Strategic roll call vote requests*

Fang-Yi Chiou† Simon Hug‡
Bjørn Høyland §

Paper prepared for presentation at the Annual Meeting of the American Political Science Association (San Francisco, August 31-September 3, 2017)

First version: September 2014, this preliminary version: August 24, 2017

Abstract

Roll call vote analyses used to infer ideal-points of legislators or the cohesiveness of parties all implicitly assume that the data-generating process leading to such votes is random and does not affect MPs' behavior. If roll call votes, however, are requested by party leaders or MPs, this assumption is unlikely to hold. Strategic considerations by the actors requesting roll call votes are likely to influence the inferences we wish to make based on observed voting behavior by legislators. To address this issue we extend Chiou and Yang's (2008) strategic estimator for roll call vote requests and apply it to data on roll call vote requests in the European parliament. We find that strategic considerations play a considerable role in roll call vote requests, which questions some empirical findings regarding such requests presented in the literature.

*This paper draws on earlier drafts prepared for presentation at the General Conference of the European Political Science Association (Vienna, June, 2015), the General Conference of the European Political Science Association (Milano, June, 2017), and te Conference of the ECPR Standing Group on Parliaments (Basel, June, 2017). Helpful comments by Royce Carroll, Alexandria Cirone, Craig Volden, Reto Wüest and other participants at these events as well as the partial financial support by the Swiss National Science Foundation (Grants No. 100012-111909, 100012-129737 and 100017L-162427) are gratefully acknowledged. Preparatory work for this paper was carried out during a research stay by the second author at the IPSAS of Academia Sinica. We are grateful to this institution for its hospitality.

† IPSAS, Academia Sinica, Taipei; email: fangyichiou@gmail.com

‡ 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 Political Science, University of Oslo, Postbox 1097, Blindern, 0317 Oslo Norway ; phone +4722858598 ; email: bjorn.hoyland@stv.uio.no

1 Introduction

The analysis of roll call votes has progressed both in terms of sophistication and scope over the last few decades. On the one hand new tools make using roll call data easier and theoretically more insightful. On the other, parliaments make available information on parliamentary votes with increasing frequency. Often, however, scholars forget that roll call votes in most parliaments have to be, at least in part, requested by an actor (e.g., Fennell, 1974; Hug, 2010; Crisp and Driscoll, 2012; Hug, Wegmann and Wüest, 2015). So far, however, we know very little about when, if the standing orders of parliaments permit it, roll call votes are requested. In an early study Fennell (1974) surmises some possible "reasons," while Carrubba, Gabel and Hug (2008*a*) present a game-theoretic analysis of roll call vote requests (see also Ainsley and Maxwell, 2012; Wüest, 2013, 2016).

The few studies that focus on the reasons of roll call votes explicitly emphasize that actors requesting such votes do so for strategic reasons. At the empirical level, however, tests most often focus on evaluating observable implications quite removed from actual roll call vote requests and/or neglect their strategic nature (e.g. Finke, 2015; Thierse, 2016). To our knowledge only Chiou and Yang (2008) offer an empirical analysis on the Taiwanese parliament that takes into account the strategic nature of roll call vote requests. In this paper we extend their approach and propose an estimator that allows analyzing data for cases where more than two actors may request roll call votes. We demonstrate in Monte Carlo simulations that our estimator recovers well the parameters of the assumed data-generating process, while the alternative, and widely used, logit models lead to much more biased estimates. We then illustrate with a replication study focusing on the European parliament how insights change quite dramatically if the strategic context of roll call vote requests is directly integrated in the econometric estimator.

The next section provides the substantive motivation for our contribution. We briefly review work on roll call votes generally and roll call vote requests more specifically. Based on the work discussed we argue that scholars implicitly or explicitly consider requests for roll call votes to be part of a strategic game. In section three we present the estimator which takes into account the strategic nature of roll call vote requests and offer evidence for its performance in a Monte Carlo study in section four. Section five presents the results of a replication study in which we reestimate a model using data from the European Parliament, while applying our proposed estimator. In section six we conclude and sketch out the future avenue of research, including further applications of our proposed estimator.

2 Substantive motivation

The study of roll call votes in parliaments has seen important developments over the last few decades (for recent reviews, see McCarty, 2011; Hug, 2013; Carroll and Poole, 2014; Godbout, 2014; Hug, 2017). This development has profited on the one hand from methodological developments (for excellent overviews, see Poole, 2005; McCarty, 2011; Armstrong, Bakker, Carroll, Hare, Poole and Rosenthal, 2014) and on the other by the increasing ease with which roll call data can be collected (which is linked in part to the introduction of electronic voting systems in parliaments, see Middlebrook, 2003; Hug, Wegmann and Wüest, 2015; Wüest, 2016). Having access to datasets on roll call votes from various parliaments also increased the interest in comparative work (e.g., Depauw, 2003; Carey, 2009;

Depauw and Martin, 2009; Feliú and Onuki, 2014; Godbout, 2014; Coman, 2015; Hix and Noury, 2016). Such work, however, is fraught by difficulties due to differences in the rules under which roll call votes occur. Such differences are also likely to affect the inferences we may draw from roll call data (see Roberts, 2007; Hug, 2010, 2016).

Whether roll call votes are even possible depends in most parliamentary chambers on their standing orders. As several authors have convincingly shown (Saalfeld, 1995; Carrubba, Gabel and Hug, 2008*a*; Hug, 2010; Crisp and Driscoll, 2012; Hug, Wegmann and Wüest, 2015; Wüest, 2016), few chambers envision that all votes are carried out by roll call votes (or open voting). Equally few chambers envision no circumstances under which roll call votes might be possible. Already these institutional differences are of interest, and Carey (2009) argues that they relate to questions of transparency (for an empirical analysis of voting procedures as defined in the standing orders of European parliaments, see Hug, Wegmann and Wüest, 2015). Many standing orders of parliamentary chambers envision requests for roll call votes (for information regarding this point for Latin American and European parliamentary chambers, respectively a larger set of countries, see Crisp and Driscoll, 2012; Hug, Wegmann and Wüest, 2015; Wüest, 2016) and as a consequence, it seems of tantamount importance to understand under what circumstances such requests are made. Only then will we be able to assess the consequences for analyses of roll call vote data.

