer, Bütikofer and Hug, 2019) for some

in fourteen out of sixteen legislative sessions, as for the two remaining ones we were unable to obtain any information on who requested roll call votes.[10] As we discard all unanimous votes we are left with a total of 2002 votes, 1369 of which were not published, 300 had been published automatically, and for 333 a request for a roll call was lodged.

In Figure 1 we first present a comparison of the ideal-point estimates based on our model with those stemming from a basic IRT model without party inducement.[11] While the means of the posterior distributions of the ideal points from the two models correlate quite strongly, some differences are notable, mostly at the two extremes of the distribution. More precisely, the distribution of ideal points from our model is slightly more compact than the one based on the basic IRT model. It has to be noted, however, that ideal points estimated on the basis of our model at the extreme right come with more uncertainty than the one associated with the estimates from the standard IRT model, while the opposite is true for those on the extreme left.

To assess face validity of our ideal-point estimates we note that the means of the ideal-point distributions per party group correspond to the conventional wisdom regarding the left right position. The Greens (GPS) followed by the Social-democrats (SP) are located to the left,[12], while the Christian-democrats (CVP), as well as the Evangelicals (EVP), are more centrally located, followed more to the right by the Radicals (FDP) and the People's Party (SVP).[13],

sessions of the 49th legislative period (2011-2015) we can implement the same model as used for the lower chamber. As the table in the Appendix regarding incumbents shows, however, we have too few retiring senators to identify all parameters of our model.

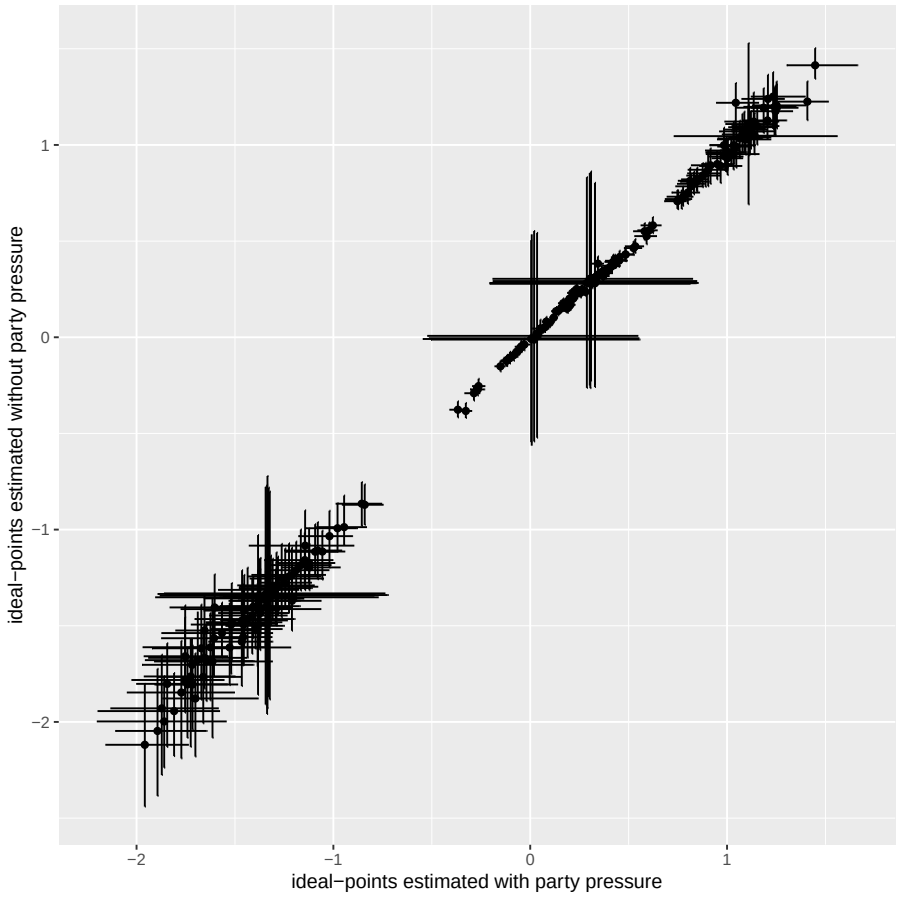
[10] While in the analyses presented in the main text of the current version of the paper, we do not yet take advantage of this information, we will do so in the next iteration of this paper. In the appendix we report on previous analyses using a different model in which we assess whether the identity of the roll-call vote requester affects party pressure.

[11] These models were implemented in JAGS (Plummer, 2010) with priors specified as normal and uninformative. We ran two chains with 6000, respectively 2000 iterations, discarded from each chain the first 1000 iterations and thinned each chain to obtain 1000 values. Gelman and Rubin's (1992) $RHat$ statistic provided reasonable evidence for convergence. The respective values for the deviance information criteria (DIC) are 115692.2 and 126260.2, providing evidence for a lower predictive error rate for our model.

[12] We recall that the prior distribution for the mean value of this latter party group was truncated-normal from above by 0.

[13] Again, we recall that the prior distribution for the mean value of this latter party

Figure 1: Distribution of estimated ideal-points from models with and without party pressure



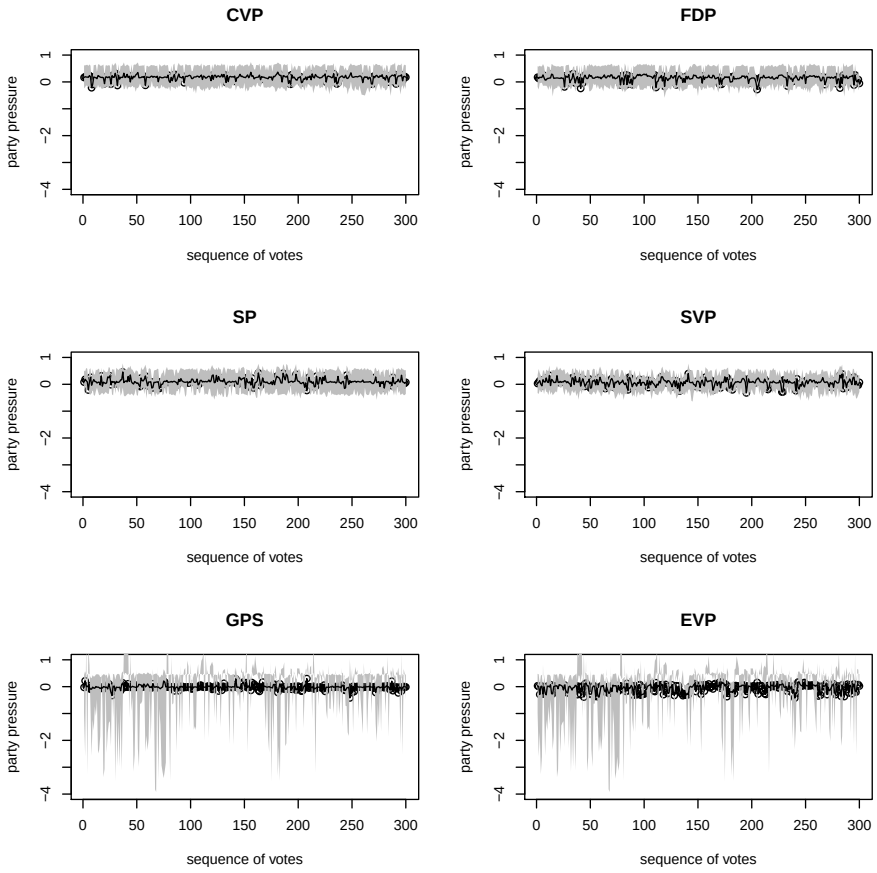
As our main goal is to assess whether in published votes MPs are subject to pressure from their party or voters, we focus in what follows on the parameter estimates which reflect these elements in our model. As these parameters of interest are both party- and vote-specific we depict them for two subsets of votes, namely those automatically published and those for which at least 30 MPs requested a roll call vote.

