

# Bill Sponsorship in Congress: The Moderating Effect of Agenda Positions on Legislative Proposals

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*Positions of influence over the legislative agenda provide greater opportunities for shaping policy outcomes. Do legislators take advantage of this? If they do, when the median is pivotal and legislators' goals reflect both position taking and policy seeking, greater influence over the agenda leads legislators to moderate their bills relative to legislators with lower agenda priority. Analysis of a formal game theoretic model provides rigorous justification for the proposition, and empirical analysis of House and Senate bills from the 101st to 108th Congresses using cosponsorship data to measure the ideological locations of bills largely supports it. Committee leadership and majority party status have moderating effects while the effect of committee membership is slight. The analysis also tentatively supports the pivotalness of the median over other alternatives. Contrary to the view that bill sponsorship is mere position taking, legislative organization significantly shapes early-stage legislative behavior. Specifically, greater legislative influence implies greater responsiveness to the median legislator.*

What explains the content of bills that legislators introduce? Bill sponsorship is an important legislative activity because a policy must be proposed before it is legislatively enacted. Whether or not bills help to accomplish legislators' goals depends on the future decisions of others, either inside or outside the legislature. Decisions concerning bill content are therefore strategic choices. What influences a legislator's strategic choice of bill content? More specifically, whose reactions and which goals are decisive? And how does legislative organization shape expectations about the later stages of collective decision making, thereby affecting the early stages of individual decision making?

Bill sponsorship might be driven by expectations of voter reactions in the electoral arena and therefore reflect position taking behavior (Mayhew 1974). Alternatively, a legislator might be concerned with the reactions of fellow legislators and seek to achieve the bill's passage, perhaps motivated by intra-institutional rewards such as better committee assignments (Wawro 2000) or simply because they are policy motivated. More realistically, legislators might pursue multiple goals (Fenno 1973; Hall 1996). Simultaneously pursuing both electoral and legislative rewards, however,

might conflict (Denzau, Riker, and Shepsle 1985; Rothenberg and Sanders 2000a, 2000b).<sup>1</sup> The tension implies that the strategic calculation involves effectively deciding which goal to emphasize over the other.

Fundamental to resolving the conflict between the desire to be a "show horse" or a "work horse" (Matthews 1960) is positive agenda power. I develop a theory that predicts if a legislator pursues a mix of both policy seeking and position taking then the legislator's *agenda position*—the institutional positions a legislator holds that affect, ex ante, the chances of a bill being considered—is a key factor in this decision. Game theoretic analysis makes the argument more precise by showing that for many values of the status quo the two goals either do not conflict or that position taking dominates and that there is also a critical region of status quo values for which a legislator's agenda position is decisive. The empirical implications of the model are that legislators with higher agenda positions will moderate their proposals to a greater extent than legislators with low agenda positions, and that legislators with low agenda positions will tend to propose bills that reflect position taking.

<sup>1</sup>Snyder and Ting (2003) also find evidence of last period changes in legislative behavior conditioned on district ideology, which can also be interpreted as a tension between electioneering and policymaking.

This paper addresses an aspect of early-stage legislative decision making that has largely been ignored by previous work: how legislators strategically choose the content of the bills they introduce. This is surprising because even though bill sponsorship is a much costlier activity than cosponsorship, the latter has received a fair amount of attention (Campbell 1982; Krehbiel 1995; Kessler and Krehbiel 1996; Wilson and Young 1997). Related research has also examined how much effort or participation is devoted to legislative entrepreneurship (Bratton and Haynie 1999; Matthews 1960; Schiller 1995; Sinclair 1989; Walker 1977; Wawro 2000) but not how that effort is spent on shaping proposals. Similarly, previous research studies how bill content or sponsor characteristics affect legislative success (Ainsworth and Hanson 1996; Anderson, Box-Steffensmeier, and Sinclair-Chapman 2003; Frantzich 1979; Krutz 2005; Moore and Thomas 1990) but does not take the next step to examine how bill content was chosen in the first place.

The most closely related study is by Poole and Smith (1994) on Senate roll-call voting between 1979 and 1981. They examine the spatial locations of winning and losing motions and find that winning motions tend to be centrally located while losing motions correlate highly with sponsors' ideal points. This paper is similar in its concern for understanding the locations of proposals but differs in important respects, including its theoretical analysis, data, and methods. Substantively, the appearance of a motion on the roll-call agenda differs in that it is highly constrained by the legislative process (e.g., the committee system, special rules in the House, and unanimous consent agreements in the Senate) and also guarantees its consideration. The act of introducing a bill, in contrast, is much less constrained by the institution, and there is much more uncertainty in terms of whether it will even be considered. Analyzing bills provides an opportunity to examine strategic behavior when consequences are further "downstream" and to better assess the motivations for proposal behavior.

This paper also makes a methodological contribution. I present a simple method for estimating bill locations from cosponsorship data. The method is novel and relies on key differences between cosponsoring and roll-call voting to overcome problems that traditional roll-call analysis methods have with identifying and estimating the locations of alternatives.

Finally, the data and analysis speak to larger debates about legislative organization. In particular, who controls the agenda and who is pivotal? Is agenda setting driven by parties, committees, committee

leaders, or the floor? Is the median or some other legislator pivotal? The theoretical analysis relies only on the assumptions that there are differences in agenda positions and that there is a pivotal legislator without specifying which positions actually matter or which legislator is actually pivotal.<sup>2</sup> It is therefore left for the data to resolve whether the committee hierarchy, party organization, or both are determinants of agenda influence and bill consideration.

Analyzing data from both the House and Senate from the 101st through 108th Congresses, the results provide relatively good, but nevertheless tentative, support for the theory's predictions that legislators with higher agenda positions moderate their proposals to a greater extent than legislators with low agenda positions, and that legislators with low agenda positions tend to propose bills that reflect position taking. In terms of which agenda positions matter, I find that both majority party status and committee leadership sometimes lead to proposal moderation while committee membership only has a small effect. The findings are less conclusive about the pivotalness of the median legislator, but suggest that the median is more likely to be pivotal than other alternatives.

## Goals, Agenda Positions, and Proposal Behavior

I begin the theoretical development of my argument by informally considering the implications of two distinct assumptions about legislators' motivations and then introducing the concept of agenda positions and its role when legislators have multiple goals. The informal logic and intuition is then sharpened by formally analyzing a game theoretic model of legislative proposals.

Suppose that there is a one-dimensional policy space and that the act of voting is distinct from the act of proposing. At one extreme, suppose that legislators are purely motivated by the electoral connection and that, according to Mayhew, "the electoral payment is for positions rather than effects" (1974, 132). If constituents view bills as signals of a legislator's position and the rewards are greatest for positions that are closest to their own, then a legislator will maximize his electoral payments by proposing bills that reflect the preferences of his or her constituency's

<sup>2</sup>Chiou and Rothenberg (2003) confront this issue by analyzing how different assumptions about agenda setting affect legislative gridlock. They find that neither the pure preference or party agenda setting theories perform as well as a model of party unity.

median voter. The pure position-taking version of an electoral connection theory predicts that the positions chosen for bills will perfectly correspond to the positions chosen in other classes of legislative behavior in which the position-taking motivation dominates (e.g., roll-call voting). In this case, strategic behavior is externally oriented because it anticipates voters' reactions.

At the other extreme, suppose that when legislators choose the content of the bills they introduce, that they care about winning the bill's passage to the exclusion of all other goals.<sup>3</sup> For instance, they may care about winning because it leads to advancement within the legislature. If the voting stage still reflects position-taking behavior (because it is much more visible to constituents), then under an open rule procedure where agenda control is not restricted, a bill can only win final approval by a majority vote if it is preferred to not only the status quo but to all other competing bills. In a one-dimensional policy space, this pure winning-motivated theory predicts that all legislators will propose bills located at the median legislator's most preferred position. Strategic behavior in this case is not only oriented toward actors internal to the legislature (i.e., other legislators), but it also involves completely compromising one's own ideological vision of the public good in order to win.