In an early study Fennell (1974) offers a list of possible reasons why roll call votes might be requested. In a similar vein, focusing on the European parliament Thiem (2009), Finke (2015) and Thierse (2016) offer and evaluate a list of similar hypotheses.[1] At a theoretical level Carrubba, Gabel and Hug (2008*a*) propose a

[1]Relatedly, Trumm (2015) tries to assess through an MP survey whether MPs are likely to

model under the assumption that roll call vote requests are made by leaders of party groups for disciplining purposes. Their model suggests that the location of the bill and the status quo, as well as preference heterogeneity in party groups combine in complex ways in explaining roll call vote requests.[2] Ainsley and Maxwell (2012) focus in their theoretical model mostly on the idea that roll call vote requests are made to signal preferences or unity (resp. disunity) of party groups. Their model implies, however, that if signaling is the motivation behind roll call votes, all votes should be roll called. Finally, Wüest (2013) argues that roll call vote requests must be considered as the result of the interplay of constituency and party preferences and how they relate to MPs' preferences (see also Wüest, 2016). Akin to Ainsley and Maxwell's (2012) approach, MPs may gain electorally if they take a stance in a roll call vote (or do so, invisibly, in a secret vote).

While all these studies either explicitly, by using a game-theoretic approach, or implicitly assume that roll call vote requests are the outcome of a strategic interaction among various actors, the empirical evaluations do only partly, if at all, account for this. To our knowledge the study by Chiou and Yang (2008) on roll call vote requests by the two main parties in the Taiwanese legislature is the only exception. More specifically, based on an extensive data collection the authors assemble detailed measures of various aspects likely to be important in the calculus of parties when deciding to request a roll call vote. Rely-

vote differently in a roll call vote than in other votes (see also Hix, Noury and Roland, 2012; Mühlböck and Yordanova, 2015; Hug, 2016). Similarly, Thierse (2016) offers some empirical evidence based on interviews in the European parliament. Finally, Stecker (2010), focusing on regional parliaments in Germany, also evaluates what might explain roll call votes (see also Stecker, 2011).

[2] In a preliminary empirical evaluation focusing on the European parliament Carrubba, Gabel and Hug (2008*b*) find considerable evidence in support of their model, while hypotheses proposed by other scholars (Kreppel, 2002; Hix, Noury and Roland, 2006; Thiem, 2009) fare much worse.

ing on the general ideas of quantal response equilibria proposed by McKelvey and Palfrey (1995, 1998) for analyzing experimental data (see also Goeree, Holt and Palfrey, 2016) and extended to observational data by Signorino (1999) (see also Signorino, 2002; Signorino, 2003; Signorino and Yilmaz, 2003; Signorino and Tarar, 2006)[3] Chiou and Yang (2008) propose estimators applicable for a sequential and a simultaneous move game. While their game allows for more than two players, their empirical analysis and estimation focuses on roll call vote requests in the Taiwanese legislature where only two major parties existed and requested roll call votes. Their results demonstrate considerable interdependence between parties and show that the latter follow, in part, in their roll call vote requests different logics.[4] In substance, one of their primary findings is that the two parties have very different incentives to request roll call votes: while the majority party employs roll call requests to discipline members, the minority party's incentives center on highlighting or embarrassing the unpopular policy stands of its opponent parties.

All other empirical studies that we are aware of consider the strategic interdependence as a nuisance and attempt to control for this lack of independence amongst observations (i.e., roll call vote requests by each party) by employing econometric fixes. These econometric fixes, relying on clustered and/or robust standard errors, are, however, far from being a miracle cure (see, e.g., King and Roberts, 2015).[5]

[3]Note that these recent extensions focus almost exclusively on QRE estimators in sequential games. For simultaneous move games, for which Goeree, Holt and Palfrey (2016), for instance, discuss many applications for experimental data, much less work has focused on observational data. As we discuss below, this raises particular challenges that have, so far, not been acknowledged in the literature.

[4]To our knowledge all other empirical studies of roll call vote requests either assess only losely connected hypotheses (e.g., Fennell, 1974; Thiem, 2009; Stecker, 2010; Finke, 2015; Thierse, 2016) or assess comparative statics results from a game-theoretic model (e.g., Carrubba, Gabel and Hug, 2008*b*).

[5]An alternative way to more explicitly acknowledge the interdependencies among the choices

3 Theoretical and empirical model

To overcome these econometric difficulties and address the strategic nature of roll call vote requests directly, we apply and slightly extend Chiou and Yang's (2008) game-theoretic model for roll call vote requests.[6] In their proposed game, there are N players, denoted as player $1, \ldots, N$ ($N \geq 2$). Moreover, the game is independently played for T times. For each time of play $i, i = 1, \ldots T$, Player j's strategy set is $S_{ij} = \{r, \widetilde{r}\}$, $j = 1, \ldots, N$, where r and $\widetilde{r}$ denote requesting a roll call vote and not requesting a roll call vote, respectively.[7] In terms of game sequence, for each i, each player simultaneously chooses whether or not to request a roll call vote. When at least one player requests a roll call vote, this vote will be recorded. If none of these N players request a roll call, this vote will not be recorded. Only one of these two outcomes can occur in the game. For each i, player j obtains the utility of $U_{ij}(R)$ when a roll call vote occurs, and $U_{ij}(\widetilde{R})$ otherwise. $U_{ij}(\widetilde{R}) = 0$ is assumed, making $U_{ij}(R)$ standing for player j's net payoff from a recorded vote.

Moreover, for each i and each j, Chiou and Yang (2008) assume $U_{ij}(R) = \beta_j' x_{ij}$, where x_{ij} is a $k_j \times 1$ vector representing k_j exogenous variables (with the first element equaling to one), $k_j = 1, 2, \ldots$, and β_j is a $k_j \times 1$ vector representing the coefficients of the k_j variables, respectively. In words, x_{ij} is a set of k_j exogenous variables influencing player j's net payoff of obtaining a recorded vote

of all party groups is to estimate a multivariate probit model. We report the results from such a model based on the data we use in our application (see below) in the appendix (Table 3). These results suggest that the hypothesis of common effects can clearly be rejected.

[6]Related setups can be found in Goeree, Holt and Palfrey (2016) for a participation game, which relates closely to the volunteer game analyzed by Diekmann (1985).

[7]We use R and $\widetilde{R}$ to denote the outcome of the game, namely whether a roll call vote occurred, while r and $\widetilde{r}$ (without subscripts) denote the pure strategies of requesting or not requesting a roll call vote. Finally, r_{ij} (with subscripts, here i for vote and j for player) denotes the choice probability in mixed strategies.

R in the i^{th} time of play, while β_j denotes the effects of these variables.