In Figure 2 we depict sequentially the 95 % credible intervals for our party pressure parameter for all automatically published votes for the six party groups present in the Swiss parliament.[14] The top four panels depict these parameters for the four

group was truncated-normal from below by 0.

[14]While the horizontal axis does present the sequence in which automatically published, respectively requested roll call votes occurred, it does not correspond to mean-

Figure 2: Party pressure in automatically published votes



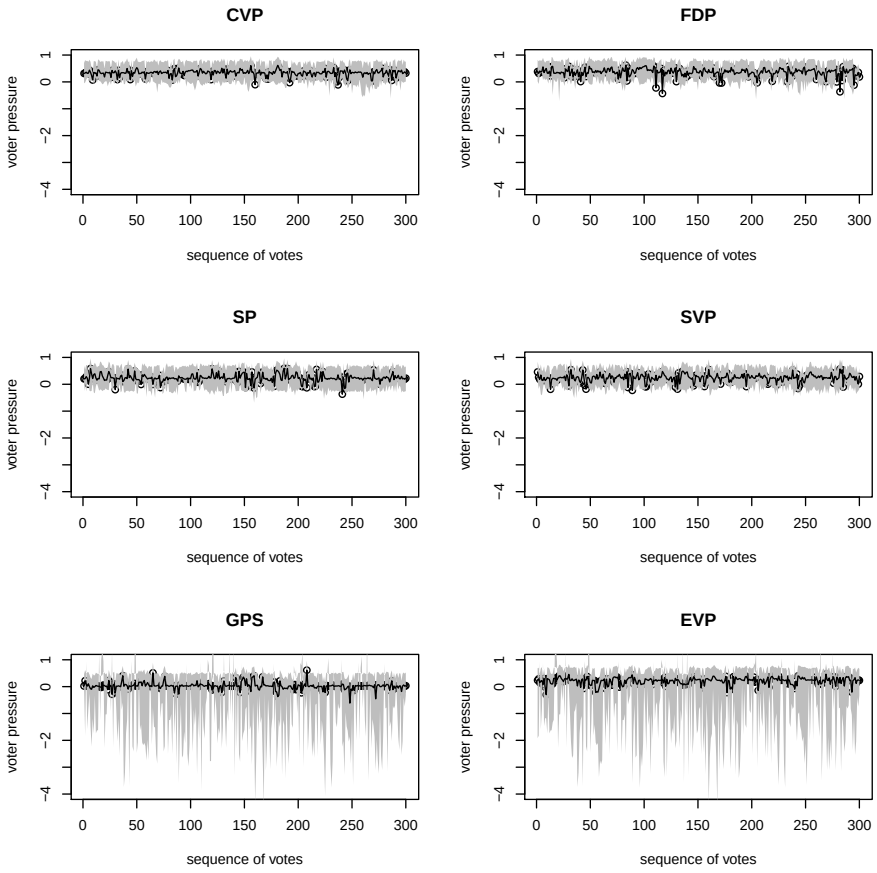
party groups represented in government, while the two lower ones depict the same information for the two party groups not represented in the collegial (and oversized) government. A first insight transpires immediately when comparing these latter two panels with the remaining four: for the party groups not represented in government, the party pressure is estimated with considerable more uncertainty for most of the votes. In large part, this obviously has to do with the fact that these party groups have fewer members, and thus less information is available to estimate party pressure.

A second insight from Figure 2 is that in general the party pressure parameter is positive, but the credible intervals are narrow only in a few votes. Thus, party pressure in automatically published votes, which occur mostly on final passage, is apparently a

ingful time intervals.

marginal phenomenon in the Swiss lower chamber.

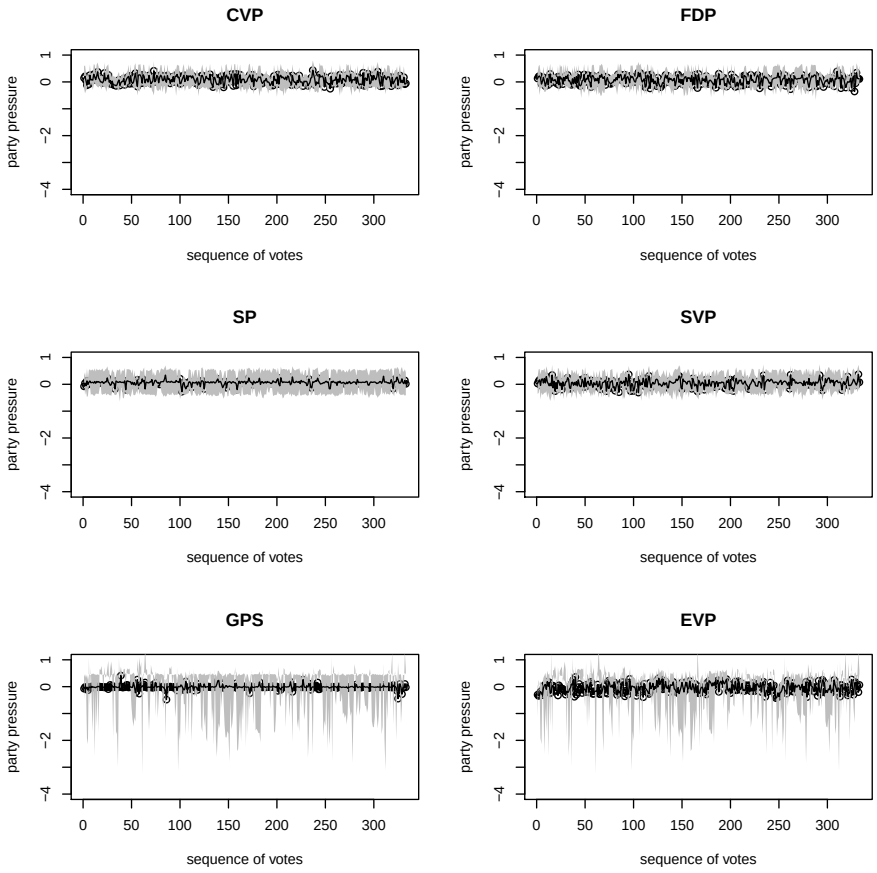
Figure 3: Voter pressure in automatically published votes



In Figure 3 we depict the parameters for the voter pressure. While we find similar patterns as in Figure 2 an important difference is that on average these parameters have higher values than those for party pressure. As these automatically published votes, as mentioned above, are mostly final passage votes, this might be linked to the fact that the final adoption of a bill is more likely to be picked up in the media than votes on amendments (for which transparency requires a request for a roll call vote).

