Competing Agendas in Congress: Comparing Observed Roll Rates to a Hypothetical Baseline*

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ABSTRACT

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The debate over parties in Congress has evolved from addressing the question, 'Do parties matter?' (Cox and McCubbins 1993; Krehbiel 1991, 1993; Rohde 1991, 1994; Aldrich 1995) to more fully addressing the question, '*How* do parties matter?' (Cox and McCubbins 1997, 2005; Gailmard and Jenkins 2007; Jenkins, Crespin, and Carson 2005; Monroe and Robinson 2008; Schickler and Rich 1997). Questions of agenda control and agenda effects have become particularly important in recent scholarship. This paper addresses these questions by applying some simple simulation techniques to some standard models of the congressional agenda.

Roll rates analysis has been proposed as the means of finding a critical test between partisan and nonpartisan theories of the congressional agenda (Cox and McCubbins 2005). Doubt remains about what roll rates analysis tells us, however, due to the problem, pervasive in this literature, of observational equivalence between arguments about the agenda (Krehbiel 2007, "Pivots"). Patterns in roll rates seem to support partisan arguments, but

Roll rates and inference

This paper is about the use of roll rates in legislative (and especially *congressional*) research. A roll, in this context, refers to a vote in a legislature where an individual member or the majority of a group of members votes no while the measure being voted upon nevertheless passes. A roll rate, then, aggregates across votes and measures the proportion of total votes (often of a subsample of all votes cast) on which an individual or group was rolled.[1] To the more general audience, this measure may appear overly specific. [2] Despite the intuitive appeal of some alternative measures, roll rates are relevant to many recent debates in legislative scholarship because they help overcome some of the severe limitations of conducting

[1]The roll rate is calculated simply: $\frac{\#\text{ rolls}}{\#\text{ total votes}}$

[2]Why not simply count the number of times a member or group votes with the winning/losing side? This certainly may seem more intuitive, but not all wins or losses mean the same thing (see Cox and McCubbins 2005, 232-4). Because of the setup of the simulations described below, though, roll rates and win rates are complements of one another, in that every simulated bill is located at the floor median at the time of final passage *and passes*.

theory-driven empirical analysis of legislative voting.

Using roll rates in legislative research is to look for evidence in support of our predictions among the second-order consequences of legislative agendas. If we had our way, we would look for first-order consequences by observing the locations of status quos targeted for policy change and the location of proposed legislation throughout the process of its consideration; and we would observe both in a meaningful policy space of appropriate dimensionality. Roll rates allow us, with certain assumptions, to gain insight into legislators' evaluations of the alternative policy choices on which they vote. In other words, roll rates allow us to infer important things about the choice between proposal and status quo at the vote on final passage. How we then proceed depends upon some important assumptions, which I will discuss in detail further below.

In the scenario in Figure 1, the hypothetical member is located on a single dimension along with an existing policy and a proposal that would change that policy. Because the existing policy is closer to the member's ideal policy, the member votes no in this scenario. If the proposed policy passes in spite of the member's opposition, then that member is said to be rolled. The key to using rolls as a measure is the notion of backward induction (Cox and McCubbins 2005). If a member knows that a dispreferred proposal will pass *and she possesses the means to prevent the proposal from being considered in the first place*, then she should do so to prevent a loss of policy utility. Regardless of the institutional tools a member of a legislative body uses to block consideration, this ability is referred to generally as *negative agenda control*. When individual legislators or groups of legislators are rolled on final passage, the strong suggestion is that they failed to exercise negative agenda control, either because they chose not to or, more likely, because they lacked the necessary institutional tools to exercise it.

[Figure 1 about here]

As the scenario in Figure 1 repeats itself, the hypothetical member's roll rate increases. A roll rate works, then, as a measure of the capacity for (or exercise of) negative agenda control

possessed by an individual or group. The greater the level of negative agenda control, the lower the roll rate.

Using roll rates to make inferences about agenda control requires some important assumptions. Notably, we need to assume a unidimensional policy space[3], single-peaked Euclidean preferences, sincere voting, and an open rule procedure. When these assumptions hold, a roll tells us something very important—that the status quo is farther away from a rolled member's ideal point than is the median voter's ideal point. Tendencies in the status quos targeted for change, which we infer from who gets rolled, should reveal who, if anyone, is exercising negative agenda control.

Further, it is crucial to limit a roll rates analysis to final passage votes, since these are the only[4] votes on which the status quo is evaluated against the proposed legislation, which is, by assumption, located at the floor median's ideal point.

The mechanics of negative agenda control in the House

The Rules Committee in the House controls access to the Committee of the Whole procedure, which has long been the means by which important *non-consensus* legislation makes its way through the House (Tiefer 1989; Oleszek 2004). There has long been a debate over the place of the Rules Committee in the various conceivable principal-agent relationships in the House. Some have argued that the Rules Committee is an agent of the majority party leadership (Oppenheimer 1977; Bach and Smith 1988; Sinclair 1994), while others have argued that Rules is an agent of the floor majority, i.e. the median member of the House, (Krehbiel 1991), while others have suggested that the Rules Committee is, or has been at times, an independent actor (Dion and Huber 1996; Schickler and Rich 1997).

In the minimal cartel agenda model (see particularly Cox and McCubbins 2005, 66) the

[3]On any given bill/issue.