To derive player i's expected utility of playing each strategy, $r_{ij} \in [0, 1]$ is denoted as the probability that player j will play r in the i^{th} time of play. For $j = 1, \ldots, N$, player i's expected utility of playing each of the two strategies in the i^{th} time of play is[8]

$$\begin{aligned} EU_{ij}(r) &= U_{ij}(R) \\ EU_{ij}(\tilde{r}) &= U_{ij}(R)(1 - \prod_{h \neq j}(1 - r_{ih})) \end{aligned}$$

This means that player j's net expected payoff of requesting a roll call in the i^{th} time of play is

$$EU_{ij}(r) - EU_{ij}(\tilde{r}) = U_{ij}(R) \prod_{h \neq j}(1 - r_{ih}), i = 1, \ldots, T, j = 1, \ldots, N \tag{1}$$

To solve for the equilibrium in this game, Chiou and Yang (2008) apply McKelvey and Palfrey's (1995, 1998) Logit quantal response equilibrium (Logit QRE) as our equilibrium concept.[9] Specifically, McKelvey and Palfrey's (1995, 1998) Logit QRE differs from Nash equilibrium in that the former allows for bounded

[8]Note that the expected utility for each player only relates to whether or not a roll call vote occurs and not on (possibly additionally) who lodged this request. In future iterations of this paper we will extend the proposed estimator also to cover this eventuality, for instance like participation costs in Diekmann (1985) or Goeree, Holt and Palfrey's (2016, 2007ff) participation game.

[9]This Logit QRE also assumes that the errors made by each of the players are independently and identically (i.i.d.) distributed according to an extreme value distribution. In Signorino's (1999) conceptualization for extensive form games, this would correspond most closely to what he calls agent errors (for a QRE estimator with correlated errors, see Leemann, 2014). Goeree, Holt and Palfrey (2016) elaborate more on this equilibrium concept that, with the assumption of i.i.d. distributed errors, seems quite appropriate for experimental settings. For observational data, one might consider extensions based on relaxing the i.i.d. assumption.

rationality by incorporating noise in each player's best response function. Under Nash equilibrium of this game, a player will play a pure strategy of r if and only if the expected payoff of playing it is strictly greater than that of playing $\widetilde{r}$, but a mixed strategy if the expected payoff of playing each strategy is identical. However, under Logit QRE, player j will play r with the following best response function.

$$
\begin{aligned}
r_{ij} &= \frac{1}{1+\exp(-\lambda_j(EU_{ij}(r)-EU_{ij}(\widetilde{r})))} \\
&= \frac{1}{1+\exp(-\lambda_j(U_{ij}(R)\prod_{h\neq j}(1-r_{ih})))}
\end{aligned}
\tag{2}
$$

where $\lambda_j \geq 0$.[10] This implies that player i will always play r with a positive probability between zero and one. However, the probability of playing r increases as the net expected utility of playing it, as shown in equation (1), becomes larger, if $\lambda_j > 0$. Thus λ_j captures the noise of player j's best response, i.e., how bounded a player's rationality is. A larger λ_j means that when a player's net benefit of playing R is positive (negative), this player will play this strategy with a higher (lower) probability, implying less noise that a player has in responding to the other players. At the extreme, when λ_j approaches positive infinity, the best response function in equation (2) corresponds to that in Nash equilibrium, i.e, no noise in responding.[11]

For each time of play, the Logit QRE in this simultaneous game can be

[10]We assume that each player has a fixed λ over time but could have a different λ from the others.

[11] At the other extreme, however, when λ_j approaches zero, a player randomly plays r with a probability of $\frac{1}{2}$, independent of x_{ij} and β_j. While this setup is quite powerful in capturing noise, the assumption that each plays r and $\widetilde{r}$ with equal probability when $\lambda_j = 0$ may not be reasonable in a non-experimental setting, because the probability of each player's playing r and $\widetilde{r}$ should not be the same and probably depends on data. We discuss this issue in the appendix and will cover it in more detail in the next iteration of this paper.

obtained by solving a system of N equations, consisting of equation (2) for $j = 1, \ldots, N$. For each i, we solve this system of equations and obtain its solution of $(r^*_{i1}, \ldots, r^*_{iN})$, which is the Logit QRE of this game in the i^{th} time of play. Denote $y_{ij} \in \{0, 1\}$ as the observed strategy played by player j in the i^{th} time of play, where y_{ij} equals to 1 if player j plays r and 0 otherwise. For each i, denote $y_i = (y_{i1}, \ldots, y_{iN})$ as the observed strategy profile played by all players in the i^{th} time of play. Finally, denote $Y = (y_1, \ldots, y_T)$ as the strategies profiles in T times of play. The likelihood of observing Y is

$$L(\beta, \lambda | x_1, \ldots, x_N, Y) \;=\; \prod_{i=1}^{T} \prod_{j=1}^{N} (r^*_{ij})^{y_{ij}} (1 - r^*_{ij})^{1-y_{ij}} \tag{3}$$

where x_j is a $T \times k_j$ matrix containing players j's covariates in these T times of play, $\beta = (\beta_1, \ldots, \beta_N), and \lambda = (\lambda_1, \ldots, \lambda_{N-1})$. We employ a maximum likelihood approach to obtain the maximizer of (β, λ, τ).[12]

Before estimating the model, we need to address identification issues. As seen in equation (2), the product of λ_j and $U_{ij}(R)$ implies that not all of the elements in λ and β can simultaneously be identified. For instance, if each player is assumed to have different coefficients even for the same covariates, as assumed in Chiou and Yang (2008), then λ cannot be identified. Thus, the estimated βs comprise also the respective λs. However, if we assume that all of the players share the same coefficient(s) for at least one variable, then $N - 1$ of the elements in λ can be identified, while one of them needs to be set to a particular value (we choose the value of 1). Alternatively, if we assume each player to share the same

[12]In practice, the likelihood function to be maximized corresponds to equation 3, but in each iteration, for the current parameter values a non-linear equation solver is used to ensure that for the given parameters the roll call vote request probabilities for each player are mutual best responses, as specified in equation 2.

λ_j, we need to impose one of the elements in β to be one in order to identify the rest of β. Given the generality of the setup, one needs to exercise caution in addressing identification issues.