In Figures 4 and 5 we find similar patterns, but on average the values contained in the 95 % credible intervals are smaller and comprise much more often negative values as well. The difference in the extent of pressure is especially notable for the one exerted by voters.

Figure 4: Party pressure in requested roll-call votes

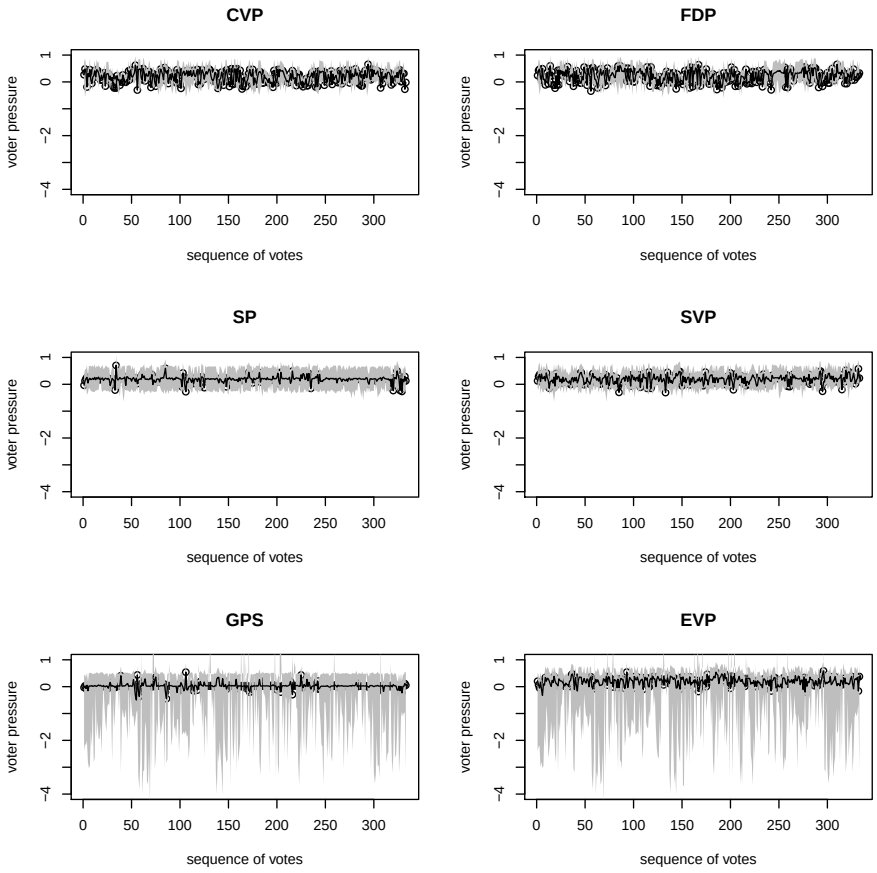


Thus our results seem to suggest that in automatically published votes voter pressure seems to matter more. As these votes are final passage votes, they are already by definition more visible and thus voter concerns appear to be taken more into account by MPs. In requested votes which concern only amendments voter pressure appears, according to our estimates, hardly discernible. Party pressure is also not excessively high, but it is mostly voter pressure that appears no longer to matter.

Conclusion

Roll call votes, by making some of the MPs' business more transparent, allow the latters' principals to monitor their agents behavior. It is likely, however, that such monitoring affects the behavior of MPs. Thus, we proposed in this paper an empirical

Figure 5: Voter pressure in requested roll-call votes



model to capture the effect of two principals of MPs, namely their party and their voters. Taking advantage of data from the Swiss lower chamber covering both signal and roll call votes, we estimate, under the assumption that party leaders and unaffiliated MPs are not subject to party pressure and that it also fails to appear in signal votes, the extent of this pressure. We also estimate, under the assumption that retiring MPs no longer are subject to the voters' whim, the latters' effect on MPs' votes.

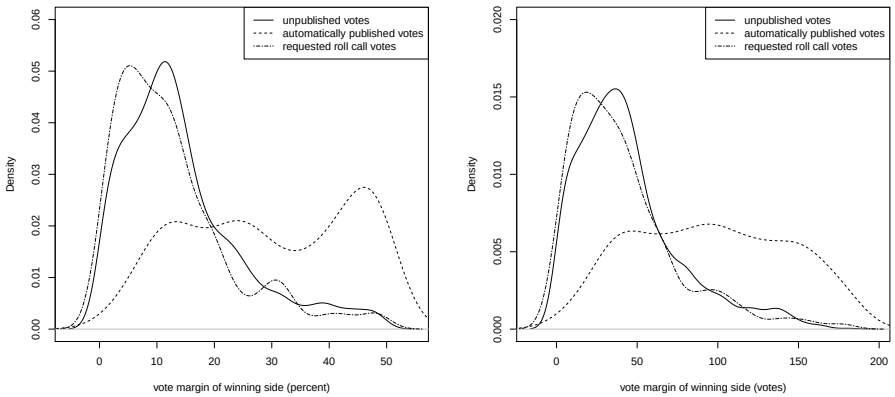
Using this unique data allows us to demonstrate that both party and voter pressure is present in some votes. We also find that the relative importance of these two sets of pressure factors differs between automatically published votes and those requested as roll calls. Our intuition is that this is due to the fact that most automatically published votes are final passage votes, and thus, by their very nature, much more in the public eye.

Given the uniqueness of our data there appear, obviously, two questions concerning the generalizability of our results and our approach, Regarding the former we believe that both party and voter pressure are tantamount in parliamentary behavior. They are likely to vary across parliamentary chambers (see Wüest, 2016) and time. And it is likely that these pressures or these inducements are most likely in votes that are much more under the scrutiny of parties and the general public.

This raises, however, the question whether our empirical model can be of help in demonstrating in other contexts that parties and voters exert pressure. We were able to ensure identification of these effects, in part, because of our access to signal votes. Under the assumption that lopsided votes are equally unaffected by party (and voter) pressure, as is done by Clinton, Jackman and Rivers (2004), allows applying our model accross a broader set of contexts.

An interesting future avenue of research is implied even for analyzing our Swiss data. More specifically, as Figure 6 nicely shows, the vote margin of the winning side differs considerably in the three sets of votes we looked at in our paper.

Figure 6: Vote margins of winning side in different types of votes



As mentioned, automatically published votes, and thus most final passage votes have much larger winning margins than all other votes. In addition, votes on amendments are much more frequently close votes, especially if they are roll called. This suggests that we might get leverage by relying in our identification strategy on the idea that lopsided final passage votes are likely to be unaffected by party pressure. If this were the case, we could assess in much more detail whether our proposed empirical

model could travel to other contexts, where signal votes cannot be used for identification purposes.

A final future avenue of research is to assess in much more detail whether the party requesting a roll call vote makes a difference in the pressure exerted. Initial analyses based on a less theoretically informed model (reported in the appendix) suggests that this does actually make a difference. The question remains, however, whether this will also emerge when using our theoretically better grounded model.

Appendix

Tables 1 and 2 report information on the composition of the lower chamber during the 47th legislature and the upper house during the 49th. In table 3 we report the party labels used in this paper and the corresponding full name of the party (resp. of its party group), while Table 4 depicts the information on roll call vote requests.