[4]This is not strictly true, as conference report votes also involve evaluation of the status quo against the proposal. Roll rates on conference reports, though, may tell us as much about interinstitutional dynamics as they do about agenda control in the House. See Carson, Monroe, and Robinson N.d. for an analysis of conference report roll rates.

Rules Committee's primary role is in contributing to the maintenance of a "majority-party blockout zone," which consists of the set of status quos that the majority party median prefers to the ideal point of the floor median where, in the model, all bills end up being amended. A more powerful majority party goes further, using the Rules Committee to craft restrictive rules to make take-it-or-leave-it offers to the floor median or even to make ex post changes to legislation that may have emerged from committee in a form less than optimal from the majority party median's perspective (Marshall 2005, Monroe and Robinson 2008).

A nonpartisan view of agenda construction (see especially Krehbiel 1991) has no place for a Rules Committee that uses its position to bias the agenda, either in its own interests or as an agent of the majority party. Given Krehbiel's (1991, 16) "majoritarian postulate," the Rules Committee must be an agent of the floor median in the nonpartisan view.[5] In this view, then, there is essentially no negative agenda control, since the floor median is the only actor in the House whose support for changing the status quo (and moving it to her ideal point) is both necessary *and* sufficient.

Different agendas, diverging predictions of roll rates

There is a long tradition of using vote analysis to assess the power and influence of members or to reveal the nature of coalitions in legislatures, committees, etc. (Rice 1928; Shapley and Shubik 1954; Grumm 1964; Fenno 1966; MacRae 1958, 1970; Poole and Rosenthal 1997). Often these analyses make grander, more sweeping statements than can be made on the basis of an analysis of roll rates. Roll rates, though, constitute a valuable albeit limited tool that allows us to make empirical statements regarding real world agendas, going beyond theoretical statements about the potential for creating bias in outcomes through control of the agenda. Roll rates measured at the level of the individual legislator or at the level of a coalition of members can reveal whose interests are taken into account when the legislative

[5]The Majoritarian Postulate states that "objects of legislative choice in both the procedural and policy domains must be chosen by a majority of the legislature (Krehbiel 1991, 16)." Krehbiel's subsequent argument, then, is that a majority (i.e. the median member of the legislature) would not acquiesce to the creation of institutions that limit its prerogatives.

agenda is constructed.

[Figure 2 about here]

Figure 2 presents another spatial illustration of a roll. In this case we have a nine-member legislature, a majority party (members 1 through 5) and minority party (members 6 through 9), a floor median F (member 5), a majority party median M (member 3), a minority median m (located at the point equidistant between members 7 and 8), a status quo interior to the minority party coalition, a bill location, and a cut point equidistant between the bill and the status quo. In this scenario members 1, 2, 3, 4, 5, and 6 vote in favor of the bill while members 7, 8, and 9 vote against the bill (in favor of the status quo). *Members 7, 8, and 9 are rolled, as is the minority party as a coalition.* Observing this discrete outcome might lead the observer to infer that the majority party or some subset of its members has an advantage in the construction of the agenda. Any particular discrete outcome that suggests a majority party advantage is in no way excluded by nonpartisan theories of the legislative agenda, though. One must look instead to aggregate patterns in roll rates to make inferences about agenda power. The ground on which partisan and nonpartisan theories diverge relates to the set of status quos in a unidimensional policy space that are 'targetable' for change.[6] This, in turn, leads to the divergent predictions of the theories with respect to the pattern of roll rates we should expect to observe.

[Figure 3 about here]

Nonpartisan theories of the legislative agenda view the entirety of the policy space as containing status quos that are 'targetable' for change. This means that no members in the legislature possess the ability to protect status quos[7] that they prefer to the floor median's ideal point, as Figure 3 shows.[8] Figure 4 shows targetable status quos under the minimal

[6]Focusing on the minimal cartel agenda model means consciously eliding differences between partisan and nonpartisan perspectives in where proposed bills are expected to be located at final passage.

[7]This leaves aside later nonpartisan arguments, principally Krehbiel 1998, that point to institutionally-empowered 'pivotal' members as exercising negative agenda power.

[8]Here, the floor median (F) is shown 'protecting' status quos at or near her ideal point. Since, by assumption, all bills are amended to F, the primary reason why F might block consideration of these

cartel agenda model. Here the majority party median (M) protects status quos in a particular portion of the policy space with the understanding that any policy considered on the floor will end up at F. M therefore protects status quos in the interval (2M-F,F).[9]

[Figure 4 about here]

Diverging predictions about the agenda may be crucial from a theoretical perspective, but serious empirical limitations arise. Principally, how do we measure status quos? Roll rates analysis was proposed as a solution to this problem, but is still susceptible to arguments of partial observational equivalence from alternative theories (Krehbiel 2007). The solution I propose in the following sections is to simulate a counterfactual, nonpartisan agenda, producing hypothetical individual roll rates, and then comparing them in various ways to observed individual roll rates calculated by Cox and McCubbins (N.d.).

