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from the Chilean Congress

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Measuring Spatial Aspects of Legislative Delay: Evidence from the Chilean Congress

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Introduction

Control over the legislative calendar is one of the central features of legislative politics. Bills become “bottled up” in committees, they are filibustered on the floor, and they become ensnared in the intricacies of bicameral reconciliation and constitutional review. The decision whether to grant speedy attention to a bill, or to impede its progress with dilatory procedures is a crucial element of legislative tactics. Because of the large differences in the pace with which bills pass through the legislative process, predicting the speed with which bills are attended to is a matter of active research interest.

Notably analysts have examined dichotomous choices that influence the speed of legislation (Huber (1992), Tsebelis and Money (1997), Wawro and Schickler (2004)). However, the speed with which a legislative initiative passes through the process is a continuous variable. In this paper we present a statistical estimator for calibrating the influence of the spatial characteristics of bills that recognizes the continuous nature of the dependent variable: the speed with which committees attend to bills. Our empirical model blends techniques from survival analysis, Cox and Oakes (1984), with scaling techniques that are more commonly applied to the analysis of voting behavior,

Poole and Rosenthal. (1997), to estimate spatial attributes of the voting decision. Spatial characteristics are frequently observed to influence legislators' dichotomous decisions to vote in favor of or against bills, but to our knowledge they have not been applied to continuous data on the amount of time bills spend waiting to pass to the next stage of the legislative process.

We use our estimation technique to analyze the trajectories of over a thousand bills considered by Committees of the Congress of Chile between 1993 and 2005. Our analysis presents evidence that the length of time that passes before a legislative committee reports on a bill that has been referred to it is influenced by the the spatial characteristics of the committee and of the bill. Our finding of significant spatial effects on the speed with which legislation is considered is robust to inclusion of variables calibrating the electoral cycle and possible "learning effects".

Next: Outline the organization of the paper.

1 Estimating Spatial Effects using Duration Data

In this section we present a statistical estimator that allows us to calibrate spatial effects in the context of duration data. Our model embeds spatial characteristics within a statistical model of survival data in much the same way that "scaling models" of voting embed spatial characteristics within a dichotomous dependent variable model such as probit or logit.

The reason to include spatial effects in a model is that not all political actors will react to the same stimulus in the same way. In fact, we might expect opposite reactions to a bill to legalize euthanasia from politicians on the right and left. The spatial framework provides a parsimonious way of capturing these different reactions—legislators react more favorably to bills that are proximate, and less so to those that are distant.

If one considers a hypothetical spending bill that would bring more resources to a district represented by two members of Chile's Chamber of

Deputies, one from the left of center Concertación coalition, and the other from the right of center Alianza, we would expect both to react favorably. However, if the bill was amended to include a provision to increase the income tax we might expect the Concertación Deputy to become more favorably disposed to the bill, while we would expect the Deputy from the Alianza to cool to the proposal. This is easy to capture in a spatial model in which we would represent the amendment to increase taxes as moving the “location” of the bill leftward, moving it farther from the Alianza Deputy, and closer to her Concertación counterpart. While we cannot observe the underlying continuum of possible bill locations directly, it is indirectly illuminated by the observed behavior of the two legislators. Of course, as the preceding example suggests, there may also be non-spatial characteristics of a bill that are important, such as whether it favors a legislator’s district, or whether it enjoys consensus appeal¹—these effects can be expected to apply in the same way to all legislators whose district is being favored, or who have just been given an opportunity to take a position against drug trafficking.

Political scientists now have amassed a considerable amount of experience in measuring spatial influences on dichotomous outcomes. For example, analysts have gained explanatory power in models of dichotomous voting decisions by simultaneously estimating “locations” for bills and for legislators—estimates are then calculated on the assumption that, subject to random error, legislators vote for bills whose spatial locations are closer to their own. These techniques have been applied across a wide range of legislatures, including the US Congress, the Assembly in the French fourth republic, the Israeli Knesset, the United Nations General Assembly, and committees of the Chilean Senate. Similar techniques have been applied to analyze voters’ ballot choices in California *referenda*.

¹For example, bills to increase the penalties for illegal drug trafficking almost invariably go over well in countries that are net importers of illegal narcotics.

Here we adapt spatial models of voting to measure spatial parameters in the context of a duration model. For concreteness, suppose we are interested in the hazard rate for a committee to report a bill that has been referred to it. In a standard parametric formulation of a survival model, this hazard rate for bill \mathbf{b} to be reported by committee \mathbf{c} will be an increasing function of a discriminant $\mathbf{q}_{\mathbf{bc}}$ that may itself depend on some measured characteristics of the committee and the bill.