Then, we report succinctly the results from another model specification, namely the following (abusing slightly the notation):

$$\begin{aligned} \pi_{ij} &= Pr(y_{ij}|\theta_i, \alpha_j, \beta_j, \delta_{pj}, \gamma_i) \\ &= F(\beta_j(\theta_i + \gamma_i * rcv_j) - \alpha_j - \delta_{pj} * p_i * rcv_j) \end{aligned} \quad (1)$$

What we observe from this model are the MPs' votes y_{ij}, whether the vote was roll called rcv_j and to which party p_i a legislator belongs. Based on this observed data we estimate each legislator's ideal-point θ_i and by how much this estimated ideal-point differs in roll call votes (γ_i). δ_{pj}, finally, estimates by how much the cut-points differ for MPs of each of the six parties, compared to the MPs of all other parties in roll call votes.[15]

In figure 12 we depict the results obtained for a model estimated with all votes, i.e., including also the roll call votes for which we could not identify the requesting party.

Figure 7 depicts the estimated ideal-points for the six party groups, while 8 reports on the effects of automatically published votes. Figure 9 reports the same information for requested roll call votes. Finally Figures 10 and 11 depict the estimated cutpoints, while Figure 13 shows, as a quick and dirty convergence check, the density of the Geweke-statistics of all estimated parameters for the two models estimated for the analyses presented in this appendix.

[15] As we can identify which roll call votes occurred automatically and which were requested by MPs, we can also explore differences in the vote-specific estimates according to this distinction. We can do the same thing also with the information which party requested a roll call vote.

Table 1: Party groups and their presidents in the 47th legislature (2003-2007)

Party group	incumbent	retiring	party group president(s)
RL	33	13	Fulvio Pelli; Felix Gutzwiller
C	26	9	Jean-Michel Cina; Urs Schwaller SR
S	44	15	Hildegard Fässler; Ursula Wyss
V	51	6	Caspar Baader
G	13	4	Cécile Bühlmann; Therese Frösch
E	1	4	Heiner Studer; Christian Waber
NA	6	0	NA

sources: Turner-Zwinkels et al. (2019) and

https://www.parlament.ch/de/über-das-parlament/archiv/archiv-fraktionen/fraktionspraesidien-seit-1917

Table 2: Party groups and their presidents in the 49th legislature (2003-2007)

Party	upper house MPs		party group
groups	incumbent	retiring	president(s)
RL	6	5	Gabi Huber
C	9	4	Urs Schwaller SR; Fillipo Lombardi SR
S	11	0	Ursula Wyss; Andy Tschümperlin
V	6	0	Caspar Baader; Adrian Amstutz
G	2	0	Antonio Hodgers; Balthasar Glättli
BD	1	0	Hansjörg Hassler
GL	0	2	Tiana Angelina Moser

sources: Turner-Zwinkels et al. (2019) and

https://www.parlament.ch/de/über-das-parlament/archiv/archiv-fraktionen/fraktionspraesidien-seit-1917

Table 3: Party labels

SP	Social-democratic party
CVP	Christian-democractic party
FDP	Free-democratic party
SVP	Swiss people's party
EVP	Evangelical people's party
BDP	Bourgeois-democratic party
GPS	Green party

Table 4: Requested roll call votes on party groups (47th legislative period, 2003-2007)

session	requested	CVP	FDP	SP	SVP
1	23	0	0	1	0
2	14	0	0	3	0
3	40	0	0	0	0
4	19	0	0	0	0
5	26	0	0	0	1
6	43	0	1	20	17
7	29	0	0	6	1
8	38	4	0	16	5
9	34	0	1	21	3
10	44	8	0	9	6
11	43	3	0	14	8
12	5	0	0	3	2
13	41	3	0	28	4
14	34	1	0	0	0
total	433	19	2	121	47
total (unique and identified requests)	184	18	2	118	46

Figure 7: Distribution of estimated ideal-points for the six party groups (all unpublished, automatic roll call votes and those requested by single party groups)

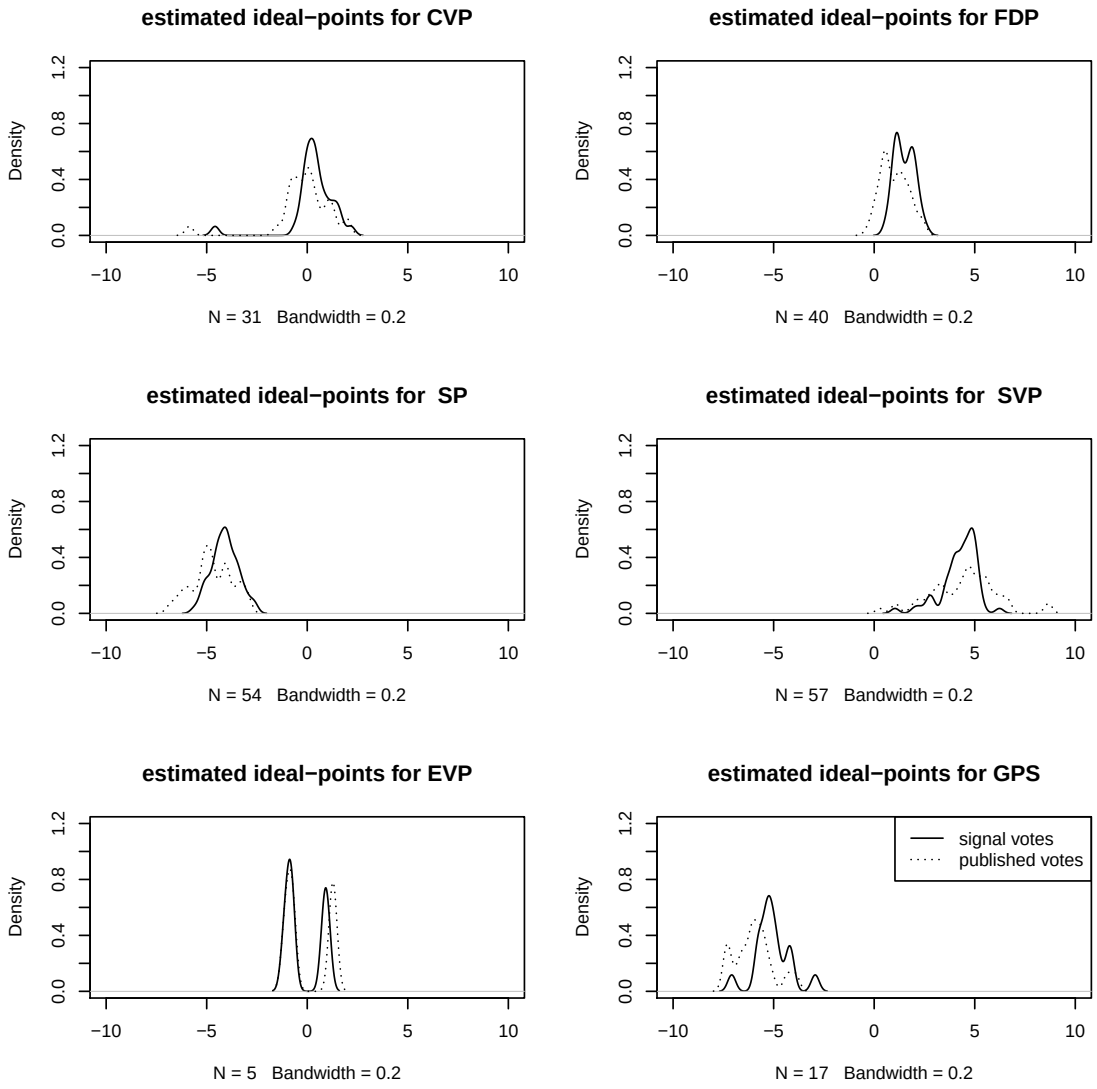


Figure 8: Effect of automatic roll call votes on the six party groups compared to unpublished votes (item difficulty parameter)