Reality almost surely lies somewhere in between these two extremes. Members may have a combination of goals that includes both reelection and policy seeking (Fenno 1973), but those goals may sometimes conflict, as is the case with killer amendments (Denzau, Riker, and Shepsle 1985; Jenkins and Munger 2003). Under what conditions does this tension between goals exist, and when it does, how should we expect it to be resolved?

The legislative process clearly involves much more than proposing bills and voting on them. In order to reach the final passage stage, bills must be put on committee agendas, approved by committees, and then put on the floor agenda for consideration. Hence, a necessary condition for a bill's success (at any stage) is that it must first be *considered*. A significant factor that affects a bill's consideration is whether its sponsor holds institutional positions that provide influence over the legislative process (Anderson, Box-Steffensmeier, and Sinclair-Chapman 2003; Evans

1991; Hall 1996). A legislator's position within the hierarchy can be referred to as an *agenda position*, which should reflect a legislator's ex ante probability of obtaining a bill's consideration.<sup>4</sup> Intuition suggests that legislators with low agenda positions are more likely to engage in position taking because their proposals are not likely to affect policy outcomes while legislators with high agenda positions are more likely to engage in legislative behavior aimed at producing desirable policy outcomes.

## A Formal Model of Legislative Proposals

To make this argument more precise and to verify rigorously whether this intuition is correct, consider a simple game theoretic model involving two legislators:  $L$  (who proposes a bill) and  $P$  (whose vote is *pivotal* in deciding the final policy). The sequence of interaction between the two players (depicted in Figure 1) is as follows. First,  $L$  chooses the location of a bill,  $y$ , from a one-dimensional policy space. With probability  $a \in [0, 1]$ , the bill is placed on the legislative agenda and legislator  $P$  chooses either the bill or the status quo,  $q$ , as the policy outcome. Let the policy outcome be denoted by  $x \in \{y, q\}$ . With probability  $1 - a$ , the game ends without  $P$  even considering  $y$ , so the policy outcome in that case is  $x = q$ . The model intentionally simplifies the legislative process in order to capture the essential features of uncertainty in agenda setting and variation in agenda priority (through the parameter  $a$ ).

Suppose that both legislators have single-peaked and symmetric preferences defined over the policy alternatives, with ideal points  $\theta_L$  and  $\theta_P$ , respectively. For the sake of exposition, suppose  $\theta_L > \theta_P$ . Given that position taking and outcome consequences are equivalent in legislator  $P$ 's voting decision,  $P$ 's utility function can be described by

$$U_P(x) = -(x - \theta_P)^2.$$

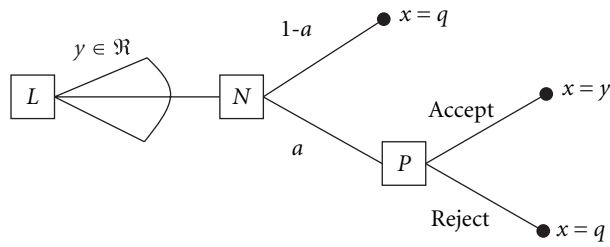
Legislator  $L$ 's von Neumann-Morgenstern preferences over the terminal histories of the game depend on a weighted combination of position taking (the location of the proposal  $y$ ) and policy consequences (the final outcome  $x$ ) and are represented by the Bernoulli utility function

$$U_L(x, y) = -(x - \theta_L)^2 - w(y - \theta_L)^2,$$

<sup>3</sup>This does not mean that winning cannot have beneficial electoral consequences. Indeed, campaigning on successful legislative accomplishments is very often advantageous (e.g., Fenno 1989). The purpose of making the assumption is simply to examine legislative decision making when preferences are not explicitly based on electoral consequences.

<sup>4</sup>I hesitate to use the term "agenda power" or "agenda influence" given the inherent theoretical ambiguities in concepts such as power and influence, though avoiding their use altogether sometimes makes for very awkward prose.

**FIGURE 1 Sequence of Actions in the Bill Proposal Game**



Notes:  $L$  is the legislator proposing a bill  $y$ ,  $N$  is Nature, and  $P$  is the pivotal legislator;  $a$  denotes the probability Nature allows the bill to be considered;  $x$  denotes the policy outcome and  $q$  denotes the status quo.

where the weight for policy outcomes is normalized to 1 and  $w > 0$  is the weight  $L$  places on position taking.<sup>5</sup>

The structure of the game follows the seminal model of Romer and Rosenthal (1978) in that it involves an agenda setter and a closed rule.<sup>6</sup> The model here differs in two important respects. First, the introduction of randomness and uncertainty signifies that control or influence of the legislative agenda is at best an imperfect and imprecise process.<sup>7</sup> Moreover, this feature of the model allows agenda influence to take on a richer set of possibilities than just assuming with certainty that there will be an open rule, closed rule, or gatekeeping. Second, legislators'

<sup>5</sup>The basic result also holds if policy seeking is replaced by a preference for winning, as in the informal theory. See the online appendix at <http://journalofpolitics.org/articles.html> for details.

<sup>6</sup>Note that the closed rule is necessary for agenda positions to meaningfully discriminate between legislators. In contrast, under an open rule, every legislator has completely equal access to the agenda and is therefore identical. Given that open rules are much more likely than closed rules in the House (Bach and Smith 1988; Krehbiel 1997) and not even used in the Senate, it would seem that the validity of the assumption is questionable and may ultimately undermine the theoretical claims. But such an interpretation of the model is overly restrictive. The model only requires that there is *some* positive probability of a closed rule being granted. Even if this probability is low, and even if we allow for the additional possibility of an open rule, the results still hold. This is proved in the online appendix. Furthermore, time constraints may preclude the consideration of amendments, having the *effect* of a closed rule on the collective choice outcome even when amendments are not formally restricted (Patty and Penn 2004; Schickler and Wawro 2004; Woon 2004a).

<sup>7</sup>The model also differs from Banks' (1990, 1993) extensions of Romer and Rosenthal's model. My model involves exogenous uncertainty about the future rather than imperfect (asymmetric) information.

preferences explicitly incorporate both position-taking and policy-seeking elements.<sup>8</sup> While commonly pointed out in empirical work (Fenno 1973; Hall 1996; Maltzman and Smith 1994), they are not often considered in theoretical models.<sup>9</sup>

The following proposition characterizes the behavior of interest: the equilibrium bill  $y^*$  proposed by  $L$  in a subgame perfect Nash equilibrium.<sup>10</sup>

**Proposition 1** *If  $\theta_L > \theta_P$ , then in any subgame perfect Nash equilibrium:*

(a) *The equilibrium bill proposal is  $y^* = 2\theta_P - q$  if  $q \in (2\theta_P - \theta_L, q^*)$ , where*

$$q^* = 2\theta_P - \theta_L + \frac{2(\theta_L - \theta_P)\sqrt{a(a+w)} - a}{w} < \theta_P$$

*Otherwise (as long as  $q \neq q^*$ ),  $y^* = \theta_L$ .*

(b) *Equivalently,  $y^* = 2\theta_P - q$  if  $q \in (2\theta_P - \theta_L, \theta_P)$  and  $a > a^*$ , where*

$$a^* = \frac{w(2\theta_P - q - \theta_L)^2}{(q - \theta_L)^2 - (2\theta_P - q - \theta_L)^2}$$

*Otherwise (as long as  $a \neq a^*$ ),  $y^* = \theta_L$ .*

Part (a) states that for a given agenda position, there is a *proposal moderation interval*,  $(2\theta_P - \theta_L, q^*)$ , such that moderation occurs when the status quo point is within this interval. Otherwise, a legislator's optimal proposal is his or her ideal point. Part (b) is an equivalent statement of the conditions for moderation that emphasizes the role of agenda positions. Specifically, it says that when the status quo point is such that a Romer-Rosenthal agenda setter would be constrained by the pivotal voter, then only legislators with sufficiently high agenda positions will moderate their proposals. The shaded region in Figure 2 illustrates the set of agenda positions and status quo points for which legislators moderate their proposals.