Simulating counterfactual nonpartisan roll rates

I begin with Keith Poole's NOMINATE Common Space scores for members of the United States House of Representatives from the 102nd and 105th Congresses.[10] Next, I draw two samples ($J = 189$ for the 102nd and $J = 190$ for the 105th) from a uniform distribution over the NOMINATE policy space, [-1,1].[11] These draws represent the counterfactual nonpartisan agenda with which I calculate hypothetical roll rates that can then be compared to observed roll rates from these same Congresses. A roll for member i with ideal point MH_i

unmovable status quos would be the avoidance of opportunity costs with respect to the time spent on consideration.

[9]Here M is portrayed as flipping a coin when considering the prospect of allowing consideration of a status quo at 2M-F, member 1's ideal point. A cleaner figure could be presented by assuming opposition under spatial indifference. But it is important to keep in mind that, under the minimal cartel model, extreme majority party members (and therefore extreme status quos) are not always protected by the majority party's agenda control, a point that will become important in the empirical section below.

[10]Retrieved from `http://www.voteview.com/`.

[11]I use the uniform distribution in this version of the paper because it is easily implemented in many software packages. A uniform distribution may be less sustainable from a theoretical perspective, though, since the agenda setter, F, would presumably prefer to target the farthest status quos first. Indeed, this would likely exacerbate the potential for apparently partisan roll rates under a nonpartisan agenda that is briefly outlined in the appendix.

on the jth simulated final passage roll call is calculated as follows:

$$\text{Roll}_{\,i\,j} = 1 \text{ if } |MH_i - SQ_j| < |MH_i - F|$$

$$\text{Roll}_{\,i\,j} = 0 \text{ if } |MH_i - SQ_j| > |MH_i - F|$$

The roll rate for member i is simply:

$$\frac{\sum_{j=1}^{J} Roll_{\,i\,j}}{J}.$$

[Figure 5 about here]

Figure 5 shows the hypothetical roll rates for the 102nd Congress graphed against the observed roll rates, during which the Democrats were in the majority with 270 seats, the Republicans were in the minority with 164 seats, and there was 1 independent member.[12] I begin with naive comparisons of majority and minority roll rates, both hypothetical and observed. Table 1 shows a difference of means t-test of the observed majority and minority party roll rates from the 102nd Congress, while Table 2 shows the same for the hypothetical roll rates.

[Tables 1 & 2 about here]

The problem from the perspective of partisan arguments is that even the hypothetical roll rates, generated from the assumptions of a nonpartisan agenda argument, seem to suggest a majority party bias. Figure 6 shows the observed and hypothetical roll rates for the 105th Congress, which had a Republican majority of 228 members, a Democratic minority of 206, and 1 independent. Tables 3 and 4 present another t-test, this time for the 105th Congress. Again, even the nonpartisan hypothetical roll rates could be interpreted as revealing a majority party bias. This could be construed as an artifact of the mechanics of simulating

[12]The observed roll rates are taken from `http://www.settingtheagenda.com/`.

rolls over the NOMINATE policy space. But a more general point is revealed by the result—that any finite unidimensional policy space will produce an apparent majority party bias (whether measured with roll rates or win rates) when the floor median is off-center in the space.[13] This scenario is especially common when the conditions of Rohde's (1991) conditional party government theory are met; when, in other words, we should otherwise expect the active exercise of power by the majority party in the House. But this only reveals further the problem of observational equivalence in the empirical implications of partisan and nonpartisan arguments about the congressional agenda.

[Figure 6 about here]

[Tables 3 & 4 about here]

An alternative to a graphical illustration or simple side-by-side t-tests is to use Seemingly Unrelated Regression (SUREG) analysis with observed and hypothetical roll rates as the respective dependent variables. This way, one can test the relative effect on two related dependent variables of a common explanatory variable.

[Table 5 about here]

Table 5 presents the results of a simple SUREG analysis of 102nd Congress, modeling hypothetical and observed roll rates as a function of majority party status. For both dependent variables, both hypothetical and observed, majority party status has a significant and negative effect on an individual member's roll rate. In addition, we cannot reject the null hypothesis that the effect of majority party status is the same in both equations.

[Table 6 about here]

The prospect of distinguishing partisan roll rates produced by actual agenda manipulation from partisan roll rates as an artifact fares even worse in Table 6, a similar analysis of the 105th Congress. In each case, though, a simple majority party dummy variable in no way

[13]This point is slightly tangential to this paper, but I briefly outline it in the appendix of the paper.

captures the actual argument of the minimal cartel agenda model. So before we throw our hands into the air and surrender to observational equivalence, we must take seriously the details of that argument in our empirics.

The test of party agenda effects

[Figure 7 about here]

Figure 7 illustrates the argument made by Cox and McCubbins (2005) that I have been referring to as the minimal cartel agenda model. The majority party median wields the power of the chamber and of the caucus to protect status quos that she prefers to F from being considered and thus moved to F. Members whose ideal points fall within the interval [2M-F, F] are protected by the negative agenda power wielded by (or on behalf of) the majority party median. Within this interval there is variation, however. Members in the interval (M,F) are absolutely protected from being rolled, while members in the interval [2M-F,M) are only partially protected, since they prefer some status quos to the extreme side of 2M-F that M is nevertheless willing to allow to be moved to F. Because of this, the appropriate prediction for roll rates as a function of distance is taken from distance from the interval (M,F), which is illustrated in Figure 8.