4 The properties of the estimator

We build on and extend Chiou and Yang's (2008) `R` code to generate the estimator with more than two players.[13] As a first cut we evaluate the performance of our estimator with a Monte-Carlo study. We generate the data according to the assumed process for a situation where three parties may request roll call votes. We also assume that the effects of the independent variables are party-specific in the Monte-Carlo study.[14]

Table 1 compares the performance of the strategic model relative to an ordinary logit model, each estimated on the 1000 data sets that we generated. We compare our QRE logit model to a set of standard logit models, one per party. We compare two features of the models. The *coverage* is the proportion of 95 per cent confidence intervals of the estimated β_i that include the true value of β_i. In an ideal scenario, this should happen in 95 per cent of the time. The second measure is the root mean squared error (*rmse*) that reflects both the variability of the estimate and its bias.

[13]We would like to thank them for sharing their R code with us.

[14]This implies that the λs are not identified and we only estimate the party-specific coefficients. In future versions we will also subject the version of the estimator with common coefficient (and as a consequence with λs). The data used for the MC study reported in Table 1 used the following parameters: β_{1_1} = -1.734, β_{1_2} = 0.3, β_{1_3} = -0.3, β_{2_1} = -2.197, β_{2_2} = 0.2, β_{2_3} = -0.2, β_{3_1} = -2.944, β_{3_2} = -0.4, β_{3_3} = 0.4 (these values generate data that resemble many actual voting datasets). Based on these parameters 1000 datasets were generated, each with 1000 votes. This data generation followed exactly the same logic as the one outlined in the theory section. That is, based on the matrix of independent variables predicted roll call vote probabilities were generated. These were then adjusted for each vote with the help of a non-linear equation solver so that they were mutual best response probabilities.

Table 1: MC-study: Strategic model vs logit model (3 parties)

	strategic (coverage)	strategic (rmse)	logit (coverage)	logit (rmse)
β_{1_1}	0.001	0.217	0.000	0.283
β_{1_2}	0.919	0.007	0.894	0.008
β_{1_2}	0.902	0.008	0.885	0.008
β_{2_1}	0.074	0.138	0.000	0.593
β_{2_2}	0.922	0.008	0.923	0.008
β_{2_3}	0.906	0.008	0.910	0.008
β_{3_1}	0.730	0.053	0.000	1.277
β_{3_2}	0.909	0.013	0.792	0.019
β_{3_3}	0.907	0.013	0.787	0.020

The first column shows the proportion of simulations where the coefficient estimates from the strategic model were within the 95% confidence interval. The mean across the coefficients is .697. It is particularly the coefficients for the intercepts that are less often within the confidence intervals. Most of the other variables are close or within the theoretically expected range. The true β is always within the 95 per cent confidence interval in more than 9 out of 10 iterations.

Comparing these estimates to the coverage from the logit model, reported in column 3, we see that the logit model fares substantively worse. On average, only .577 of the estimates are within the 95% coverage. The logit performs particularly poorly in terms of the coverage of the intercepts, as none of the intercept were within the confidence interval in any of the iterations. For the other variables, the coverage ranges from .787 to .923. Only 2 of the 6 βs are comparable to those of the strategic model. None of these estimates are substantively better.

Column two reports the root mean square error from the simulations of the strategic model. The smaller the value, the less biased the estimator is and the smaller variance it has. The average across the parameters is .052, ranging from .007 to .217. The errors on the substantive parameters are substantively lower than those on the intercepts. While the former ranges from .007 to .013, the latter ranges from .053 to .217.

Comparing these results with those of the ordinary logit model, reported in column 4, we again find that our strategic model outperforms the logit model. The mean *rmse* is almost 5 timers higher, at .247, which is also higher than the worse performing intercept of the strategic model. For individual βs, *rmse* ranges from .008 to .020 for the substantive coefficients, and from .283 to 1.277 for the intercepts.

Overall, the strategic model is performing substantively better than the ordinary logic model, both in terms of root mean squared error and coverage. Logistic models are not suitable for investigating situations with a strategic element. In the next section, we compare the results presented in a recent paper on strategic roll call requests with the results based on our proposed estimator.

5 Application

To illustrate our estimator we replicate a study of roll call vote requests in the European parliament by Thierse (2016). He relies on the distinction between the logic of requesting roll call votes as a monitoring and disciplining tool vs. roll call requests as a tool for signaling position taking. The paper spends a substantive part discussing different strategic aspects related to the political groups' decision to request a roll call, underscoring the fact that while a group (or 40 MEPs) can obtain a roll call by simply requesting it, there is no way for a group to prevent a roll call vote from occurring given that some other group may put in a request. This argument provides an excellent motivation for the theoretical setup we have presented above and is underlined by Thierse (2016, 224) quoting Hix, Noury and Roland (2006, 114):

> . . . a political party in the European Parliament can decide which issues it would like to see held by a roll-call vote. But a party cannot prevent other parties calling roll-call votes on issues it would prefer to be decided by secret ballot, for example, because its members are divided on the issue.

Thierse's (2016) main analysis is based on a statistical analysis of 6001 votes on 387 proposals and roll call vote requests by seven party groups.[15] The statistical analysis uses a logistic model with "crossed-random effects" on political groups and votes. This set-up allows groups to have different baseline probabilities of requesting roll call votes, but the effect of the covariates are assumed to be identical across groups. In the replication material provided, several computational issues are reported, so it is understandable that some simplifying assumptions are relied upon in order to obtain estimates. Nevertheless, as we demonstrate below, by neither taking the strategic consideration of groups contemplating requesting a roll call into account, nor allowing the coefficients to vary across groups, the reported results may perhaps not be very meaningful.

In his empirical study Thierse (2016, 226f) aims mainly to adjudicate between the disciplining and signaling logic through three hypotheses focusing on roll call vote (RCV) requests:

H_1: EPGs which have lost out cohesively in committee are more likely to sponsor RCV requests.

H_2: EPGs which have been incohesive in the committee vote are more likely to sponsor RCV requests.

[15] Roll call vote requests submitted by at least 40 members of the European parliament were not taken into account in Thierse's (2016) analysis and we proceed likewise.

H_3: RCV requests are more likely the less consensual the outcome of the preceding vote in the committee responsible for drafting legislation.