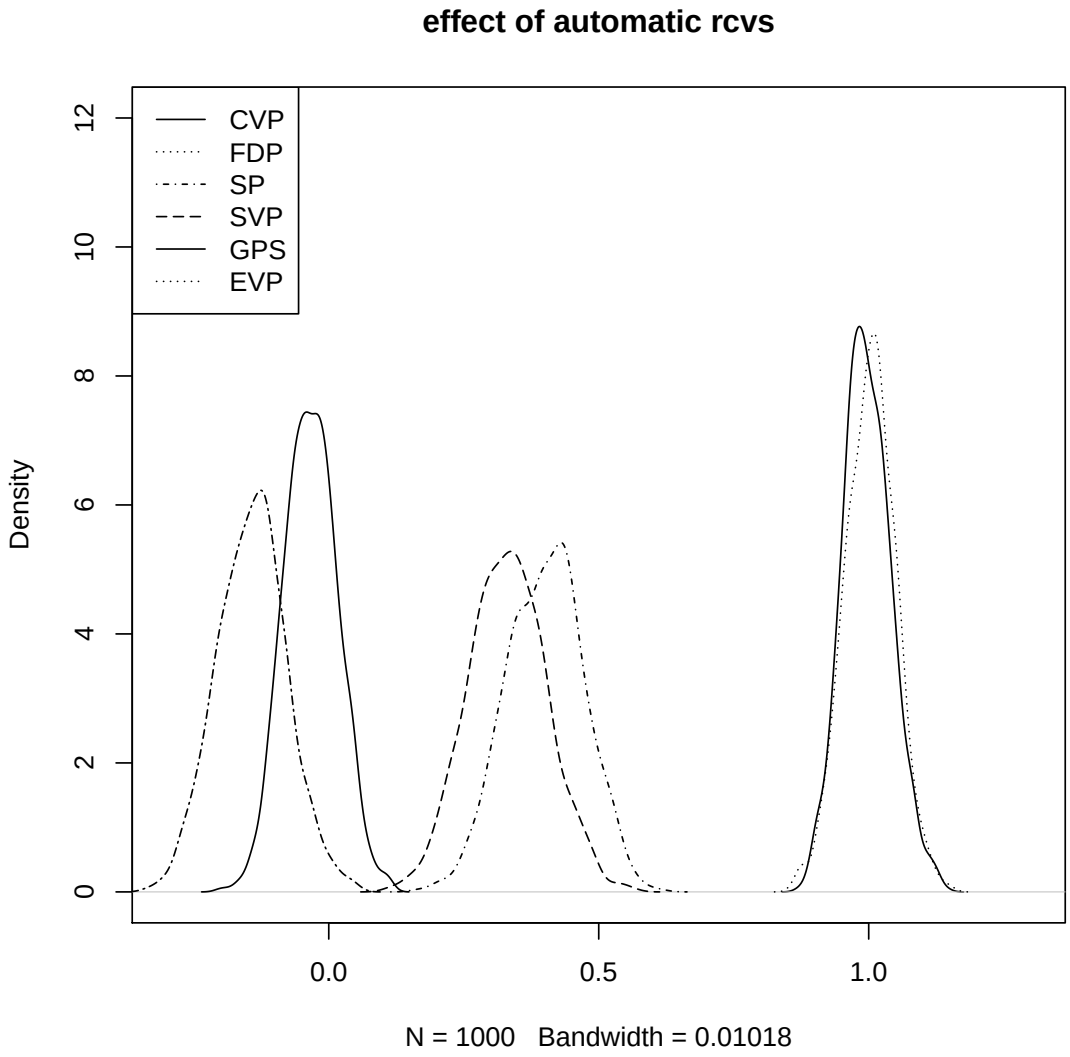


Figure 9: Effect of requested roll call votes on the six party groups as a function of requester compared to automatic roll call votes (item difficulty parameter)