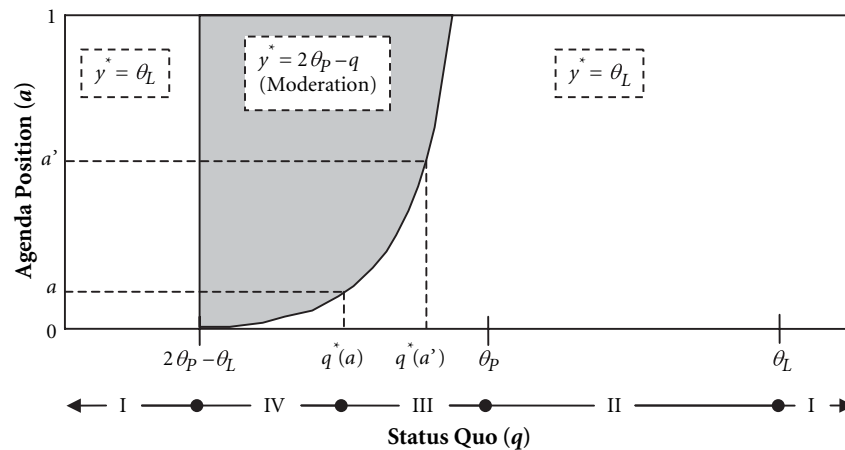
The intuition behind  $L$ 's equilibrium behavior can be explained by partitioning possible values of the status quo into four cases (corresponding to regions I–IV in the lower part of Figure 2). In the first case (I), there is no conflict between position

<sup>8</sup>This is similar to Matthews' (1960) "show horse" and "work horse" dichotomy.

<sup>9</sup>An exception is Groseclose and Milyo (2001).

<sup>10</sup>Formal proofs of the propositions are given in the online appendix. Below, I explain the intuition behind the results. In the knife-edge cases ( $q = q^*$  and  $a = a^*$ ), which are excluded for clarity,  $L$  is indifferent between the two proposals specified.

FIGURE 2 Regions of Equilibrium Proposal Behavior



Notes: Roman numerals refer to regions of status quo for agenda position equal to  $a$ . In I, there is policy change and position-taking and policy-seeking are consistent. In II, no policy change is possible and position-taking dominates. In III, the position-taking cost outweighs the benefit of policy change, while in IV, the policy change benefit outweighs the position-taking cost.

taking and policy seeking. If  $q$  is sufficiently extreme ( $q \leq 2\theta_P - \theta_L$  or  $q \geq \theta_L$ ) then the optimal position-taking bill  $y = \theta_L$  is also optimal in terms of its expected policy consequences (moving policy to  $\theta_L$  with positive probability), irrespective of  $L$ 's agenda position  $a$ . In the second case (II), when  $q$  is in the gridlock interval  $q \in [\theta_P, \theta_L]$ , position taking dominates (and therefore  $y^* = \theta_L$ ) because there is no bill that  $P$  will approve that moves policy towards  $\theta_L$ .<sup>11</sup> Again, this is true irrespective of the agenda position  $a$ .

In the remaining cases (III and IV), when  $q \in (2\theta_P - \theta_L, \theta_P)$ , the two motivations conflict with each other. These values of the status quo are those for which the maximum extent of policy change is constrained by the preferences and equilibrium strategy of  $P$ . In other words,  $L$  cannot obtain the policy  $\theta_L$  and must instead make some concessions to  $P$  in order for  $y$  to pass if considered. From  $L$ 's perspective, there is a trade-off between policy seeking and position taking such that the probability of the bill's consideration,  $a$ , becomes the decisive factor.

To see this, note that the optimal position-taking bill  $y = \theta_L$  guarantees with certainty that there will be no policy change. In contrast, the best possible policy-seeking bill  $y = 2\theta_P - q$  ensures that there is a positive probability of a beneficial policy change for  $L$  but at the cost of losing some of its position taking

attractiveness. The decision for  $L$  therefore comes down to weighing the expected benefit of policy change against its position-taking cost. If  $q$  is too close to  $P$ 's ideal point (III), as it is in the case where  $q \in (q^*, \theta_P)$ , then the position-taking cost of proposing a potentially winning bill outweighs the expected benefits of policy change regardless of the legislator's agenda position.<sup>12</sup>

In the final case (IV), the status quo points are far enough away from the pivotal legislator's ideal point that the extent of potential policy change is substantial enough that the expected policy benefit of a proposal outweighs its position-taking cost. Since expected policy benefits depend on both the extent of potential policy change and the likelihood of consideration, an equivalent way to think about proposal moderation emphasizing the latter (expressed in part (b) of Proposition 1) is that for any given status quo  $q \in (2\theta_P - \theta_L, \theta_P)$ , there is a cutoff value  $a^*$  such that legislators with agenda positions above the cutoff will opt for policy seeking while legislators with agenda positions lower than the cutoff will opt for position taking.

The formal analysis therefore clarifies the conditions under which position taking and policy seeking are at odds (the status quo is in region III or IV) and that conflict between goals is a necessary

<sup>11</sup>In contrast, when there is no position-taking preference ( $w = 0$ ), then there is an equilibrium for any losing proposal.

<sup>12</sup>See the online appendix for figures that illustrate expected utility as a function of  $y$ .

condition for agenda positions to shape strategic proposal behavior. However, one further logical step must be taken in order to obtain a testable implication. The predicted location of a bill depends not only on a legislator's agenda position but also on the location of the status quo, so it would seem to be necessary in any empirical test of the effect of agenda positions to control for the location of the status quo. Unfortunately, direct measurement of status quo points poses formidable methodological obstacles that existing research has not yet fully overcome (Clinton 2007; Krehbiel, Meirowitz, and Woon 2005).<sup>13</sup>

One solution is to assume that the status quo is a random variable (Cox and McCubbins 2005; Krehbiel 2006). This assumption is natural since status quo points are unobservable and researchers therefore face uncertainty about them. Armed with this minimal assumption, Proposition 2 describes *expected* proposal behavior as a function of agenda positions for *any* distribution of status quo points by placing bounds on what we should observe.<sup>14</sup>

**Proposition 2** *If  $\theta_L > \theta_P$ ,  $a' > a > 0$ , and  $q$  is a random variable with infinite support and probability density function  $f(q)$ , then*

$$\theta_P < E[y^* | a'] < E[y^* | a] < \theta_L$$

Note that since Proposition 2 is a statement about expected proposals, it has direct implications for coefficients in a regression equation. It can be restated as the following hypotheses: *all else equal*, (1) *legislators with higher agenda positions will moderate their proposals to a greater extent than legislators with lower agenda positions, and* (2) *the proposals of low agenda position legislators will mostly, but not solely, reflect position taking.*

The moderation of proposals by committee leaders is supported by case studies of leadership behavior—specifically, Asbell's (1978) account of Ed Muskie's (D-ME) 1976 attempt to amend the Clean Air Act and Fenno's (1989) study of Dan Quayle's (R-IN) work obtaining the passage of the Job Partnership Training Act in 1982. Both were subcommittee chairmen with jurisdiction over their bills' respective policy areas. Neither was an ideological moderate—Muskie was more liberal than the median

Democrat and Quayle was more conservative than the median Republican<sup>15</sup>—yet they both pursued strategies of policy moderation and compromise.<sup>16</sup>

## Data and Measurement

To test both the assumptions and the predictions of the model, I construct a data set of all House and Senate bills (those designated "H.R." or "S.") from the 101st through 108th Congresses.<sup>17</sup> Testing the proposal moderation hypothesis requires data for three key variables: ideal points, agenda positions, and bill locations. To test the assumption that higher agenda positions correspond to higher chances of a bill's consideration, I also collect data on whether or not the bill was reported from committee in the chamber in which it was introduced.

For ideal points, I use Poole and Rosenthal's DW-NOMINATE scores (McCarty, Poole, and Rosenthal 2006; Poole and Rosenthal 1997), which are based on all roll-call votes and are good measures of baseline position-taking behavior because they are among the most visible decisions that legislators make.<sup>18</sup>

Regarding agenda positions, there is considerable disagreement between legislative scholars over the extent to which the agenda is controlled by parties (Cox and McCubbins 1993, 2005; Patty 2007), committees (Shepsle and Weingast 1987; Weingast and Marshall 1988), or median and pivotal legislators (Krehbiel 1991, 1998; Schickler and Rich 1997).