[Figure 8 about here]

Instead of a majority party dummy variable, then, we can model roll rates as (at the same time) a function of distance from the no roll zone and distance from the floor median in order to demonstrate the divergence in inferences drawn from observed vs. hypothetical roll rates. Following the empirical strategy above, then, Tables 7 and 8 present the results from a SUREG analysis of the 102nd and 105th Congresses, respectively.

[Tables 7 & 8 about here]

Only here, finally, do we find a result that convincingly distinguishes the hypothetical roll rates from the real world roll rates from these two Congresses. Distance from F is a powerful

predictor of the hypothetical roll rates in both the 102nd and 105th Congress, as it should be. Distance from the no roll zone is only significant in the hypothetical equation for the 102nd Congress, but its substantive effect is much smaller than the effect of distance from the floor median. For observed roll rates, however, distance from the floor median predicts a decrease in members' roll rates, and significantly so for the 102nd Congress! Distance from the no roll zone is a strong predictor of a member's observed roll rate in both Congresses. Tests of equality show chi^2 statistics consistent with significant differences in the two distance coefficients across the equations. In sum, the nonpartisan model fits hypothetical data that were (arguably, anyway) generated from its assumptions, while the cartel agenda model is a much better fit for observed data from the real House of Representatives.

Concluding remarks

Extensions of this research could do a few things. First would be to use a different measure of legislators' preferences that is not based on roll calls in order to generate the hypothetical roll rates. Since measures like the various incarnations of NOMINATE or even ADA scores are based on roll calls, which are in turn produced by the real world agenda which is strategically constructed (if partisan theories are correct), there is some reason to be skeptical that our distance-based measures are free of bias. A second extension would be simply to look at more Congresses, with more runs of the simulated agendas, etc. A third would consider more nuanced nonpartisan arguments about agenda construction—at least more nuanced than positing a random draw of status quos from a uniform distribution. Other extensions would deal more with finite vs. infinite policy spaces both in terms of breadth and in terms of density. The import of a 'horizontally' restricted policy dimension is underexplored in the literature, while the notion that new policies passed at time t represent status quos that may or not be moved at time $t + 1$ is important, and dealing with it is tractable using a simulation approach.

Setting aside the work to be done, though, this paper seems to have important method-

ological, theoretical, and substantive implications. Methodologically, the use of simple simulation techniques can overcome some difficult inferential problems by allowing us to generate counterfactual data from the assumptions of alternative theories and compare them to our real world observations. Theoretically this paper has (hopefully) contributed to our growing understanding of how even 'weak' parties can generate significant bias in policy outcomes. Substantively, in a grand sense, pundits, journalists, and even citizens interested in notions of representation, party government, or accountability could benefit from a consideration of the counterfactual since, *contra* Pangloss, this is not necessarily the best of all possible worlds, nor is the current state of our legislative politics inevitable.

References

Aldrich, John H. 1995. *Why Parties?* Chicago: University of Chicago Press.

Bach, Stanley, and Steven S. Smith. 1988. *Managing Uncertainty in the House of Representatives: Adaptation and Innovation in Special Rules.* Washington: Brookings Institution.

Cox Gary W., and Mathew D. McCubbins. 1993. *Legislative Leviathan: Party Government in the House.* Berkeley: University of California Press.

Cox, Gary W., and Mathew D. McCubbins. 1997. "Toward a Theory of Legislative Rules Changes: Assessing Schickler and Rich's Evidence." *American Journal of Political Science* 41(4): 1376-1386.

Cox, Gary W., and Mathew D. McCubbins. 2005. *Setting the Agenda: Responsible Party Government in the U.S. House of Representatives.* Cambridge: Cambridge University Press.

Cox, Gary W., and Mathew D. McCubbins. N.d. "Individual Roll Rates." Typescript. University of California, San Diego.

Dion, Douglas, and John D. Huber. 1996. "Procedural Choice and the House Committee on Rules." *Journal of Politics* 58(1): 25-53.

Gailmard, Sean, and Jeffrey A. Jenkins. 2007. "Negative Agenda Control in the Senate and House: Fingerprints of Majority Party Power." *Journal of Politics* 69(3): 689-700.

Jenkins, Jeffery A, Michael H. Crespin, and Jamie L. Carson. 2005. "Parties as Procedural Coalitions in Congress: An Examination of Differing Career Tracks." *Legislative Studies Quarterly* 30(3): 365-90.

Krehbiel, Keith. 1991. *Information and Legislative Organization.* Ann Arbor: University of Michigan Press.

Krehbiel, Keith. 1993. "Where's the Party?" *British Journal of Political Science* 23(2): 235-66.

Krehbiel, Keith. 1998. *Pivotal Politics.* Chicago: University of Chicago Press.

Keith Krehbiel. 2007. "Partisan Roll Rates in a Nonpartisan Legislature." *Journal of Law, Economics, and Organization* 23(1):1-23.

MacRae, Duncan. 1958. *Dimensions of Congressional Voting.* Berkeley: University of California Press.

MacRae, Duncan. 1970. *Issues and Parties in Legislative Voting* New York: Harper & Row.

Marshall, Bryan W. 2005. *Rules for War: Procedural Choice in the US House of Representatives.* Burlington, VT: Ashgate.

Oleszek, Walter J. 2004. *Congressional Procedures and the Policy Process,* 6th Ed. Washington: CQ Press.