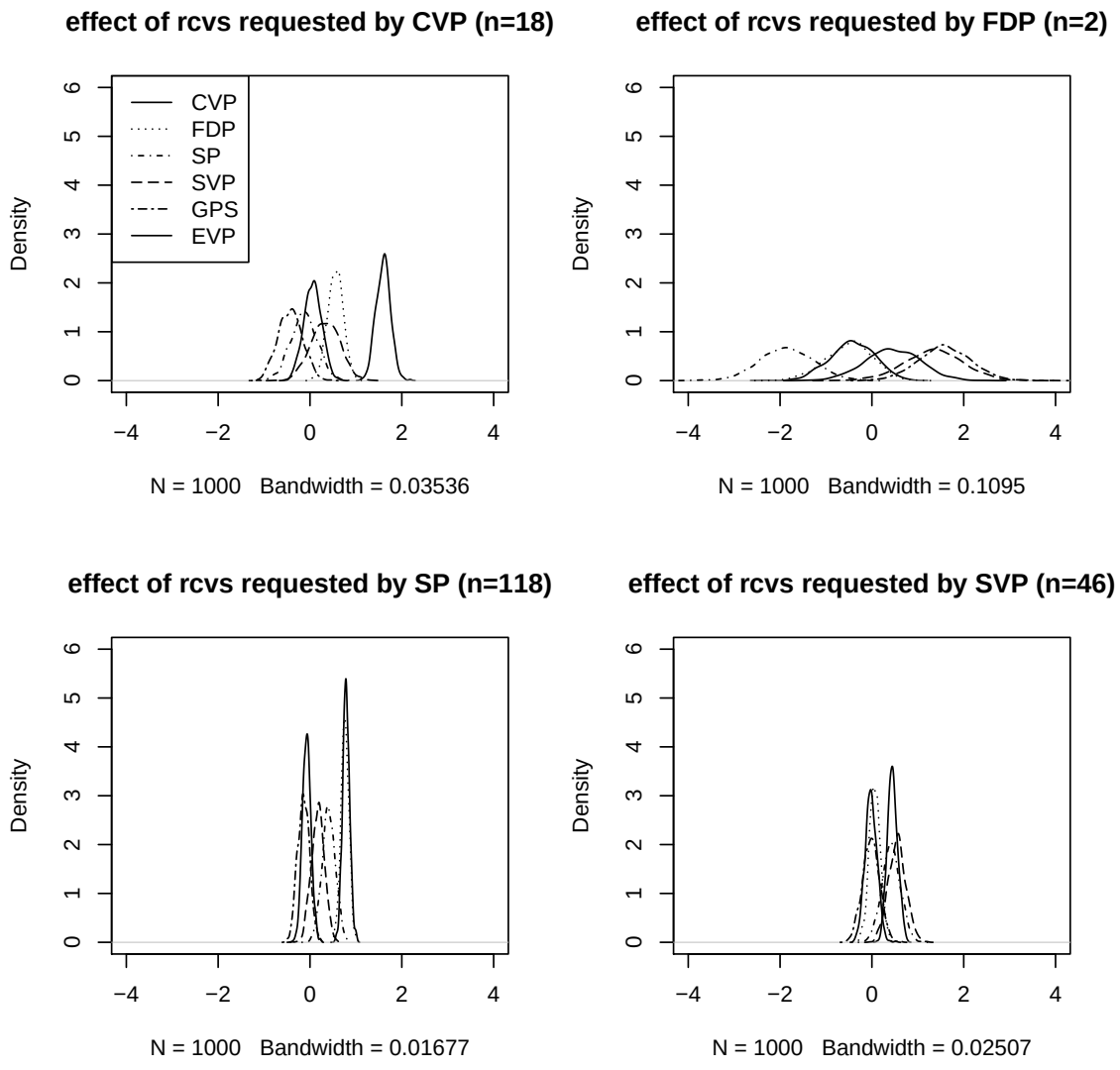


Figure 10: Cutpoints in unpublished and automatic roll call votes

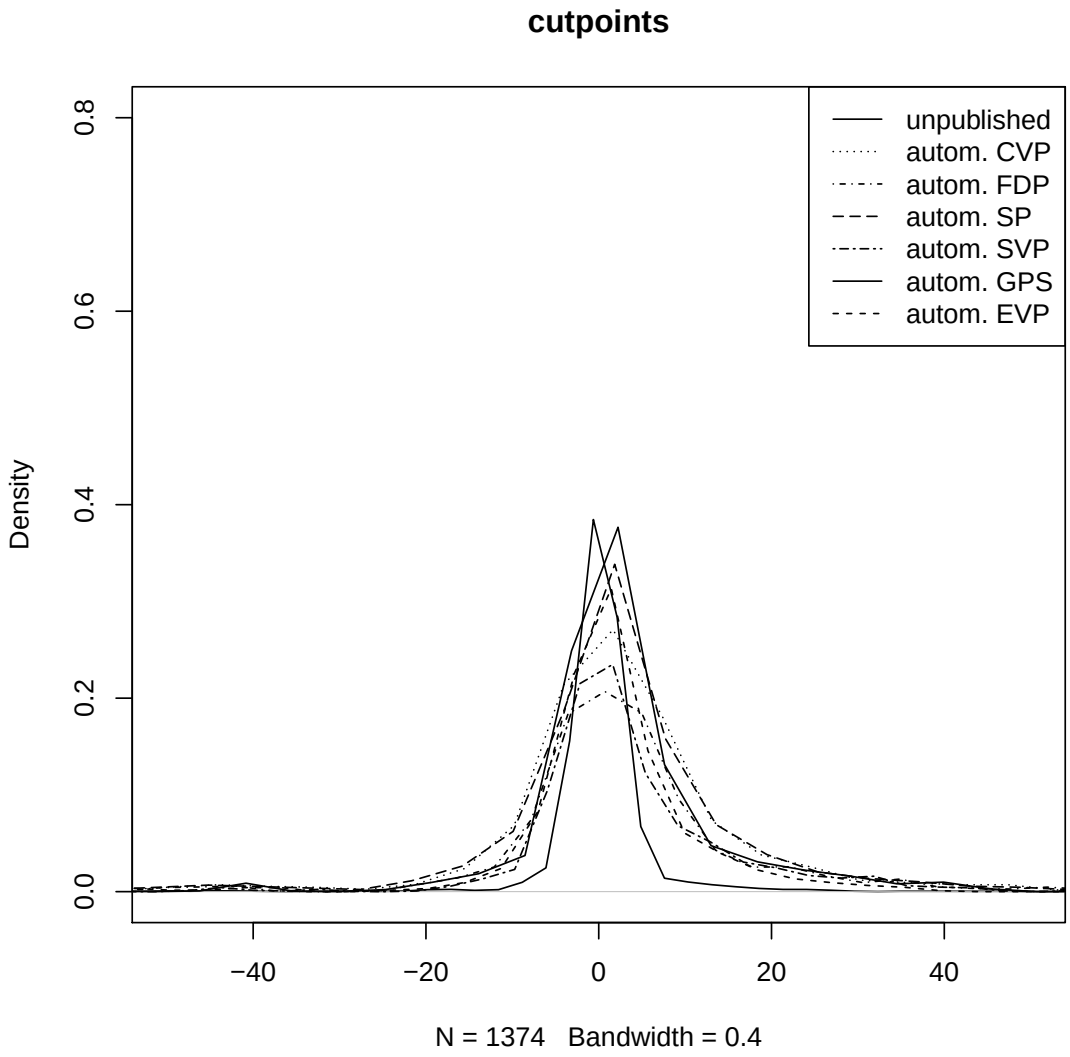


Figure 11: Cutpoints in automatic and requested roll call votes

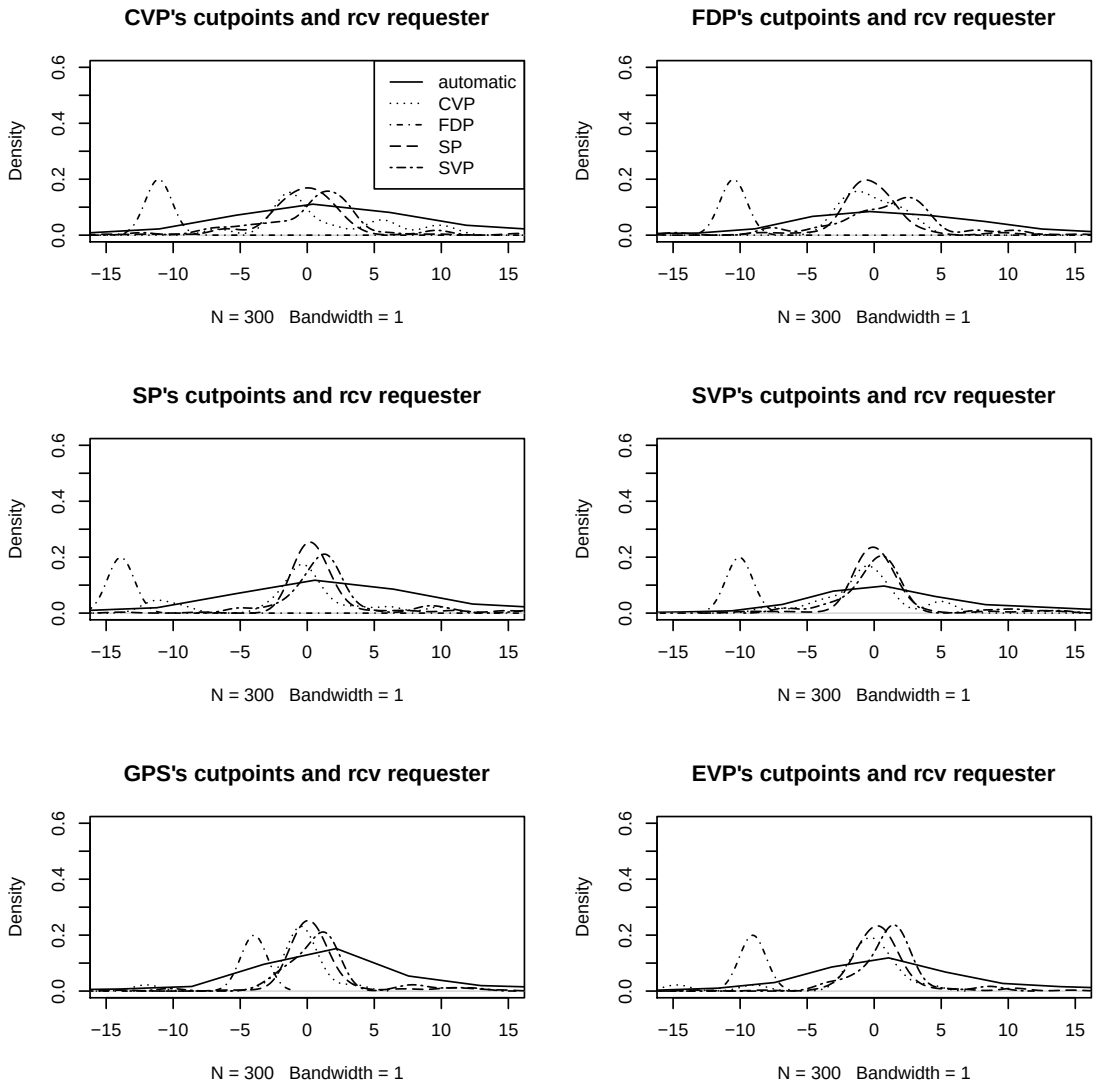