In his empirical analysis he finds support for H1, namely a negative coefficient for his variable committee vote, while H3 is rejected as the coefficient for his measure IPP (index of political perturbation, reflecting divisions in the committee vote) is negative as well. This, he concludes, is evidence against the monitoring and disciplining hypothesis. Instead, it counts as support for the signaling account. Roll call vote requests are also more likely on single-authored amendments, according to the empirical results. In addition, he finds that groups are likely to request roll call votes on their own reports and that media attention and the group's policy salience, but not policy position, increase the probability of roll-call requests.[16]

Replicating Thierse's (2016) main model requires that the effects of all independent variables are the same for each and every party group. The latter can only differ with respect to the constant, reflecting different average rates at which they request roll call votes.[17] Thus, we use our estimator for a model where we assume that all independent variables have the same effect on the utility of a

[16] We have various issues regarding the specification and operationalization of Thierse's (2016) empirical model, but will stick to his setup in the main text. One important issue neglected by Thierse (2016) is that starting with 2008 the IND/DEM party group almost systematically requested roll call votes on all final votes to ensure that the standing orders were changed in favor of more transparency (for an insightful discussion, see Mühlböck and Yordanova, 2015). The consequence of this manoeuvre was the change in the standing order requiring roll call votes on all legislative final passage votes (see Hix, Noury and Roland, 2012; Mühlböck and Yordanova, 2015; Hug, 2016). To address this issue we will also present in the appendix an analysis that focuses only on the period before 2008, as the aims and incentives for all roll call vote requests clearly changed after that date for all parties (see Table 4 in the appendix).

[17] In the appendix we report on the results of a multivariate probit model which allows to take into account interdependencies between the choices of the various party groups in a more explicit way (though not based on a systematic theoretical model). As the results clearly show, the assumption that each and every explanatory variable has the same effect is clearly not tenable. We will consider this in the context of our proposed estimator in a later iteration of our paper.

roll call vote for each party group. This assumption, as discussed in our theory section allows us to estimate different λs which reflect differences in strategic consideration across party groups (one of these λ (we chose the one for the Verts) has to be a fixed value and we chose 1).

Consequently, our replication based on using our proposed estimator will yield as many estimated coefficient as Thierse's (2016) model,[18] but in addition as many λs as there are party groups minus one. The results of this estimation appear in Table 2, next to the original results from Thierse's (2016) model 4.

Comparing the results from our strategic model with the original results, we see that most of the original results do not hold up. For the key variables that Thierse (2016) uses to test H_1, H_2, and H_3 we find diverging results. While Thierse (2016) finds a negative effect of the committee vote our coefficient is also negative, but much smaller and not statsitically significant. In short, we fail to find an effect of being on the losing side at the committee stage and, thus, contrary to Thierse (2016) find no evidence in support of the signaling logic where groups request roll calls to be on record for opposing the majority view.

The coefficient for the other key explanatory variable, the extent of committee division (IPP) is also negative and significant in the original results, suggesting that groups are more likely to request roll calls on consensual committee proposal rather than on the contested ones. However, once strategic considerations are accounted for, this finding disappears as well. In the strategic model, this coefficient is positive, but with a standard error of similar magnitude, rendering the effect not significantly different from zero at any conventional levels.

[18]There is one slight adjustment in the empirical model due to the fact that in Thierse's (2016) data the information on the vote in committee is missing for some votes and party groups. Thierse (2016) drops these observations from his analyses, leading to an unbalanced panel. We adopt for the sake of our estimator another strategy, by setting the values for these observations to zero, while adding an additional independent variable, namely a missingness indicator. Proceeding in this way is akin to a zero-order regression (see Greene, 2003, 60).

Table 2: Estimator with only λs

	Logit QRE estimator		Thierse (mixed effects logit)	
	coeff.	s.e.	coeff.	s.e.
PPE	-3.110	0.153	-3.85	0.17
PSE	-3.431	0.449	-3.85 -0.59	0.17+0.12
ALDE	-3.954	0.186	-3.85 -1.47	0.17+0.15
GUE	-3.383	0.140	-3.85 -0.34	0.17+0.12
IND	-2.827	1.266	-3.85 +0.48	0.17+0.11
UEN	-3.491	0.366	-3.85 -1.77	0.17+0.21
Verts	-1.913	0.185	-3.85 +0.73	0.17+0.10
EPG amendment	0.060	0.130	2.52	0.00
Joint amendment	0.030	0.112	1.45	0.10
Committee amendment	-0.114	0.093	0.24	0.08
Final vote	-0.075	0.083	2.40	0.12
IPP	0.112	0.105	-0.34	0.15
EPG committee vote	-0.008	0.064	-0.92	0.09
EPG committee vote missing	-0.287	0.349	-	-
Reading	0.023	0.069	0.84	0.09
Rapporteur	0.030	0.170	0.60	0.09
# Amendments	0.124	0.146	0.26	0.19
Media	0.090	0.124	0.34	0.16
Policy position	-0.185	0.301	0.15	0.15
Policy salience	-0.905	0.312	0.56	0.11
$\log(\lambda_{PPE})$	-2.929	5.895		
$\log(\lambda_{PSE})$	0.788	0.793		
$\log(\lambda_{ALDE})$	-4.087	8.077		
$\log(\lambda_{GUE})$	-4.353	8.765		
$\log(\lambda_{IND})$	2.233	0.609		
$\log(\lambda_{UEN})$	0.406	1.277		
$\log(\lambda_{Verts})$	0	-		
Observations	6001		40863	
llik	-6609.525		-5608.95	

In contrast to Thierse (2016), we fail to find evidence of any effect for most of the control variables, with one exception. Like Thierse (2016), we find an effect of policy salience. But it is the opposite of what he finds. While with his model he finds that groups are more likely to request roll call votes on policies that are salient to them, we find that it is on the issues that are less salient that they are most likely to make roll call vote requests.

6 Conclusion

In this paper, we propose a strategic model of roll call requests. While few scholars deny that roll calls are requested for a reason, the strategic feature of roll call requests is rarely taken into account in empirical work on legislative behavior. To our knowledge, the only exception is Chiou and Yang (2008), who model strategic roll call vote requests with more than two players but develop code only for the two-party context of the Taiwanese legislature. We build upon and generalize their code to the multi-party case, which is empirically more common. Monte-Carlo simulations show that the performance of our model is superior to party-specific logit models in terms of parameter coverage and root mean squared errors. Finally, we demonstrate the empirical relevance of our model through a replication study. In the replicated study, the strategic aspects of roll call requests are discussed, but not modeled in the statistical analysis. When the strategic aspects are accounted for, the key findings of this study no longer hold up.

In future versions of this paper, we will introduce bootstrapped standard error for models with a large number of variables and/or parties. We will also extend the MC-study to cover a wide range of possible set-ups, including varying the number of parties, parameters and parameter-values, for both models with common and party-specific effects. This will demonstrate the flexibility of our approach, and address some of potential limitations in our approach so far. We will also make available easy-to-use software for estimating models of strategic roll call requests. Moreover, we will explore the application of this approach in other settings and extend the estimator to account for different decision rules and other features of the strategic environment.