Oppenheimer, Bruce I. 1977. "The Rules Committee: New Arm of the Leadership in a Decentralized House." In Lawrence C. Dodd and Bruce I. Oppenheimer (eds.) *Congress Reconsidered*. New York: Preager, 96-116.

Poole, Keith T., and Howard Rosenthal. 1997. *Congress: A Political-Economic History of Roll Call Voting.* New York: Oxford University Press.

Rice, Stuart A. 1928. *Quantitative Methods in Politics*. New York: Knopf.

Rohde, David W. 1991. *Parties and Leaders in the PostReform House.* Chicago, University of Chicago Press.

Rohde, David W. 1994. "Parties and Committees in the House: Member Motivations, Issues, and Institutional Arrangements." *Legislative Studies Quarterly* 19:341-59.

Schickler, Eric, and Andrew Rich. 1997. "Controlling the Floor: Parties as Procedural Coalitions in the House." *American Journal of Political Science* 41(4):1340-1375.

Shapley, Lloyd S., and Martin Shubik. 1954. "A Method for Evaluating the Distribution of Power in a Committee System." *American Political Science Review* 48:787-792.

Sinclair, Barbara. 1994. "House Special Rules and the Institutional Design Controversy." *Legislative Studies Quarterly* 19(4): 477-94.

Tiefer, Charles. 1989. *Congressional Practice and Procedure.* New York: Greenwood Press.

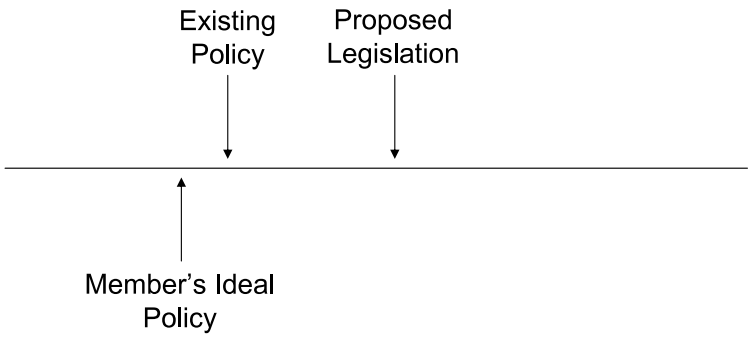

Figure 1: Spatial Illustration of a Roll.

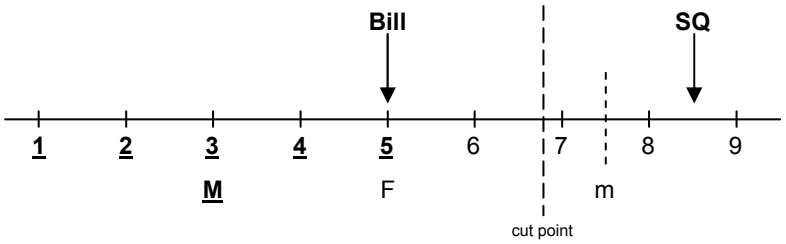

Figure 2: Spatial Illustration of Rolls in a Nine-member Legislature.

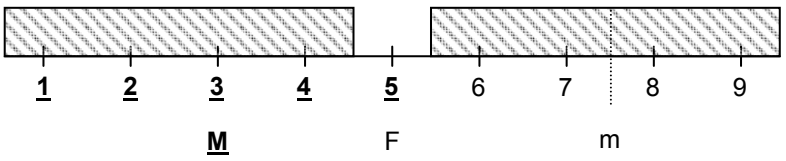

Figure 3: 'Targetable' SQs Under a Nonpartisan Agenda.

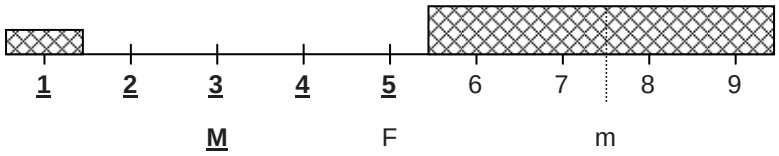

Figure 4: 'Targetable' SQs Under a Party Cartel Agenda.