Figure 12: Distribution of estimated ideal-points for the six party groups (all unpublished, automatic and requested roll call votes)

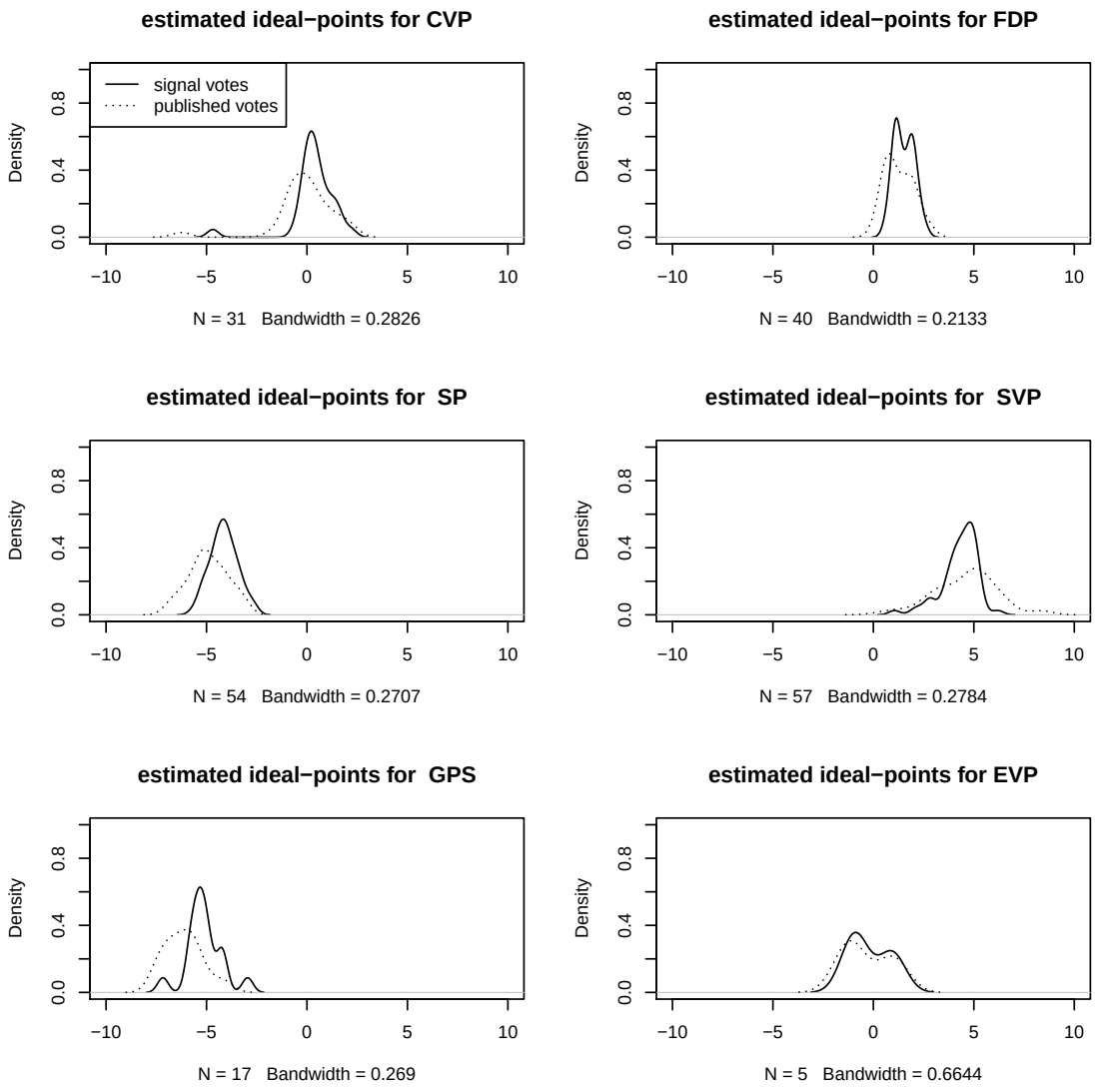
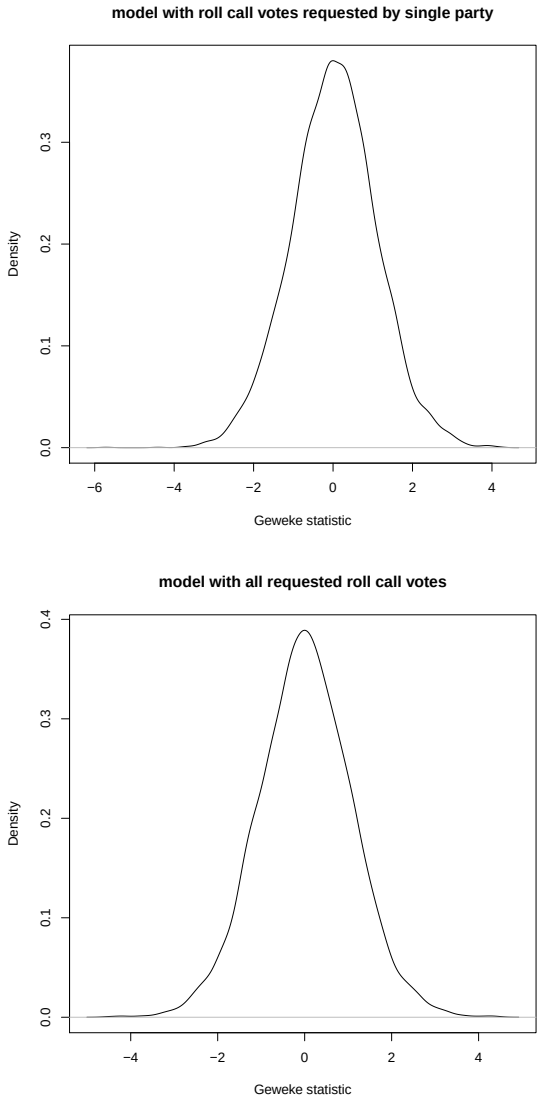