<sup>15</sup>Muskie's first-dimension DW-NOMINATE score in the 94th Senate is  $-0.454$ , while the Democratic median is  $-0.36$  and the chamber median is  $-0.189$ . Quayle's score in the 97th Senate is  $0.476$ , while the Republican median is  $0.281$  and the chamber median is  $-0.295$ .

<sup>16</sup>Furthermore, Quayle's experience suggests against a potential endogeneity problem. That is, rather than agenda positions driving proposal behavior, it could be that legislators who pursue policy seeking are rewarded with higher agenda positions (e.g., Wawro 2000). Given Quayle's lackluster legislative performance in the House, however, and the fact that the Job Partnership Training Act passed in only his second year in the Senate, endogeneity seems unlikely. Nevertheless, it remains a possibility.

<sup>17</sup>All bill-specific data (including sponsorship, cosponsorship, and consideration) were obtained from the Library of Congress' THOMAS database, <http://thomas.loc.gov>. There are a total of 43,587 House bills and 23,445 Senate bills in the data set, but as noted later, only a subset are used in the analysis because cosponsorship is necessary to estimate a bill's location.

<sup>18</sup>The data were obtained from Keith Poole's website: <http://www.voteview.org>.

<sup>13</sup>These problems are also discussed below in the context of measuring bill locations.

<sup>14</sup>Unlike Cox and McCubbins (2005) and Krehbiel (2006), this result is robust to the shape of the distribution. It only requires that there is a positive probability that status quo points are in the proposal moderation interval.

Rather than assuming a priori that any one theory of legislative politics determines agenda positions, I leave this for the data to decide and code three agenda position variables: committee membership, committee leadership, and majority party status.<sup>19</sup> The committee membership variable indicates whether the legislator sat on any of the committees to which the bill was referred. The committee leadership variable indicates whether the bill's sponsor held any kind of leadership position (committee chair, committee ranking member, subcommittee chair, subcommittee ranking member) on any of the committees of referral.<sup>20</sup> Both of these variables are coded to allow for multiple referrals. Since a committee leader is, by definition, also a member of a committee, the three agenda position variables can be combined to account for six different agenda positions.

### Using Cosponsorship to Estimate Bill Locations

To estimate bill locations, I rely on the observation that cosponsoring a bill, like roll-call voting, is an act of expression that signifies the degree to which a bill matches a legislator's preferences (Koger 2003; Krehbiel 1995; Goodliffe, Rothenberg, and Sanders 2005).<sup>21</sup> Using cosponsorship data to estimate bill locations meets two important requirements. First, given that the hypotheses involve the relationship between sponsors and proposal locations, bills must be measured independently of sponsors' locations. Second, since the hypothesis concerns initial proposals, bill locations must also be measured as early in the legislative process as possible—preferably before it is modified by the legislative process, but certainly before it may be amended on the floor.<sup>22</sup>

<sup>19</sup>The committee data for the 101st and 102nd Congresses are from Nelson (2005) and for the 103rd through 108th Congresses from Stewart and Woon (2005), obtained from Charles Stewart's website, [http://web.mit.edu/17.251/www/data\\_page.html](http://web.mit.edu/17.251/www/data_page.html).

<sup>20</sup>Subcommittee leadership data were obtained from various editions of the *Congressional Directory*.

<sup>21</sup>See Kessler and Krehbiel (1996) and Wilson and Young (1997) for somewhat different perspectives on cosponsorship.

<sup>22</sup>For example, House Rule XII.7(b)(1) states: "Such a request [for cosponsorship] may be submitted to the Speaker at any time until the last committee authorized to consider and report the bill or resolution reports it to the House or is discharged from its consideration." Although late cosponsors are rare, they are sometimes permitted by unanimous consent, which may affect the bill estimates. Additional analysis shows that the effects of late cosponsors are negligible.

Although similar, cosponsorship differs from roll-call voting in at least two significant ways. First, standard models (Poole and Rosenthal 1997) assume that the legislator makes a choice between *two alternatives*, the motion and the status quo, which implies the existence of a cutpoint that perfectly divides supporters and opponents of a motion. This is problematic because roll call scaling methods are less reliable for estimating the locations of alternatives than they are for estimating the cutpoints and the legislator ideal points (Clinton and Meirowitz 2001, 2004; Krehbiel, Meirowitz, and Woon 2005; Poole and Rosenthal 1997, 234–35).

To see this, consider the hypothetical situation depicted in part (a) of Figure 3. If legislators compare the bill  $B_1$  and status quo  $Q_1$ , then the cutpoint  $C = (B_1 + Q_1)/2$  cleanly divides cosponsors from non-cosponsors. However, there are an infinite number of bill and status quo pairs that produce the same cutpoint, such as  $B_2$  and  $Q_2$ . If the location of the status quo is known to be  $Q_1$ , then we could easily infer that  $B_1$  is the bill location, but the status quo itself is unobserved and must be estimated (hence, the problem).

Another problem is that for many legislators and for many bills, the decision of whether or not to cosponsor is likely not a decision at all. Because of the sheer number of bills introduced (on average, around 3,000 per Congress in the Senate and 5,500 per Congress in the House), it is reasonable to expect that every legislator is simply not able to pay sufficient attention to every bill to make an explicit comparison between the bill and the status quo. Instead, the default decision is not to cosponsor because the bill was never considered in the first place. This is consistent with the fact that the modal number of cosponsors is zero, and the mean number is rather low (4.8 in the Senate and 16.5 in the House). The alternative cosponsorship model described next addresses both of these problems.

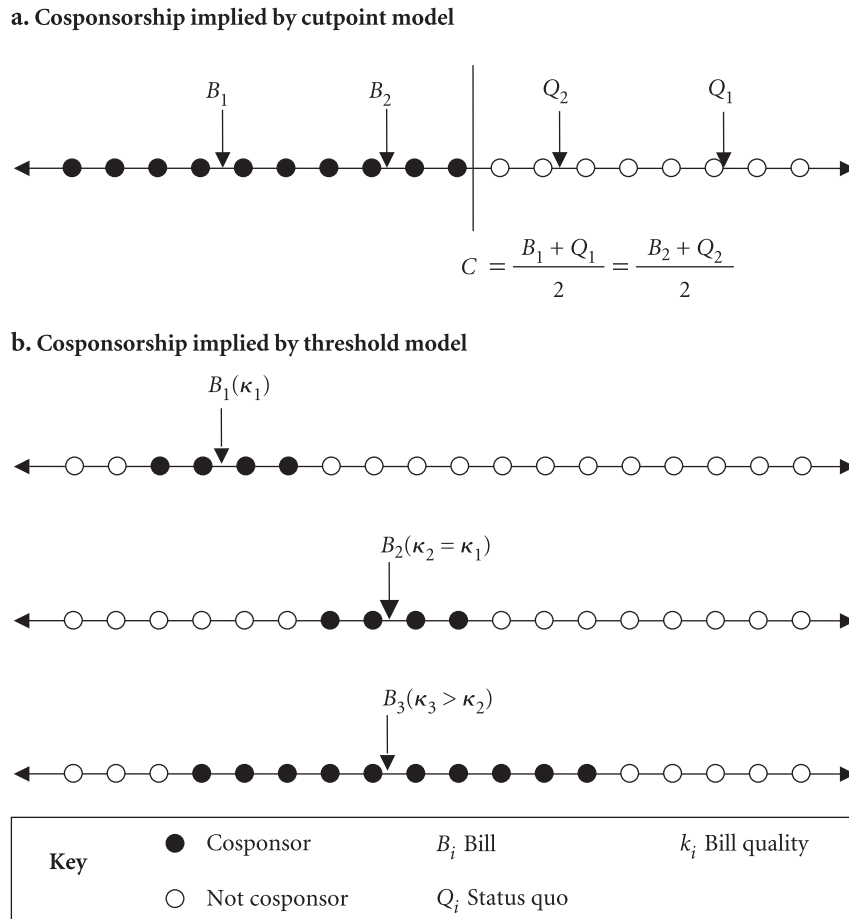
### A Model of Cosponsorship

Suppose that the decision to cosponsor is described by a random utility model. Specifically, let  $U_i$  be a single-peaked and symmetric utility function for legislator  $i$ , and suppose that each utility function only differs in the parameter  $X_i$ , which is legislator  $i$ 's ideal point. Legislator  $i$  will cosponsor bill  $j$  located at  $y_j$  if and only if

$$U_i(X_i, y_j) + \kappa_j + \varepsilon_{ij} > \tau$$

where  $\kappa_j$  is another bill-specific parameter (such as "quality"),  $\varepsilon_{ij}$  is a normally distributed error term,