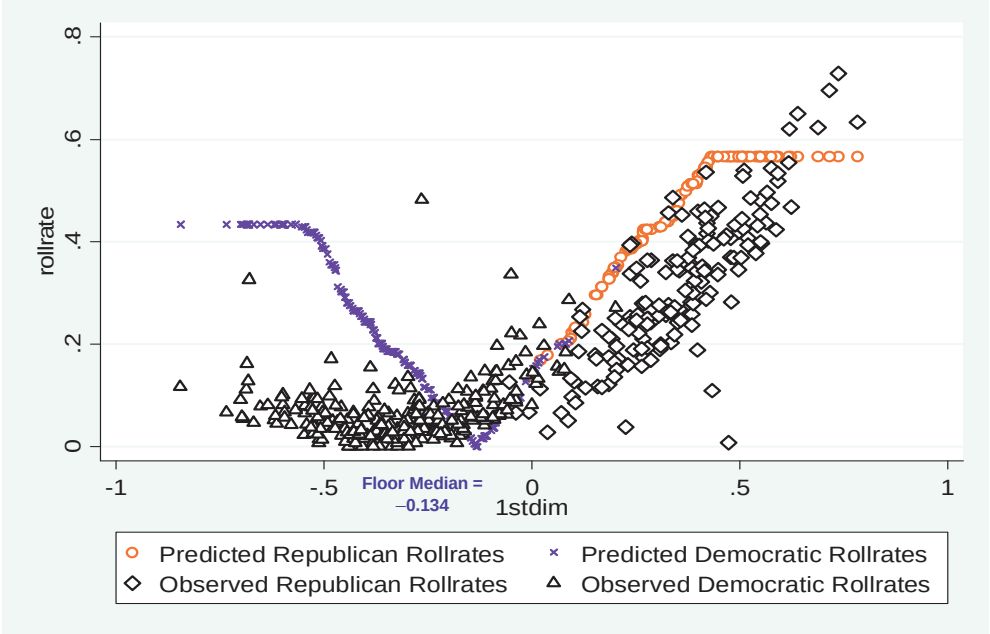

Figure 5: Observed vs. Hypothetical Roll Rates, 102nd Congress.

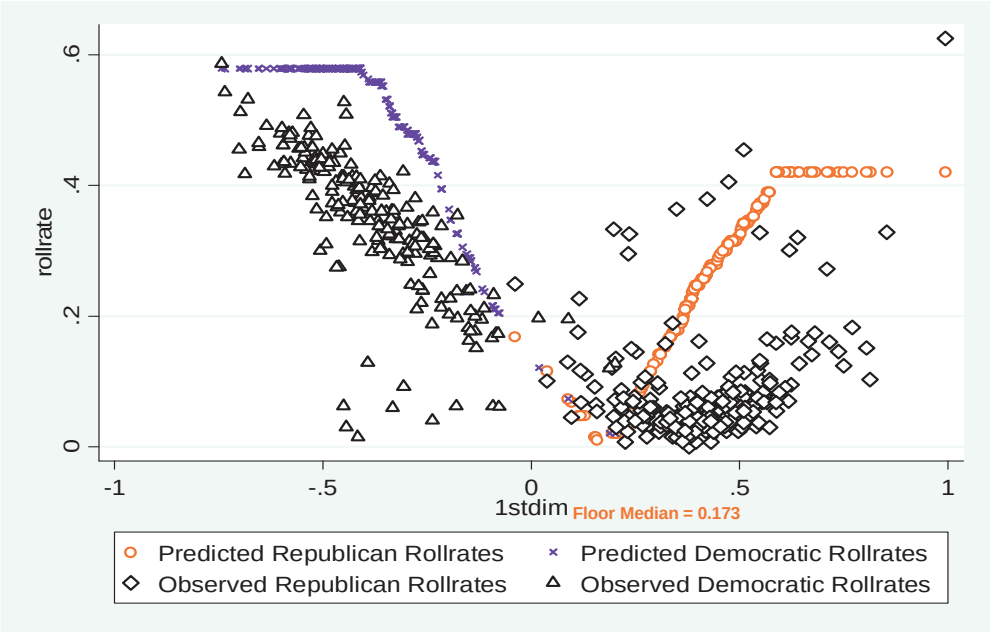

Figure 6: Observed vs. Hypothetical Roll Rates, 105th Congress.

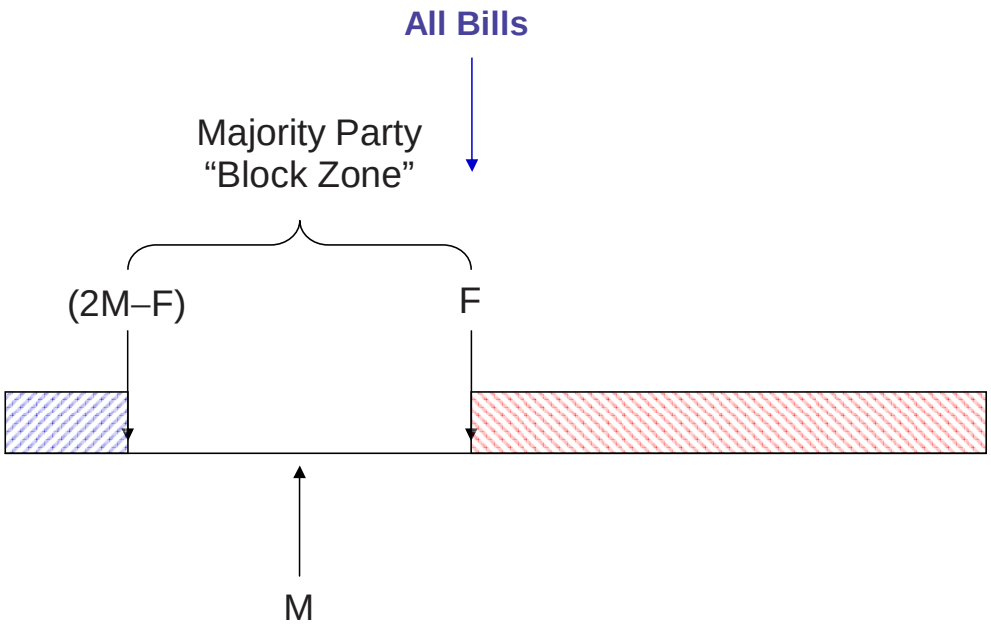

Figure 7: The Minimal Cartel Agenda Model.