Figure 13: Distribution of Geweke-diagnostics over all estimated parameters



```
model{
### Party pressure model from Clinton et al. 2004 ppircv2n.jag 1.9.2013
for(j in 1:up){ # Loop over unpublished votes
   for(i in 1:n){
      pi[i,j] <- phi(beta[j]*theta[i] - alpha[j])
      y[i,j] ~ dbern(pi[i,j])
   }
}

for(j in (up+1):(up+pa)){   ## loop over automatic rcvs
   for(i in 1:n){
     pi[i,j] <- phi(beta[j]*(theta[i]) - alpha[j] + # omega[j]*
(1-ret[i]) *(    gamma[j-up,1]*FCVP[i] + gamma[j-up,2]*FFDP[i] + gamma[j-up,3]*FSP[i] +         gamma[j-up,4]*FSVP[i] +  gamma[j-up,5]*FGPS[i] + ga
 )
 +
 (         (1-pl[i,1]) *delta[j-up,1]*FCVP[i] + (1-pl[i,2]) *delta[j-up,2]*FFDP[i] + (1-pl[i,3]) *delta[j-up,3]*FSP[i] +
        (1-pl[i,4]) *delta[j-up,4]*FSVP[i] +  (1-pl[i,1]) *delta[j-up,5]*FGPS[i] + (1-pl[i,6]) *delta[j-up,6]*FEVP[i]))
      y[i,j] ~ dbern(pi[i,j])
   }
}

for(j in (up+pa+1):(up+pa+rr)){   ## loop over all requested rcvs
   for(i in 1:n){
      pi[i,j] <- phi(beta[j]*(theta[i]) - alpha[j] + # omega[j]*
 (1-ret[i]) * (    gamma[j-up,1]*FCVP[i] + gamma[j-up,2]*FFDP[i] + gamma[j-up,3]*FSP[i] +
       gamma[j-up,4]*FSVP[i] +  gamma[j-up,5]*FGPS[i] + gamma[j-up,6]*FEVP[i]
 )
 + ( (1-pl[i,1]) *      delta[j-up,1]*FCVP[i] + (1-pl[i,2]) *delta[j-up,2]*FFDP[i] + (1-pl[i,3]) *delta[j-up,3]*FSP[i] +     (1-pl[i,4]) *    delta
      y[i,j] ~ dbern(pi[i,j])
   }
}

## priors
   for(i in 1:2){
   mudelta[i] ~ dnorm(0,0.1)
   mugamma[i] ~ dnorm(0,0.1)
   mutheta[i] ~ dnorm(0,0.1)
}

   mudelta[3] ~ dnorm(0,0.1)
   mugamma[3] ~ dnorm(0,0.1)
   mutheta[3] ~ dnorm(0,0.1) T(,0)

   mudelta[4] ~ dnorm(0,0.1)
   mugamma[4] ~ dnorm(0,0.1)
   mutheta[4] ~ dnorm(0,0.1) T(0,)

   for(i in 5:6){
   mudelta[i] ~ dnorm(0,0.1)
   mugamma[i] ~ dnorm(0,0.1)
   mutheta[i] ~ dnorm(0,0.1)
}


for(i in 1:n){
   theta[i] ~ dnorm((mutheta[1]*FCVP[i] + mutheta[2]*FFDP[i] + mutheta[3]*FSP[i] +mutheta[4]*FSVP[i] + mutheta[5]*FGPS[i] + mutheta[6]*FEVP[i])
,0.1)
 }

for(j in 1:(up+pa+rr)){
   alpha[j] ~ dnorm(0,0.1)
   beta[j] ~ dnorm(0,0.1)
   }
for(j in 1:(pa+rr)){
   for(i in 1:6){
   delta[j,i] ~ dnorm(mudelta[i],0.1)
   gamma[j,i] ~ dnorm(mugamma[i],0.1)
   }
}

}
```

References

Bafumi, Joseph, Andrew Gelman, David K Park and Noah Kaplan. 2005. "Practical issues in implementing and understanding Bayesian ideal point estimation." *Political Analysis* 13(2):171–187.

Bailer, Stefanie, Sarah Bütikofer and Simon Hug. 2019. "Changing Places in Parliament." Paper prepared for presentation at the EPSA General Conference Belfast, 2019.

Carey, John M. 2009. *Legislative Voting and Accountability*. New York: Cambridge University Press.

Carrubba, Clifford J., Matthew Gabel and Simon Hug. 2008. "Legislative Voting Behavior, Seen and Unseen: Adjusting for Selection Effects in Roll Call Vote Analysis." *Legislative Studies Quarterly* 33(4):543–572.

Clinton, Joshua, Simon Jackman and Douglas Rivers. 2004. "The Statistical Analysis of Roll Call Voting." *American Political Science Review* 98(2):355–370.

Gelman, Andrew and Donald B Rubin. 1992. "Inference from iterative simulation using multiple sequences." *Statistical science* pp. 457–472.

Høyland, Bjørn. 2010. "Procedural and Party Effects in European Parliament Roll Call Votes." *European Union Politics* 11(4):597–613.

Hug, Simon. 2010. "Selection Effects in Roll Call Votes." *British Journal of Political Science* 40(1):225–235.

Hug, Simon. 2016. "Party pressure in the European parliament." *European Union Politics* 17(2):201–218.

Hug, Simon, Simone Wegmann and Reto Wüest. 2015. "Parliamentary Voting Procedures in Comparison." *West European Politics* 38(5):940–968.

Lynch, Michael and Anthony Madonna. 2013. "Viva Voce: Implications from the Disappearing Voice Vote." *Social Science Quarterly* 94(2):530–550.

Lynch, Michael S. and Anthony J. Madonna. 2019. "Broken Record Transparency, Position-Taking and Recorded Voting in the U.S. Congress." book manuscript, University of Georgia.

Plummer, Martyn. 2010. "JAGS Version 2.1.0 user manual." International Agency for Research on Cancer Infection and Cancer Epidemiology (ICE) group.

Roberts, Jason M. 2007. "The Statistical Analysis of Roll-Call Data: A Cautionary Tale." *Legislative Studies Quarterly* 32(3):341–360.

Turner-Zwinkels, Tomas, Oliver Huwyler, Stefanie Bailer, Elena Frech, Philip Manow and Simon Hug. 2019. "Parliaments Day by Day: the Parliamentary Careers in Comparison Core Database." Paper prepared for presentation at the EPSA General Conference Belfast, 2019.

Wüest, Reto. 2016. Roll Call Votes in Democratic Legislatures: The Reasons for Their Use and Their Effects on Legislative Behavior Phd thesis University of Geneva.