References

Ainsley, Caitlin and Laura Maxwell. 2012. "What Can We Learn From Roll Call Votes? Strategic Signaling Incentives and the Decision to Call Roll Call Votes." Department of Political Science, Emory University, unpublished paper.

Armstrong, David Alan III, Ryan Bakker, Royce Carroll, Christopher Hare, Keith T. Poole and Howard Rosenthal. 2014. *Analyzing spatial models of choice and judgment with R*. Chapman & Hall/CRC.

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

Carroll, Royce and Keith Poole. 2014. Roll Call Analysis and the Study of Legislatures. In *The Oxford Handbook of Legislative Studies*, ed. Shane Martin, Thomas Saalfeld and Kaare Strøm. Oxford: Oxford University Press pp. 103–125.

Carrubba, Clifford J., Matthew Gabel and Simon Hug. 2008*a*. "Legislative Voting Behavior, Seen and Unseen: A Theory of Roll-Call Vote Selection." *Legislative Studies Quarterly* 33(4):543–572.

Carrubba, Clifford J., Matthew Gabel and Simon Hug. 2008*b*. "Voting at the surface. Roll call votes in the European Parliament." Paper prepared for presentation at the 2nd Conference on the Political Economy of International Organizations January 29-31, 2009 in Geneva, Switzerland.

Chiou, Fang-Yi and Wanying Yang. 2008. "Strategic Choices of Roll Call Requests." Paper presented at the annual meeting of the MPSA Annual National Conference, Palmer House Hotel, Hilton, Chicago, IL.

Coman, Emanuel Emil. 2015. "Institutions and Vote Unity in Parliaments: Evidence from 33 National Chambers." *Journal of Legislative Studies* 21(3):360–389.

Crisp, Brian F. and Amanda Driscoll. 2012. "The Strategic Use of Legislative Voting Procedures." *Legislative Studies Quarterly* 37(2):67–97.

Depauw, Sam. 2003. "Government Party Discipline in Parliamentary Democracies: The Cases of Belgium, France and the United Kingdom in the 1990s." *Journal of Legislative Studies* 9(4):130–146.

Depauw, Sam and Shane Martin. 2009. Legislative Party Discipline and Cohesion in Comparative Perspective. In *Intra-Party Politics and Coalition Governments*, ed. Daniela Giannetti and F. Kenneth Benoit. Abingdon: Routledge pp. 103–120.

Diekmann, Andreas. 1985. "Volunteer's dilemma." *Journal of conflict resolution* 29(4):605–610.

Feliú, Pedro and Janina Onuki. 2014. "Party unity and foreign policy in Latin America." *Revista Brasileira de Ciências Sociais* 29(86):125–142.

Fennell, Lee C. 1974. "Reasons for Roll Calls: An Exploratory Analysis with Argentine Data." *American Journal of Political Science* 18(2):395–403.

Finke, Daniel. 2015. "Why do European political groups call the roll?" *Party Politics* 21(5):750–762.

Godbout, Jean-François. 2014. Parliamentary Politics and Legislative Behaviour. In *Comparing Canada: Methods and Perspectives on Canadian Politics*, ed. Luc Turgeon, Martin Papillon, Jennifer Wallner and Stephen White. Vancouver: UBC Press pp. 171–197.

Goeree, Jacob K., Charles A. Holt and Thomas R. Palfrey. 2016. *Quantal Response Equilibrium: A Stochastic Theory of Games*. Princeton University Press.

Greene, William H. 2003. *Econometric Analysis (Fifth Edition)*. New York: Prentice Hall.

Hix, Simon and Abdul Noury. 2016. "Government-Opposition or Left-Right? The Institutional Determinants of Voting in Legislatures." *Political Science Research and Methods* 4(2):249–273.

Hix, Simon, Abdul Noury and Gérard Roland. 2006. *Democratic politics in the European Parliament*. Cambridge: Cambridge University Press.

Hix, Simon, Abdul Noury and Gerard Roland. 2012. "Is there a Selection Bias in Roll Call Votes? Evidence from the European Parliament." London School of Economics and Political Science, New York University, University of California, Berkeley.

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

Hug, Simon. 2013. Parliamentary Voting. In *Party Governance and Party Democracy*, ed. Wolfgang C. Müller and Hanne Marthe Narud. Springer pp. 137–157.

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

Hug, Simon. 2017. Le vote en assemblée parlementaire. In *Traité des études électorales*, ed. Nonna Mayer and Yves Deloye. Larcier pp. 547–592.

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

King, Gary and Margaret E. Roberts. 2015. "How Robust Standard Errors Expose Methodological Problems They Do Not Fix, and What to Do About it." *Political Analysis* 23(2):159–179.

Kreppel, Amie. 2002. *The European Parliament and Supranational Party System: A Study of Institutional Development*. Cambridge: Cambridge University Press.

Leemann, Lucas. 2014. "Strategy and Sample Selection: A Strategic Selection Estimator." *Political Analysis* 22(3):374–397.

McCarty, Nolan. 2011. Measuring Legislative Preferences. In *The Oxford Handbook of the American Congress*, ed. Eric Schickler and Frances E. Lee. Oxford University Press pp. 66–94.

McKelvey, Richard D. and Thomas R. Palfrey. 1995. "Quantal Response Equilibria for Normal Form Games." *Games and Economic Behavior* 10:6–38.

McKelvey, Richard D. and Thomas R. Palfrey. 1998. "Quantal Response Equilibria for Extensive Form Games." *Experimental Economics* 1:9–41.

Middlebrook, Judy. 2003. "Les méthodes de vote au sein des parlements." *Informations constitutionnelles et parlementaires* 53(186):42–67.

Mühlböck, Monika and Nikoleta Yordanova. 2015. "Party group cohesion in the European Parliament: Tracing the bias in roll-call votes." *European Political Science Review* 7(3):373–399.

Poole, Keith. 2005. *Spatial Models of Parliamentary Voting*. New York: Cambridge University Press.

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

Saalfeld, Thomas. 1995. On Dogs and Whips: Recorded Votes. In *Parliaments and Majority Rule in Western Europe*, ed. Herbert Döring. New York: St. Martin's Press pp. 528–565.

Signorino, Curtis S. 1999. "Strategic Interaction and the Statistical Analysis of International Conflict." *American Political Science Review* 93(2):279–297.

Signorino, Curtis S. 2002. "Strategy and Selection in International Relations." *International Interactions* 28(1):93–115.