Let's consider a one dimensional version of the spatial model, and suppose that committee \mathbf{c} has a "location" $\mathbf{x}_{\mathbf{c}}$. This location may itself depend on a vector of explanators, such as variables identifying the various committees, the party affiliations of the legislators who sit on the committee, or traits of their legislative districts such as the percentage of home owners or farmers. Let's denote these characteristics by $\vec{\mathbf{w}}_{\mathbf{c}}$, while the vector of parameters $\vec{\chi}$ connects these traits to the committee's location according to a relationship of the form:

$$\mathbf{x}_{\mathbf{c}} = f(\vec{\mathbf{w}}_{\mathbf{c}}|\vec{\chi}) \tag{1}$$

Likewise, let us assume that the bill being considered by the committee can be represented by a spatial location $\mathbf{z}_{\mathbf{b}}$, while the *status quo* that applies unless and until bill \mathbf{b} is enacted corresponds to a spatial location of $\mathbf{z}_{\mathbf{b},sq}$. Finally, we might expect that the bill has some non-spatial characteristics $\mathbf{w}_{\mathbf{b}}$ which must be weighed against those of the *status quo*, $\mathbf{w}_{\mathbf{b},sq}$.

If we let $\mathbf{d}(\mathbf{x}, \mathbf{y})$ measure the "distance" between spatial locations \mathbf{x} and \mathbf{y} , then we might expect the discriminant in our model, $\mathbf{q}_{\mathbf{bc}}$, which calibrates how quickly a committee is disposed to attend to a bill, to depend on the relative attractiveness to committee \mathbf{c} of the non-spatial characteristics of the bill as opposed to the *status quo*: $\mathbf{a}_{\mathbf{bc}}^* = \mathbf{w}_{\mathbf{b}} - \mathbf{w}_{\mathbf{b},sq}$, and on the relative distance between the committee and the bill, $\mathbf{d}(\mathbf{x}_{\mathbf{c}}, \mathbf{z}_{\mathbf{b}})$ as compared with the distance between the committee and the *status quo*, $\mathbf{d}(\mathbf{x}_{\mathbf{c}}, \mathbf{z}_{\mathbf{b},sq})$:

$$\mathbf{q}_{bc} = \mathbf{d}(\mathbf{x}_c, \mathbf{z}_{b,sq}) - \mathbf{d}(\mathbf{x}_c, \mathbf{z}_b) + \mathbf{a}_{bc}^* \quad (2)$$

To operationalize the model, we use the quadratic distance function, a commonly used choice in the spatial voting literature:

$$\mathbf{d}(\mathbf{x}, \mathbf{y}) = \frac{1}{2}(\mathbf{x} - \mathbf{y})^2 \quad (3)$$

Substituting this formulation for \mathbf{d} into equation (2) we have:

$$\mathbf{q}_{bc} = \mathbf{x}_c \mathbf{g}_b + \mathbf{a}_{bc} \quad (4)$$

where:

$$\mathbf{g}_b = \mathbf{z}_b - \mathbf{z}_{b,sq} \quad \text{and} \quad \mathbf{a}_{bc} = \mathbf{a}_{bc}^* + \frac{z_{b,sq}^2 - z_b^2}{2}$$

Here \mathbf{x}_c measures the spatial characteristic of the committee, \mathbf{g}_b corresponds to the spatial displacement from the *status quo* that would result from enacting the bill and \mathbf{a}_{bc} captures non-spatial influences on the hazard rate for committee consideration².

If we operationalize (1) by choosing $f(\vec{\mathbf{p}}, \vec{\mathbf{q}}) = \vec{\mathbf{p}}' \vec{\mathbf{q}}$, and proceed analogously with \mathbf{g}_b and with \mathbf{a}_{bc} we have:

$$\mathbf{g}_b = \vec{\gamma}' \vec{\mathbf{w}}_b \quad \text{and} \quad \mathbf{x}_c = \vec{\chi}' \vec{\mathbf{w}}_c \quad \text{and} \quad \mathbf{a}_{bc} = \vec{\alpha}' \vec{\mathbf{w}}_{bc} \quad (5)$$

where $\vec{\mathbf{w}}_b$, $\vec{\mathbf{w}}_c$, and $\vec{\mathbf{w}}_{bc}$ are vectors of explanatory variables, and $\vec{\gamma}$, $\vec{\chi}$, and $\vec{\alpha}$ are vectors of parameters. Substituting from equation (5) into equation (4) we have a model for the discriminant for bill \mathbf{b} as it is considered by committee \mathbf{c} :