FIGURE 3 Cosponsorship Patterns Implied by Alternative Models



and  $\tau$  is a constant threshold value that must be reached for cosponsorship to occur.<sup>23</sup>

Part (b) of Figure 3 depicts patterns of cosponsorship consistent with this single-alternative threshold model. Consider, for example, bills located at  $B_1$  and  $B_2$  as in part (a). Suppose also that  $\kappa_1 = \kappa_2$ . The threshold cosponsorship model (without the error term) implies that legislators with ideal points within a given distance (where the distance is determined by  $\kappa_j$  and  $\tau$ ) will cosponsor while legislators with ideal points farther away will not cosponsor the bill. If  $\kappa_j$  is higher, then the range of ideal points for cosponsoring legislators will increase. In Figure 3 this is shown by the bill  $B_3$  located at the same place as  $B_2$  but where  $\kappa_3 < \kappa_2$ .

The threshold cosponsorship model provides a rigorous justification for measuring a bill's location

using the average cosponsor's ideal point but *only* in the case where ideal points are evenly distributed. In general, however, the average will depend on the distribution. Congressional ideal points are typically bimodal (with a mode for each party), so an alternative estimator is needed.<sup>24</sup>

Estimating the *rate*, or probability, of cosponsorship as a function of ideal points overcomes this last problem. Since  $U_i$  is single-peaked, the probability that  $i$  cosponsors the bill  $j$  is maximized when  $y_j = X_i$ . This implies that if the ideal points of legislators are known, then the unobserved bill location can be estimated by finding the ideal point that maximizes the probability of cosponsorship.

A simple estimation procedure exploits this observation. For each bill, estimate a separate probit

<sup>23</sup>The actual value of  $\tau$  is immaterial and does not play any real role in the analysis or estimation of bill locations because it affects the overall average rate of cosponsorship.

<sup>24</sup>A related problem arises due to the bounds on the observed ideal point distribution. Consider, for example, a bill at the right end-point of the ideal point distribution. In this case, increasing  $\kappa_j$  would increase the number of cosponsors to the left of the bill but not to the right because the latter cosponsors do not exist, and the bill estimate would be artificially moderate.

model where cosponsorship is a quadratic function of ideal points,

$$\Pr(\text{Cosponsor}_i) = \Phi(\gamma_2 X_i^2 + \gamma_1 X_i + \gamma_0).$$

The implied bill location is the maximum of the estimated quadratic function, which is

$$\hat{y} = -\frac{\hat{\gamma}_1}{2\hat{\gamma}_2}$$

provided that  $\hat{\gamma}_2 < 0$  (ensuring that the function is concave and that  $\hat{y}$  is a maximum rather than a minimum). Furthermore, since  $\hat{y}$  is a function of maximum likelihood estimates, its variance can also be estimated.

Using this procedure, estimated bill locations are obtained for 18,009 House bills and 9,278 Senate bills. For some bills, the variance estimate is too large to be useful in the subsequent analysis. I therefore only include bills where the standard error of the estimated location is less than 2, which is approximately the distance between the two most extreme ideal points. This is a relatively conservative criterion because it implies that the widest 95% confidence interval for a bill estimate is roughly twice the width of the range of ideal points, and it leaves 15,160 House bills and 7,650 Senate bills available for the analysis.<sup>25</sup>

### Empirical Analysis of Bill Consideration

The game theoretic model makes two assumptions that may themselves be subject to empirical scrutiny. First, it assumes that there is a pivotal legislator. In the informal theory, I argued that it should be the chamber median.<sup>26</sup> Second, that all else equal (including bill positions), legislators with higher agenda positions are more likely to have their bills considered.

To systematically test these assumptions, I estimate a probit model where the dependent variable is whether or not a bill was reported from committee, which is an imperfect but reasonable indicator of

<sup>25</sup>While the cutoff value for the maximum permissible bill standard error is arbitrary, changing it does not affect the results, especially because weighted least squares is used in the main test of the hypotheses.

<sup>26</sup>There are many other possible candidates for the pivotal legislator, such as the veto and filibuster pivots (Krehbiel 1998), the majority party median (Cox and McCubbins 2005), or even possibly committee medians or chairs. The limited aim here is only to establish whether the median as pivotal is a reasonable guess, not to definitively establish which legislators are pivotal. The possibility of alternative pivots is considered later.

TABLE 1 Effects of Bill and Sponsor Distance to Median, Cosponsors, and Agenda Positions on the Probability of Bill Consideration

	House	Senate
Bill – Median	–0.643** (0.056)	–0.554** (0.083)
Sponsor – Median	0.013 (0.091)	0.063 (0.121)
Number of Cosponsors	0.003** (0.0001)	0.013** (0.002)
Committee	0.076* (0.039)	0.419** (0.056)
Committee Leader	0.829** (0.038)	0.324** (0.053)
Majority	0.523** (0.045)	0.360** (0.046)
Constant	–1.700** (0.060)	–1.582** (0.072)
Log Likelihood	–4876.0	–3069.3
Pseudo R squared	0.151	0.098
N	15,160	7,650

Notes: \*p < .05, \*\*p < .01. Standard errors in parentheses. Coefficients are maximum likelihood estimates of a probit model. Dependent variable is whether or not bill was reported from committee.

whether a bill was considered. The independent variables are the distance between the bill and chamber median, the distance between the sponsor and the chamber median, the number of cosponsors, and the three agenda position indicators (committee membership, committee leadership, and majority party). If the median is pivotal, then the probability of the bill being reported should decrease as the distance between the bill and the median increases.<sup>27</sup> If the assumption about agenda positions is correct, then at least one of the agenda position variables should be positive. The number of cosponsors controls for bill quality, corresponding to  $\kappa$  in the cosponsorship model. The distance between the sponsor and the chamber median is a control variable that should not have any effect if only bill attributes and sponsor agenda position matter.

Table 1 presents the estimates of the probit model of bill consideration obtained by maximum likelihood for each chamber. The results clearly support the reasonableness of the assumptions. The likelihood

<sup>27</sup>The presence of measurement error in the bill estimates may lead to attenuation of the coefficient, which would bias the analysis *against* finding an effect. The direction of bias, however, depends on the assumption that the measurement error is mean zero and uncorrelated with the dependent variable, which may or may not be true.

of bill consideration is decreasing in the bill's distance from the median (despite the possibility of attenuation bias) but not in the sponsor's distance from the median. Interestingly, *all* agenda position variables are positive and statistically significant across both chambers. In the House, committee leadership increases the probability the most, while committee membership has a relatively small effect. In the Senate, all three agenda position effects are roughly the same in magnitude.