Signorino, Curtis S. 2003. "Structure and Uncertainty in Discrete Choice Models." *Political Analysis* 11:316–344.

Signorino, Curtis S. and Ahmer R. Tarar. 2006. "A Unified Theory and Test of Extended Immediate Deterrence." *American Journal of Political Science* 50(3):586–605.

Signorino, Curtis S. and Kuzey Yilmaz. 2003. "Strategic Misspecification in Regression Models." *American Journal of Political Science* 47(3):551–566.

Stecker, Christian. 2010. "Causes of Roll-Call Votes Supply: Evidence from the German Länder." *Journal of Legislative Studies* 16(4):438–459.

Stecker, Christian. 2011. "Namentliche Abstimmungen als Währung individualisierter Repräsentation." *Zeitschrift für vergleichende Politikwissenschaft* 5:303–328.

Thiem, Janina. 2009. *Nationale Parteien im Europäischen Parlament. Delegation, Kontrolle und politischer Einfluss*. Wiesbaden: VS Verlag.

Thierse, Stefan. 2016. "Going on record: Revisiting the logic of roll-call vote requests in the European Parliament." *European Union Politics* 17(2):219–241.

Trumm, Siim. 2015. "Voting Procedures and Parliamentary Representation in the European Parliament." *Journal of Common Market Studies* 53(5):1126–1142.

Wüest, Reto. 2013. "A Theoretical Model of Roll Call Vote Requests." Annual Meeting of the Midwest Political Science Association, Chicago, April 11-14, 2013.

Wüest, Reto. 2016. "Roll call votes in democratic legislatures: the reasons for their use and their effects on legislative behavior." PhD dissertation, University of Geneva.

Appendix

In this appendix we first discuss a future extension of the estimator to make it more suitable for observational data, before

Theory

To overcome the weakness that in Goeree, Holt and Palfrey's (2016) setup the choice probabilities tend toward $\frac{1}{2}$ when λ_j tends toward 0, we propose a slightly different best response function as follows, making our theoretical setting slightly departing from Chiou and Yang's (2008) setup.

$$r_{ij} \quad = \quad \frac{1}{1+\exp(-\tau_j - \lambda_j(U_{ij}(R)\prod_{h\neq j}(1-r_{ih})))} \tag{4}$$

where $\tau_j \in \mathtt{R}$. The addition of τ_j in equation (2) relaxes the assumption of equal probability when λ_j tends toward 0. Instead, when $\lambda_j = 0$, player j will play R with the probability of $1/(1+\exp(-\tau_j))$, which can be estimated from data. When λ_j is greater than zero, τ_j would capture the random probability of player j's playing r since this player's strategy does not depend on how the other players will play and how beneficial it is to play this strategy. This implies that τ_j generally represents the effect that is not explained by strategic consideration or exogenous variables included in the net utility of playing r.

Empirics

In this section, we allow coefficients to vary by party by estimating a multivariate probit model. This model allows for correlations among the error terms across parties, but falls short of accounting for strategic aspects. The results are reported in Tables 3 and 4.

Allowing coefficients to vary across parties, enables us to test if it is sensible to restrict the coefficients to be identical across parties. The first thing to note from these results is that the coefficients vary substantively across parties. Note that the variation is not simply in terms of magnitude. The sign of many of the variables also differ across parties. Consider for example *ipp*, the variable used to test H_3. In the original model, it is negative and significantly different from zero. While it is negative and significant for the two main parties, PPE and PSE as well as for IND/Dem and Verts, it is positive and large in magnitude for the Liberal ALDE. The win-margin amongst committee members is more consistent with the original results. Here, in line with Thierse (2016), the effect is negative and significant for all parties but UEN, where the effect is imprecisely estimated.

Thierse (2016) fails to find a relationship between policy position and roll call requests. Allowing this effect to vary by party, the results from the multivariate

Table 3: Replication of Thierse's analysis with multivariate probit

	(PPE)	(PSE)	(ALDE)	(GUE)	(IND)	(UEN)	(Verts)
EPG amendment	0.853***	1.102***	1.261***	1.408***	1.313***	0.898**	0.904***
	(0.141)	(0.137)	(0.149)	(0.0971)	(0.152)	(0.390)	(0.0796)
Joint amendment	0.474***	0.637***	0.818***	0.782***	0.581***	0.758***	0.593***
	(0.111)	(0.111)	(0.161)	(0.124)	(0.196)	(0.287)	(0.0836)
Committee amendment	-0.0524	-0.224**	-0.272*	0.0163	-0.413***	0.0100	-0.0754
	(0.0687)	(0.102)	(0.154)	(0.0860)	(0.0794)	(0.147)	(0.0565)
Final vote	0.993***	0.699***	0.640***	0.271	2.358***	0.260	0.149
	(0.106)	(0.130)	(0.217)	(0.172)	(0.100)	(0.329)	(0.128)
IPP	-0.267*	-0.477**	1.177***	0.0288	-0.486***	-0.616	-0.382***
	(0.143)	(0.187)	(0.226)	(0.161)	(0.148)	(0.459)	(0.114)
EPG committee vote	-1.123***	-0.500**	-0.510***	-0.427***	-0.487***	5.340	-0.330***
	(0.145)	(0.220)	(0.165)	(0.0862)	(0.0998)	(3.711)	(0.0634)
EPG committee vote (missing)				-3.694	-0.341**	5.132	-3.680
				(119.1)	(0.167)	(3.709)	(157.7)
Reading	0.463***	0.0194	0.153	0.108	0.837***	-0.184	0.441***
	(0.0845)	(0.121)	(0.156)	(0.106)	(0.0906)	(0.302)	(0.0724)
Rapporteur	0.0866	0.409***	0.289*	0.366**	-1.128**	1.800***	0.539***
	(0.0653)	(0.0920)	(0.154)	(0.152)	(0.492)	(0.248)	(0.0933)
# Amendments	0.00242	-0.898***	-0.565*	0.457**	0.323*	0.729	0.624***
	(0.188)	(0.282)	(0.329)	(0.210)	(0.196)	(0.496)	(0.136)
Media	-0.158	0.535**	-0.626	-0.124	-0.633***	1.124**	0.256**
	(0.197)	(0.213)	(0.607)	(0.160)	(0.224)	(0.459)	(0.126)
Policy position	0.280	-0.511*	0.0336	-0.496***	-1.599***	-2.455*	0.414**
	(0.216)	(0.262)	(0.248)	(0.143)	(0.579)	(1.492)	(0.171)
Policy salience	-0.281*	-0.372**	-0.625	-0.292	-0.920***	-4.211***	0.196*
	(0.161)	(0.171)	(0.459)	(0.178)	(0.283)	(0.981)	(0.117)
Constant	-0.995***	-1.170***	-2.335***	-1.611***	-0.663**	-6.201*	-1.768***
	(0.203)	(0.307)	(0.258)	(0.123)	(0.326)	(3.723)	(0.116)
at(rho)		0.252***	0.167**	0.0645	0.0479	-0.0588	0.205***
		(0.0590)	(0.0784)	(0.0564)	(0.0497)	(0.0953)	(0.0370)
at(rho)			0.114	0.0282	0.204***	-0.0831	0.152***
			(0.0866)	(0.0599)	(0.0513)	(0.114)	(0.0426)
at(rho)				0.0779	0.0400	-0.140	0.0868*
				(0.0662)	(0.0610)	(0.104)	(0.0448)
at(rho)					-0.0162	0.458***	0.347***
					(0.0515)	(0.0849)	(0.0412)
at(rho)						-0.0372	0.0443
						(0.0966)	(0.0411)
at(rho)							0.195***
							(0.0537)
Observations				6,001			