²Notice that \mathbf{a}_{bc} does not interact with \mathbf{x}_c , so that it has the same effect on all legislators. The extra term in \mathbf{a}_{bc} , $\frac{z_{b,sq}^2 - z_b^2}{2}$ can in fact be rewritten as $\mathbf{g}_b \left(\frac{z_{b,sq} + z_b}{2} \right)$ the product of the “displacement” parameter \mathbf{g}_b and the midpoint of the proposal and the *status quo*. While, subject to a few normalizations discussed below, \mathbf{g}_b and \mathbf{a}_{bc} can be identified, in the statistical sense (Rothenberg, 1971), we cannot disentangle \mathbf{a}_{bc}^* and $\left(\frac{z_{b,sq} + z_b}{2} \right)$ from our estimates of \mathbf{g}_b and \mathbf{a}_{bc} .

$$\mathbf{q}_{bc} = \mathbf{q}(\vec{\gamma}, \vec{\chi}, \vec{\alpha} | \vec{w}_b, \vec{w}_c, \vec{w}_{bc}) \equiv (\vec{\gamma}' \vec{w}_b)(\vec{\chi}' \vec{w}_c) + \vec{\alpha}' \vec{w}_{bc} \quad (6)$$

and for the hazard rate at time \mathbf{t} :

$$\mathbf{h}_{bc} = \mathbf{h}(\mathbf{t}; \mathbf{q}_{bc}, \vec{\theta}) \quad (7)$$

Where \mathbf{h} is a parametric hazard function giving the hazard rate at time \mathbf{t} . We assume that \mathbf{h} is increasing in \mathbf{q}_{bc} , while $\vec{\theta}$ is a vector of ancillary parameters pertaining to the hazard function.

If our data consist of explanatory variables $\{\vec{w}_b, \vec{w}_c, \vec{w}_{bc}\}$, the time from referral to the committee until the bill leaves our dataset, t_{cb} , and we can discriminate between members of the set of “uncensored” observations \mathbf{u} whose referral dates we observe, and right censored observations that were still in progress when we stopped collecting data, then the log of the likelihood function for our model is given by:

$$l = \sum_{bc \in \mathbf{u}} \ln \mathbf{h}(\mathbf{t}; \mathbf{q}_{bc}, \vec{\theta}) + \sum \ln S(\mathbf{t}; \mathbf{q}_{bc}, \vec{\theta}) \quad (8)$$

Where S is the survival function, defined by:

$$S(\mathbf{t}; \mathbf{q}_{bc}, \vec{\theta}) = \int_0^{\mathbf{t}} \mathbf{h}(\mathbf{t}; \mathbf{q}_{bc}, \vec{\theta}) dt \quad (9)$$

where the second summation in equation (8) is taken across all observations. For future reference, let $n_{\mathbf{u}}$ denote the number of uncensored observations in a hypothetical sample.

We implement this model by assuming that \mathbf{h} is a Weibull hazard, which has but two ancillary parameters, so that:

$$\vec{\theta} = \begin{pmatrix} \rho \\ \kappa \end{pmatrix}$$

and so, we have the hazard rate for the Weibull distribution:

$$\mathbf{h}(\mathbf{t}; \mathbf{q}_{bc}, \vec{\theta}) = \kappa e^{(\rho + \mathbf{q}_{bc})} \left(e^{(\rho + \mathbf{q}_{bc})} \mathbf{t} \right)^{\kappa - 1} \quad (10)$$

while \mathbf{q}_{bc} is given by (6). Notice that if $\kappa = 1$ this model coincides with the exponential model. Higher values for κ correspond to a hazard rate that increases over time, while values below 1 for κ indicate that the hazard rate is decreasing with the age of the process.

Substituting into equation (9) from equation (10) we find that for the Weibull distribution, the survivor function is given by:

$$S(\mathbf{t}; \mathbf{q}_{bc}, \vec{\theta}) = e^{-\left(e^{(\rho + \mathbf{q}_{bc})} \mathbf{t} \right)^{\kappa}} \quad (11)$$

To obtain the log of the likelihood function for our model we substitute from equation (6) into equations (10) and (11), and then into equation (8) to obtain:

$$l = n_{\mathbf{u}} \ln \kappa + \sum_{bc \in \mathbf{u}} \left(\kappa(\rho + \mathbf{q}_{bc}) + (\kappa - 1) \ln \mathbf{t}_{bc} \right) - \sum \left(e^{(\rho + \mathbf{q}_{bc})} \mathbf{t}_{bc} \right)^{\kappa} \quad (12)$$

where \mathbf{q}_{bc} is given in equation (6), and \mathbf{t}_{bc} is the amount of time committee c is observed waiting to report on bill b .

To identify this model we must choose a scale and an origin for the committee parameters, and, given the presence of ρ in the model, an origin for the bill parameters.

Maximizing the log of the likelihood function in equation (12) subject to identifying restrictions is fairly straightforward³, and it is not hard to obtain standard error estimates⁴.

³We use an iterative estimation scheme that at each stage calculates the value for κ conditional on the other parameters, then taking $\vec{\gamma}$ and κ , and the identifying restrictions as given the likelihood is maximized using the Newton-Rapheson (N-R) algorithm, and finally, taking $\vec{\chi}$ and κ and the identifying restrictions as given, the remaining parameters are estimated using N-R. These three steps are repeated until the algorithm converges.