## Empirical Analysis of Bill Locations

The following regression model allows the relationship between bill locations and sponsor preferences to vary based on the sponsor's agenda position:

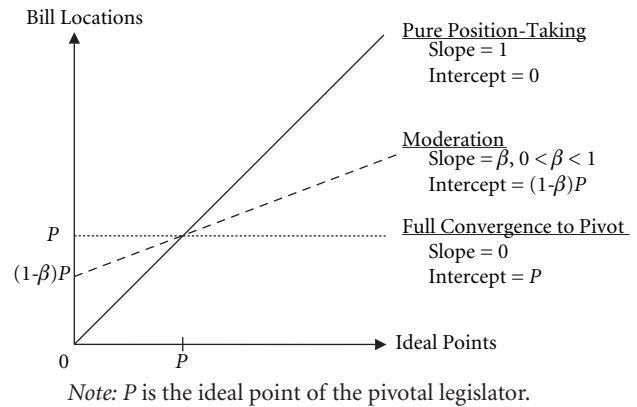
$$\begin{aligned} \text{Bill}_{ijt} = & \alpha + \beta X_{jt} \\ & + \delta_C \text{Committee}_{ijt} + \Delta_C \text{Committee}_{ijt} * X_{jt} \\ & + \delta_L \text{ComLeader}_{ijt} + \Delta_L \text{ComLeader}_{ijt} * X_{jt} \\ & + \delta_M \text{Majority}_{jt} + \Delta_M \text{Majority}_{jt} * X_{jt} + \varepsilon_{ijt} \end{aligned} \quad (1)$$

for bill  $i$  introduced by legislator  $j$  in Congress  $t$ , where  $\text{Bill}_{ijt}$  is the bill estimate obtained from the cosponsorship equation,  $X_{jt}$  is the ideal point of the bill's sponsor, and Committee, ComLeader, and Majority are indicator variables for agenda positions. The bill location and ideal point estimates are adjusted so that the median location in each Congress is 0.

The coefficients  $\alpha$  and  $\beta$  describe the relationship between bill locations and sponsor ideal points for baseline legislators—who are in the minority party and are not members of any committees of referral (i.e., all of the agenda position indicators are zero). If these legislators engage in *pure* position taking, we would expect bills to be located only at the sponsors' ideal points. This corresponds to an intercept of  $\alpha = 0$  and a slope of  $\beta = 1$ , which is illustrated by the solid line in Figure 4.

Although these legislators occupy the lowest agenda positions, we expect from Proposition 2 that as long as a legislator believes there is *some* chance that the bill will be considered, that some amount of proposal moderation is expected. This means that the slope will be between 0 and 1, as depicted by the dashed line in Figure 4. The maximum degree of moderation occurs where every legislator proposes a bill at the median legislator's ideal point. This corresponds to a slope of 0, shown by the dotted line in Figure 4. The theory, however, predicts some but not full moderation from legislators with even the lowest

FIGURE 4 Predicted Relationships Between Bill Locations and Ideal Points



agenda positions, so we should observe  $0 < \beta < 1$ . In both cases, the pivotalness of the median legislator implies that  $\alpha = 0$  (since  $P = 0$ ).

Proposition 2 also states that higher agenda positions are associated with greater degrees of moderation. The key coefficients of interest for testing this are the ones on the interaction terms:  $\Delta_C$ ,  $\Delta_L$ , and  $\Delta_M$ . These coefficients represent *differences* in slope for each type of agenda position. In other words, they capture the *effect* of each agenda position on proposal moderation. For example, the slope for a majority party member who is not on a committee of referral is  $\beta + \Delta_M$ , while the slope for a committee chairman is  $\beta + \Delta_M + \Delta_C + \Delta_L$ . Since the proposal moderation hypothesis implies the slope parameters for higher agenda types are closer to zero than the baseline, we should find that  $-\beta < \Delta_a \leq 0$  for  $a \in \{L, M, C\}$  and  $-\beta < \Delta_M + \Delta_C + \Delta_L < 0$ . (This also implies that at least one of the weak inequalities must be strict).

The remaining coefficients,  $\delta_C$ ,  $\delta_L$ , and  $\delta_M$ , represent the differences in the intercept for each agenda position. If the median is pivotal, then the median legislator will always propose his or her own ideal point regardless of agenda position. Every regression line should therefore pass through the median's ideal point, and these coefficients should all be zero.

Alternative theories imply different sets of parameters. For example, if legislators' personal preferences are actually more extreme than their districts and if introducing a bill does not have position-taking consequences, then we might observe proposals that are more extreme than roll-call based ideal points ( $\beta > 1$ ) because legislators moderate their behavior on roll-call votes but are free to pursue their personal preferences in terms of the bills they propose. Another possibility is that a legislator other than the median is pivotal. If that

legislator's ideal point is  $\rho$ , then we would expect an intercept of  $\alpha = (1 - \beta)\rho$ . Finally, if legislators *never* expect bills to be considered under a closed rule but they still have position-taking preferences, then the model predicts that they will only propose bills at their ideal points and that agenda positions will have no effect ( $\alpha = 0$ ,  $\beta = 1$ , and  $\Delta_a = 0$  for all  $a$ ). The null hypothesis is that of no relationship or effect ( $\alpha = \beta = \Delta_a = 0$  for all  $a$ ), although this actually has a substantive interpretation of full convergence to the median regardless of agenda position.

## Results

The regression model is estimated by weighted least squares to correct for heteroskedasticity in the estimated bill locations, and the results are presented in Table 2 for the House and Table 3 for the Senate.<sup>28</sup> The first column of each table shows the estimates obtained from pooling the data across all eight Congresses.

The pooled analyses provide initial support for the proposal moderation hypothesis. The baseline slope coefficient is .841 (s.d. = .008) in the House and .708 (s.d. = .013) in the Senate. They are both clearly in the expected range and are less than 1 by standard levels of significance, which supports the prediction that legislators with even the lowest agenda positions engage in some amount of proposal moderation.<sup>29</sup> The intercepts are both negative and significantly different from zero (−.045 in the House, −.034 in the Senate), which at first seems to suggest that the chamber medians are not pivotal. In the House, the baseline intercept is closer to the median than to other potential pivots (the closest Democratic median is −.2 and the closest veto pivot is −.181). In the Senate, the median is also slightly closer to the intercept than the nearest filibuster pivot (−.08).

More importantly, two of three interaction coefficients in the pooled analyses for each chamber are negative and statistically significant. Since these coefficients represent the effect of agenda positions on the slope, negative coefficients indicate greater

moderation.<sup>30</sup> The results also suggest that the greatest degree of moderation in proposal behavior is due to majority party status. For the House, majority party status changes the slope by −.388 (s.d. = .012), which implies the slope for a majority party non-committee member is .453 (s.d. = .011). The corresponding slope effect in the Senate is −.287 (s.d. = .017), and the implied slope is .421 (s.d. = .016). The next largest slope effects come from committee leadership, with magnitudes between one-fourth and one-fifth of the effects of majority party status (−.087 for the House and −.065 in the Senate). Finally, committee membership has a slope effect that barely misses standard levels of statistical significance and is slightly smaller in size than committee leadership in the Senate (−.045) and is not statistically significant in the House.

We can also find the total difference in slope from the baseline for the highest agenda position (committee chairmanships) by adding together the coefficients for all of the interaction terms. The total difference for a House committee or subcommittee chairman is −.487 (implying a slope of .354) and for a Senate chairman the difference is −.397 (implying a slope of .311). We can easily reject the possibility that these implied slopes are equal to zero, lending further support for the predictions of the model. In percentage terms, the degree of proposal moderation relative to the baseline is approximately 55% in both chambers.

When the data are pooled, the initial results suggest there is excellent support for the proposal moderation hypothesis. Legislators with higher agenda positions moderate their proposals to a much greater extent than legislators with low agenda positions. Furthermore, the analysis suggests that majority party status has a greater effect than other sources of agenda influence (committee membership or committee leadership).

Looking across the remaining columns of Tables 2 and 3, which present separate estimates by Congress, the results still support the basic Conclusion, but parameter estimates vary between Congresses. A likely reason that the results differ across Congresses is that the distribution of agenda power varies from Congress to Congress, perhaps as a result of rules changes (Oleszek 2001, 132–37). A number of caveats are therefore in order. First, closer inspection suggests that the theory is supported by data from the 101st through 105th Congresses much better than by the 106th to 108th Congresses.<sup>31</sup> Second, majority party

<sup>28</sup>Weighted least squares is a special case of generalized least squares and is estimated by transforming the data by dividing all variables by the standard error of the bill estimate from the cosponsorship probit equation.

<sup>29</sup>Underrepresentation of extremists' bills in the sample might lead to a baseline slope estimate that is artificially less than 1, although additional analysis suggests that any such effect is slight and does not affect the results.

<sup>30</sup>To avoid confusion, I will refer to estimates of the interaction coefficients  $\Delta_a$  as "slope effects" and to estimates of the raw agenda position coefficients  $\delta_a$  as "intercept effects."