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

probit model show that the effect varies substantively across parties. While it is negative and significant for PSE, GUE/NGL, IND/Dem and UEN, it is positive for Verts. Only in the cases of ALDE and PPE are there not sufficient evidence in favor of an effect of policy position, one direction or another. Moving on to policy salience, we see that the heterogeneity in the effect is present here as well. While the original result shows a positive and significant effect of policy salience, our results are again rather mixed, both in terms of direction and magnitude. the effect is negative and significant for PPE, PSE, IND/DEM and UEN. The magnitude ranges from -.281 (PPE) to -4.211 (UEN). Only for the Verts do we find an effect that is significant and in the same direction, although only $\frac{2}{5}$ of the magnitude of the original results.

Similar patterns emerge for the other variables. The effect of media, important for the signaling logic, positive and significant in the original results, turns out positive and significant in the case of PSE, UEN, and Verts, with vastly different magnitudes on the effects, while returning negative and significant results for IND/DEM. Clearly, forcing the coefficients to be identical across parties, is a strong assumption that may result in misleading results, even if strategic considerations are not accounted for. We account for such considerations in the next subsection.

When we carry out the same estimation but only on the pre-2008 votes we get quite different results as Table 4 suggests. In 2008, IND/DEM started requesting roll call votes on all final votes. This did not only increase the proportion and characteristics of roll calls votes, it may also have changed the strategic calculations of parties considering requesting roll calls.

Table 4: Replication of Thierse's analysis with multivariate probit (pre 2008)

	(PPE)	(PSE)	(ALDE)	(GUE)	(IND)	(UEN)	(Verts)
EPG amendment	0.551***	0.917***	0.718***	1.552***	1.671***	0.925**	0.933***
	(0.196)	(0.185)	(0.209)	(0.129)	(0.189)	(0.394)	(0.0976)
Joint amendment	0.397***	0.858***	1.041***	1.021***	0.827***	1.684***	0.687***
	(0.146)	(0.162)	(0.209)	(0.156)	(0.272)	(0.364)	(0.110)
Committee amendment	-0.172**	-0.302**	-0.514***	0.0544	-0.184	0.0286	-0.169**
	(0.0841)	(0.153)	(0.191)	(0.113)	(0.119)	(0.155)	(0.0702)
Final vote	1.217***	0.629***	0.644**	0.813***	1.126***	0.210	0.0780
	(0.156)	(0.240)	(0.286)	(0.232)	(0.185)	(0.430)	(0.227)
IPP	-0.261	-0.705**	1.595***	0.624***	-0.290	-0.537	-0.305**
	(0.188)	(0.337)	(0.337)	(0.235)	(0.252)	(0.568)	(0.153)
EPG committee vote	-1.533***	-1.092***	-0.625***	-0.519***	-0.0771	5.055	-0.297***
	(0.187)	(0.421)	(0.212)	(0.109)	(0.138)	(4.300)	(0.0867)
EPG committee vote (missing)				-4.096	0.0534	4.808	-3.708
				(177.7)	(0.216)	(4.286)	(210.9)
Reading	0.152	-0.649**	-0.492**	0.0161	0.159	-0.592	0.437***
	(0.113)	(0.263)	(0.242)	(0.143)	(0.161)	(0.380)	(0.0942)
Rapporteur	0.351***	0.325**	0.445**	0.333*	-3.775	1.883***	0.774***
	(0.0873)	(0.148)	(0.186)	(0.185)	(203.5)	(0.310)	(0.113)
# Amendments	-0.277	-0.205	-1.775***	0.563**	0.152	0.305	0.745***
	(0.224)	(0.399)	(0.547)	(0.237)	(0.267)	(0.550)	(0.158)
Media	-0.471*	-0.0664	-0.644	-0.589***	-0.0213	1.064**	0.235
	(0.274)	(0.327)	(1.410)	(0.200)	(0.252)	(0.471)	(0.151)
Policy position	1.493***	-1.720***	-0.302	-0.589***	-2.435***	2.198	0.459*
	(0.370)	(0.528)	(0.286)	(0.183)	(0.844)	(2.028)	(0.249)
Policy salience	-0.805***	-0.787**	-0.644	-0.861***	-0.861*	-2.659*	0.249
	(0.251)	(0.313)	(0.674)	(0.275)	(0.443)	(1.437)	(0.183)
Constant	-1.179***	0.0900	-1.762***	-1.616***	-0.698	-8.284*	-1.920***
	(0.282)	(0.559)	(0.326)	(0.175)	(0.489)	(4.283)	(0.161)
at(rho)		0.186**	0.216**	0.219***	0.0854	-0.0630	0.233***
		(0.0796)	(0.100)	(0.0689)	(0.0700)	(0.106)	(0.0463)
at(rho)			0.212*	0.221***	0.160**	-0.134	0.208***
			(0.122)	(0.0712)	(0.0782)	(0.103)	(0.0596)
at(rho)				-0.0337	-0.0153	-0.350***	-0.0490
				(0.0892)	(0.0812)	(0.106)	(0.0647)
at(rho)					0.254***	0.495***	0.299***
					(0.0882)	(0.0965)	(0.0524)
at(rho)						0.0631	0.0815
						(0.102)	(0.0580)
at(rho)							0.170***
							(0.0609)
Observations				3,851			
ll				-3072			

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1