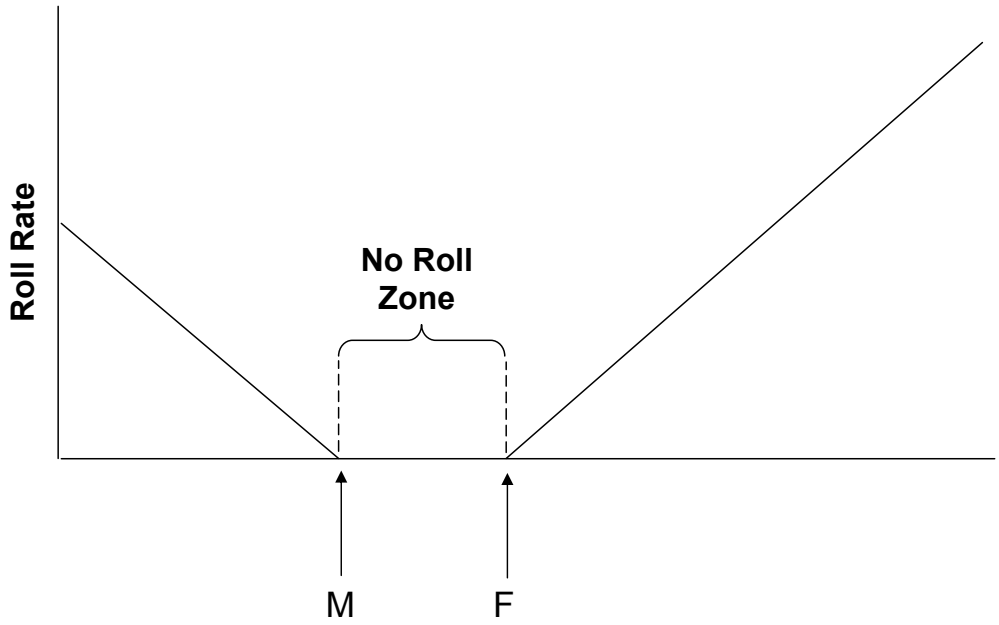

Figure 8: Cartel Model Prediction of Roll Rates in Distance from 'No Roll Zone'.

Table 1: Difference of Means—Observed Majority and Minority Party Roll Rates, 102nd Congress

Group	Mean	Standard Error	N
Majority Member	0.067	0.0036	270
Minority Member	0.312	0.0108	167
$t = 25.37$			
Degrees of freedom = 435			
p-value < 0.001			

Table 2: Difference of Means—Hypothetical Majority and Minority Party Roll Rates, 102nd Congress

Group	Mean	Standard Error	N
Majority Member	0.198	0.0081	270
Minority Member	0.454	0.0089	167
$t = 20.49$			
Degrees of freedom = 435			
p-value < 0.001			

Table 3: Difference of Means—Observed Majority and Minority Party Roll Rates, 105th Congress

Group	Mean	Standard Error	N
Majority Member	0.084	0.0055	230
Minority Member	0.344	0.0076	211

$t = 28.19$
Degrees of freedom $= 439$
p-value < 0.001

Table 4: Difference of Means—Hypothetical Majority and Minority Party Roll Rates, 105th Congress

Group	Mean	Standard Error	N
Majority Member	0.240	0.0079	231
Minority Member	0.502	0.0081	211

$t = 23.12$
Degrees of freedom $= 440$
p-value < 0.001

Table 5: SUREG - Observed vs. Hypothetical Roll Rates, 102nd Congress

Equation	N	Parms.	RMSE	R^2	χ^2	p
Hypothetical	437	1	0.126	0.49	421.6	<0.0001
Observed	437	1	0.098	0.60	646.55	<0.0001

	Coef. (Std. Err.)
Hypothetical Roll Rate	
Majority Party(β)	-.256 (.012)*
Constant (α)	.454 (.010)*
Observed Roll Rate	
Majority Party(β)	-.245 (.010)*
Constant (α)	.312 (.008)*

Test: $\beta_{Hypothetical} = \beta_{Observed}$

$\chi^2_1 = 0.73$

p-value $= 0.394$

Table 6: SUREG - Observed vs. Hypothetical Roll Rates, 105th Congress

Equation	N	Parms.	RMSE	R^2	χ^2	p
Hypothetical	441	1	0.119	0.55	536.6	<0.0001
Observed	441	1	0.097	0.64	798.5	<0.0001

	Coef. (Std. Err.)
Hypothetical Roll Rate	
Majority Party(β)	-.262 (.011)*
Constant (α)	.502 (.008)*
Observed Roll Rate	
Majority Party(β)	-.260 (.009)*
Constant (α)	.344 (.007)*

Test: $\beta_{Hypothetical} = \beta_{Observed}$

$\chi^2_1 = 0.02$

p-value $= 0.887$

Table 7: SUREG - Observed vs. Hypothetical Roll Rates, 102nd Congress

Equation	N	Parms.	RMSE	R^2	χ^2	p
Hypothetical	437	2	0.039	0.95	8729.7	<0.0001
Observed	437	2	0.069	0.80	1758.6	<0.0001