<sup>31</sup>The 101st through 103rd were under unified Democratic control, the 104th through 106th and the 108th under unified Republican control, and in the 107th Republicans controlled the House while Democrats controlled the Senate.

TABLE 2 Effects of Preferences and Agenda Positions on House Bill Locations, Pooled and by Congress

	Pooled	101st	102nd	103rd	104th	105th	106th	107th	108th
Ideal Point	0.841** (0.008)	0.687** (0.065)	0.934** (0.050)	0.776** (0.062)	0.796** (0.062)	0.729** (0.058)	0.704** (0.052)	0.719** (0.056)	0.608** (0.067)
Committee × Ideal Point	-0.012 (0.014)	0.024 (0.053)	-0.007 (0.049)	0.022 (0.050)	-0.102* (0.048)	-0.033 (0.035)	-0.034 (0.035)	0.112** (0.036)	-0.023 (0.035)
Com. Leader × Ideal Point	-0.087** (0.016)	-0.278** (0.057)	-0.158** (0.053)	-0.216** (0.054)	-0.024 (0.052)	-0.120** (0.040)	-0.049 (0.040)	-0.027 (0.040)	-0.034 (0.041)
Majority × Ideal Point	-0.388** (0.012)	0.006 (0.074)	-0.298** (0.065)	-0.079 (0.074)	-0.047 (0.081)	-0.103 (0.070)	-0.052 (0.069)	-0.079 (0.071)	0.099 (0.077)
Committee	-0.001 (0.006)	0.006 (0.015)	-0.039** (0.014)	0.058** (0.017)	-0.005 (0.019)	-0.060** (0.016)	0.0001 (0.015)	0.032* (0.016)	0.016 (0.017)
Committee Leader	-0.010 (0.006)	0.048** (0.017)	0.072** (0.016)	-0.019 (0.019)	-0.043* (0.020)	-0.001 (0.018)	-0.003 (0.017)	-0.053** (0.018)	-0.063** (0.020)
Majority	-0.009 (0.005)	0.017 (0.030)	0.108** (0.026)	-0.021 (0.034)	-0.040 (0.037)	0.036 (0.038)	-0.017 (0.034)	-0.089* (0.036)	0.064 (0.044)
Intercept	-0.045** (0.004)	-0.012 (0.029)	-0.084** (0.024)	0.019 (0.033)	-0.060 (0.035)	-0.113** (0.036)	-0.128** (0.031)	-0.079* (0.034)	-0.201** (0.042)
R squared	0.562	0.399	0.442	0.536	0.527	0.596	0.525	0.532	0.569
N	15,160	1,925	2,033	1,738	1,556	1,836	2,127	2,006	1,939

Notes: \* $p < .05$ , \*\* $p < .01$ . Standard errors are in parentheses. To account for heteroskedasticity, estimates are from generalized (weighted) least squares regressions where the variance of each observation is assumed to be proportional to the variance of the bill location estimate from the cosponsorship probit equations.

status does not always have a larger effect on proposal moderation than other agenda positions. The majority party interaction coefficient is significant and larger in magnitude than the one for committee leadership in only the 102nd House and the 101st and 102nd Senates (all under Democratic majorities). The effect of committee leadership on moderation is larger in the 101st, 103rd, and 105th Houses and in the 103rd, 104th, and 105th Senates. The effect of basic committee membership on the slope is mostly insignificant, but is significant and negative only in the 104th House.

Third, some of the regressions provide either weak support or seem to contradict the hypothesis of proposal moderation, especially in later Congresses when Republican control was well established.<sup>32</sup> The evidence from the 106th Senate is mixed. The baseline slope is low relative to the other congresses, which suggests greater moderation occurs among *all* legislators. However, the effect of majority party status on the slope is positive and significant, again indicative of extremism relative to the baseline but moderation relative to pure position taking (the sum is still less than 1). On the other hand, com-

mittee membership also appears to lead to greater moderation (the interaction coefficient is  $-.143$  and the  $p$ -value for the coefficient is  $.081$ ).

For three Houses and three Senates analyzed, agenda positions do not lead to greater proposal moderation. More specifically, for the 106th and 108th Houses and 107th Senate, none of the interaction coefficients are statistically significant at the 5% level. While this does not provide much support for the theory, it is not necessarily inconsistent with it either (e.g., although unlikely,  $a$  might be equal for all legislators). For the 107th House, 106th Senate (as noted above), and 108th Senate, higher agenda positions lead to bills that are more extreme than the baseline, but that are still slightly more moderate than they would be from pure position taking.

Fourth, many of the estimated intercepts and intercept effects (i.e., the constant and the coefficients for the indicator variables) are significantly different from zero. The value of the intercept is the location of the bill introduced by the median legislator, and the intercept shifts are therefore the effects of agenda positions on the median legislator's bill. Five of the House baseline intercepts and five of the Senate baseline intercepts are negative and significant, which suggests a liberal bias regardless of which party holds the majority. Many of the intercept effects are statistically significant, but there seems to be no consistent

<sup>32</sup>The lack of moderation may be due to the drastic centralization of proposal power under GOP leadership (Aldrich and Rohde 2000; Schickler and Pearson 2005). I thank an anonymous reviewer for pointing this out.

TABLE 3 Effects of Preferences and Agenda Positions on Senate Bill Locations, Pooled and by Congress

	Pooled	101st	102nd	103rd	104th	105th	106th	107th	108th
Ideal Point	0.708** (0.013)	0.619** (0.080)	0.912** (0.069)	0.694* (0.085)	0.569** (0.147)	0.553** (0.113)	0.411** (0.090)	0.750** (0.065)	0.613** (0.063)
Committee × Ideal Point	-0.045 (0.026)	0.037 (0.073)	0.087 (0.085)	0.106 (0.100)	0.046 (0.104)	0.069 (0.076)	-0.143 (0.082)	-0.109 (0.060)	-0.017 (0.059)
Com. Leader × Ideal Point	-0.065* (0.027)	0.026 (0.073)	-0.153 (0.087)	-0.285** (0.102)	-0.332** (0.109)	-0.305** (0.081)	-0.017 (0.084)	-0.060 (0.067)	0.137* (0.061)
Majority × Ideal Point	-0.287** (0.017)	-0.417** (0.106)	-0.309** (0.098)	-0.129 (0.126)	0.082 (0.164)	0.069 (0.133)	0.300** (0.115)	0.029 (0.093)	-0.035 (0.105)
Committee	-0.044** (0.009)	0.021 (0.026)	-0.039 (0.026)	0.073* (0.034)	0.006 (0.040)	-0.085** (0.030)	-0.022 (0.029)	-0.080** (0.022)	0.001 (0.023)
Committee Leader	0.028** (0.010)	0.014 (0.025)	0.080** (0.026)	-0.080* (0.033)	-0.046 (0.043)	-0.004 (0.032)	-0.076* (0.030)	0.063** (0.024)	0.033 (0.024)
Majority	0.015* (0.007)	0.047 (0.037)	0.132** (0.035)	0.007 (0.047)	0.068 (0.069)	0.062 (0.065)	0.065 (0.052)	0.175** (0.036)	-0.127** (0.039)
Intercept	-0.034** (0.006)	-0.068* (0.033)	-0.107** (0.032)	0.015 (0.044)	-0.051 (0.067)	-0.099 (0.063)	-0.178** (0.049)	-0.079** (0.026)	-0.083* (0.032)
R squared	0.401	0.268	0.428	0.387	0.458	0.434	0.359	0.349	0.33
N	7,650	1,005	1,017	794	694	843	1,096	1,102	1,099

Notes: \*p < .05, \*\*p < .01. Standard errors are in parentheses. To account for heteroskedasticity, estimates are from generalized (weighted) least squares regressions where the variance of each observation is assumed to be proportional to the variance of the bill location estimate from the cosponsorship probit equations.

pattern to the direction. The substantive importance of these intercept shifts is not entirely clear, but at the very least they suggest the median is not universally pivotal, which is perhaps not too surprising in light of pivotal politics theory (Krehbiel 1998). The next section attempts to shed additional light on the matter of pivots.