	Coef. (Std. Err.)
Hypothetical Roll Rate	
Distance from F(β_1)	.818 (.023)*
Distance from No Roll Zone(β_2)	.040 (.019)*
Constant (α)	.028 (.004)*
Observed Roll Rate	
Distance from F(β_1)	-.339 (.041)*
Distance from No Roll Zone(β_2)	.830 (.034)*
Constant (α)	.063 (.007)*

Test:

$$\beta_{1_{Hypothetical}} = \beta_{1_{Observed}}$$
$$\chi^2_1 = 502.77$$
$$p\text{-value} < 0.0001$$
$$\beta_{2_{Hypothetical}} = \beta_{2_{Observed}}$$
$$\chi^2_1 = 328.88$$
$$p\text{-value} < 0.0001$$

Table 8: SUREG - Observed vs. Hypothetical Roll Rates, 105th Congress

Equation	N	Parms.	RMSE	R^2	χ^2	p
Hypothetical	441	2	0.050	0.92	5085.6	<0.0001
Observed	441	2	0.071	0.81	1888.6	<0.0001

	Coef. (Std. Err.)
Hypothetical Roll Rate	
Distance from F(β_1)	.782 (.029)*
Distance from No Roll Zone(β_2)	.010 (.021)
Constant (α)	.056 (.006)*
Observed Roll Rate	
Distance from F(β_1)	-.074 (.041)
Distance from No Roll Zone(β_2)	.556 (.030)*
Constant (α)	.071 (.009)*

Test:

$$\beta_{1_{Hypothetical}} = \beta_{1_{Observed}}$$
$$\chi^2_1 = 268.26$$
$$p\text{-value} < 0.0001$$
$$\beta_{2_{Hypothetical}} = \beta_{2_{Observed}}$$
$$\chi^2_1 = 199.65$$
$$p\text{-value} < 0.0001$$

Appendix: The potential for partisan roll rates under a nonpartisan, unmanipulated agenda due to a finite policy space

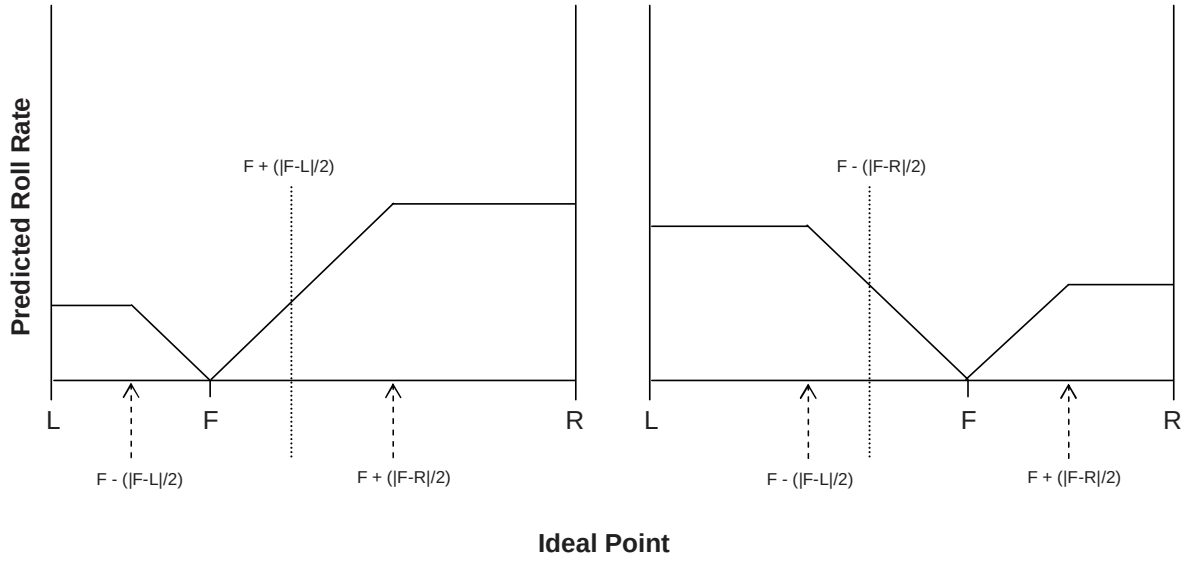

Figure 9: Roll rates in a finite policy space

A party (or coalition) may appear to be the victim of a manipulated agenda if its median member (mdn) faces one of the following conditions:[14]

$$mdn \in \left[F + \frac{\left|F-L\right|}{2}, R\right] \text{ if } \left|F-L\right| < \left|F-R\right|$$

or

$$mdn \in \left[L, F - \frac{\left|F-R\right|}{2}\right] \text{ if } \left|F-R\right| < \left|F-L\right|.$$

Alternatively, equidistant members are predicted to have equal roll rates only in the intervals

$$\left[F - \frac{\left|F-L\right|}{2}, F + \frac{\left|F-L\right|}{2}\right] \text{ if } \left|F-L\right| < \left|F-R\right|$$

or

$$\left[F - \frac{\left|F-R\right|}{2}, F + \frac{\left|F-R\right|}{2}\right] \text{ if } \left|F-R\right| < \left|F-L\right|.$$

[14]Where F is the floor median and where L and R are the leftward and rightward terminal points of the policy dimension.