### Where's the Pivot?

Is a legislator other than the median pivotal? If so, where is the pivot located? To investigate these questions, we can make use of the theoretical implication that if there is a pivotal legislator, then agenda position will have no effect on that legislator's choice of bill location because bills will always be located at his or her ideal point. In terms of the regression model, if the pivotal legislator has an ideal point  $\rho$ , then all of the regression lines (regardless of slope) should pass through the bill  $\rho$  and ideal point  $\rho$  exactly as depicted in Figure 4.

If we assume that there is a pivotal legislator with ideal point  $\rho$ , then it follows that the intercept and intercept shifts are functions of  $\rho$  and the slope-related parameters  $\beta$ ,  $\Delta_C$ ,  $\Delta_L$ , and  $\Delta_M$ . In other words, if we constrain the regression model in (1)

to always pass through  $(\rho, \rho)$ , then we can estimate  $\rho$  by estimating the nonlinear regression model:<sup>33</sup>

$$\text{Bill}_{ij} = \rho + (\beta + \Delta_C \text{Committee}_{ij} + \Delta_L \text{ComLeader}_{ij} + \Delta_M \text{Majority}_{jt})(X_j - \rho) + \varepsilon_{ij} \quad (2)$$

The error term in equation (2) is heteroskedastic due to variation in bill estimates (as in the original equation), nonlinear in the parameters, and the pivots vary by Congress, so weighted nonlinear least squares is used to estimate the model separately for each chamber and Congress. Since the pivot parameters are the focus of interest, I summarize them in Table 4 rather than presenting the full estimation results.<sup>34</sup> Table 4 also presents the 95% confidence intervals and the locations of alternative pivots.<sup>35</sup>

Interestingly, the results suggest that the median is most frequently the pivotal legislator. Out of all

<sup>33</sup>The equation is nonlinear in the underlying parameters. See the online appendix for the derivation.

<sup>34</sup>Full results are presented in the online appendix.

<sup>35</sup>Republican presidents (GHW Bush for 101st and 102nd Congresses and GW Bush for 107th and 108th Congresses) imply that the veto pivot is on the right while a Democratic president (Clinton for the 103rd through 106th Congresses) implies the veto pivot is on the left.

TABLE 4 Estimated and Potential Alternative Pivots

## a. House pivots

Congress	Estimated Pivot	Confidence Interval	Closest Pivot	Dem Median	Rep Median	Veto Pivot
101	0.01	[−.04,.06]	<u>Median</u>	−0.20	0.46	0.32
102	0.03	[−.02,.08]	<u>Median</u>	−0.20	0.48	0.32
103	0.01	[−.06,.08]	<u>Median</u>	−0.18	0.54	−0.16
104	−0.31	[−.41,−.20]	Veto	−0.61	0.21	−0.49
105	−0.33	[−.43,−.23]	Veto	−0.59	0.24	−0.49
106	−0.41	[−.48,−.34]	Veto	−0.58	0.25	−0.49
107	−0.37	[−.46,−.27]	Dem Median	−0.58	0.26	0.22
108	−0.50	[−.56,−.43]	Dem Median	−0.62	0.21	0.18

## b. Senate pivots

Congress	Estimated Pivot	Confidence Interval	Closest Pivot	Dem Median	Rep Median	Veto Pivot	Left Filibuster Pivot	Right Filibuster Pivot
101	−0.04	[−.08,.01]	<u>Median</u>	−0.18	0.47	0.38	−0.08	0.20
102	0.01	[−.06,.09]	<u>Median</u>	−0.19	0.48	0.33	−0.09	0.19
103	0.04	[−.05,.12]	<u>Median</u>	−0.18	0.53	−0.16	−0.09	0.22
104	0.07	[−.03,.17]	<u>Median</u>	−0.38	0.36	−0.30	−0.22	0.25
105	−0.17	[−.30,−.03]	Median	−0.51	0.25	−0.44	−0.40	0.17
106	−0.28	[−.35,−.20]	Left Filibuster	−0.49	0.26	−0.43	−0.38	0.17
107	−0.01	[−.09,.08]	<u>Median</u>	−0.33	0.42	0.36	−0.26	0.30
108	−0.27	[−.35,−.19]	<u>Left Filibuster</u>	−0.44	0.32	0.27	−0.33	0.20

Notes: Median legislator is 0 in all Congresses. Poole-Rosenthal NOMINATE scores for alternative pivots are in the same scale. Underlined entry in Closest Pivot column indicates that the pivot is within the 95 percent confidence interval for the pivot estimate.

sixteen cases, there are nine cases in which a pivot falls inside the 95% confidence interval. Of these, there are three Houses and five Senates—all but one case—in which it is the median legislator.

Five of the estimated pivots are consistent with Krehbiel's pivotal politics theory. In the 104th, 105th, and 106th Houses, the closest pivot to the estimate is the veto pivot, although in all three cases it is outside of the 95% confidence interval. In the 106th Senate, the estimated pivot is closest to the left filibuster pivot, which also falls outside of the confidence interval.<sup>36</sup> In the 108th Senate, the left filibuster pivot is closest to the estimate *and* falls within the confidence interval.

Finally, the estimated pivot is never closest to the majority party pivot. When contrasted with the results from the unconstrained regression that indicate that majority party members' agenda positions influence their proposal behavior, this suggests that being pivotal and having agenda influence are distinct ways of

affecting legislative outcomes. An interesting and quite puzzling finding is that the estimated pivot is closest to the *minority* party (Democratic Party) median in the 107th and 108th Houses, although they never fall in the confidence interval. This seems to fly in the face of received wisdom about the partisan House and indicates that some caution in accepting the results may be in order. It might, however, be consistent with the centralization of power in the hands of Republican leaders (Aldrich and Rohde 2000).<sup>37</sup> This would have led all but a select few legislators to believe that their legislative efforts were almost certain to fail (thus eliminating the differences in positive proposal power between observed agenda positions).

## Conclusion

The legislative process is a complicated beast. Members of Congress collectively introduce thousands of bills every year and face enormous workloads as a

<sup>36</sup>Krehbiel's theory suggests that the left filibuster should be superseded by the veto pivot.

<sup>37</sup>I thank an anonymous reviewer for suggesting this point.

consequence. The legislature is organized, in part, to deal with this complexity by dividing labor and giving some members priority in deciding what is considered. This paper explored one consequence of variation in what legislative scholars often call “positive agenda power.” As conceived of here, individual legislators wield a level of influence far from what is normally considered “powerful.” Rather, at the beginning of the legislative process, they face many uncertainties about how and whether their proposals will be considered. They do, however, know that agenda power is distributed unequally and which positions within the legislative hierarchy grant greater privileges, which in turn provide better *opportunities* to shape policy outcomes.<sup>38</sup>

The combination of theoretical and empirical analysis provides new insights about how legislative organization shapes early-stage legislative behavior. Specifically, the logical consequence of strategic choice by legislators who pursue both position taking and policy seeking is that the ones with higher agenda positions moderate their proposals to a greater extent than legislators with low agenda positions, whose bills mostly reflect position-taking motivations. The data analysis largely supports the proposition and provides additional insights about the sources of agenda influence beyond what the theory can tell us. Majority party status and committee leadership both appear to matter, which suggests that they are alternative and mutually reinforcing (as opposed to mutually exclusive) sources of agenda influence. Committee membership only matters a little.<sup>39</sup> Variation in the results across time suggest that the distribution of positive agenda power varies from Congress to Congress, but also reveals that some caution should be exercised in drawing firm conclusions about congressional behavior. In a few cases, the results suggest that higher agenda positions lead to greater extremism, and they are not entirely conclusive about whom legislators view as being pivotal to a bill’s passage, although the additional analysis performed suggests that the median legislator is the leading candidate for this role.

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<sup>38</sup>Even the much maligned Dan Quayle recognized this fact (Fenno 1989).

<sup>39</sup>This is in contrast to Woon (2004b), who finds that committee membership is a significant influence on legislative attention.

ious stages of this project. Earlier versions were presented at the 2006 annual conference of the Midwest Political Science Association and at the American Society and Politics Workshop at Columbia University.

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