⁴Here we use the outer product of the scores computed using the converged values for the parameter estimates Berndt et al. (1974).

In the remainder of this paper, we illustrate our spatial duration model using data from the Congress of Chile, and provide estimates of the spatial characteristics of the various committees.

2 The Legislative Process in Chile

The legislature has two chambers, the Senate and the Chamber of Deputies⁵. The executive has a monopoly over proposals that would incur expenditures, and enjoys special insistence powers. Two coalitions of political parties, the center-left Concertación and the center-right Alianza, and a committee system in which committee seats are controlled by the political parties. During the period we study here, the Concertación controlled the presidency and the Chamber of Deputies, while the Alianza, with the help of a group the unelected Senators⁶ have controlled the Senate. Bills can be proposed by the president, in which case they are called “messages”, or by members of Congress in their respective chambers, in which case they are referred to as “motions”. Virtually all bills that are not submitted under supreme urgency (which happens when the executive requires both chambers of Congress to vote on the bill within 24 hours) are referred to a committee of first instance.

Bills in the Congress of Chile are given two readings. The first of these, called “consideration in general” takes up the question of whether it makes sense to legislate along the general lines set forth in the bill. The committee is expected to make a recommendation in favor of or against the bill, and to report this to its parent chamber. If the chamber decides to proceed with the bill, the legislation returns to the committee for a second reading, called “consideration in particular”. Our data cover the first reading of a bill by the committee to which it was initially referred. For the purposes of our

⁵Readers seeking an overview of the legislative process in Chile might consult Londregan (2000) Chapter 3, or Aninat et al. (2004).

⁶During the period we study about a fifth of the Senate was composed of appointed Senators. These have been eliminated from the Congress under a just-passed amendment to the Constitution.

present analysis, we do not distinguish between the relative handful of bills that receive a negative recommendation from the committee, and those that the committee endorses. Of course, one very practical way to stop a bill is for the committee to which it has been referred to attend to other business rather than issuing a report⁷.

While individual members can be removed from a committee by their legislative caucus, the legislative caucuses themselves are free to act as they please until the next regularly scheduled legislative election⁸. There is one serious check on legislative committees, and that is the imposition of urgency by the executive. The President of the Republic can insist that a bill be considered within 30, 10, or 3 days, effectively forcing the legislative committee to discharge the bill. Of course, use of this power by the executive is not without risks: the legislature may respond by rejecting the bill, in which case it cannot be reintroduced until after a year long waiting period. It is not uncommon for the executive to repeatedly impose and then remove urgency as he shepherd's legislation through the Congress. Thus, we might expect that executive bills would enjoy speedier passage, irrespective of the friendliness or hostility felt by the committee for the content of such legislative initiatives.

3 Our Data

We have collected data on all bills in the on line archives of the Chilean Congress that were proposed before January 2005. This data base covers the period 1993-2005: it omits bills from the first three years after the end of military rule in March 1990. Many of the bills in this dataset were referred

⁷It is perhaps worth noting that the military government that took power on September 10, 1973, which should not be mistaken for the Pinochet government which seized power on September 11, 1973, did so in part because the Congress had just voted itself a pay raise, even as legislation to increase compensation for the military (along with much crucial legislation) remained "under consideration" by Congress. Indeed, the ultimatum issued to President Alessandri Palma just before the coup included demands for "immediate dispatch of the budget law" Urzúa (1992) pp.410-22.

⁸Legislative elections take place every four years in Chile. At each such election, the entire Chamber of Deputies, and one half of the elected Senators are chosen.

to committees that only considered a relatively small number of legislative proposals, and we omit these from our analysis. However, ten legislative committees account for half of the bills considered by the Congress during the period we study. These are the Constitution, Education, Government, Labor, and Transportation committees of the Senate, and their counterparts in the Chamber of Deputies. Restricting our attention to these committees we are left with a sample of 1,370 bills.

Working with our subset of bills for the busiest committees, estimate our spatial duration model using the amount of time elapsed between a bill being referred to one of our committees for initial consideration, and its being reported back to the parent chamber by the committee. In many cases these episodes are “right censored” in that over 60% (847 out of 1,307) of the bills in our dataset have not yet received committee reports. Unlike the US Congress, in which a bill is automatically defeated if it fails to pass during the legislative session in which it was proposed, bills in the Congress of Chile can linger indefinitely, and in rare cases, bills are approved after as much as a decade after being proposed. The internal rules of Congress require that once two years have elapsed since a bill was proposed, it must be “archived”. However, archived bills can be reactivated at the request of a single legislator, or of the executive. When they are reactivated, they resume their legislative trajectory at the stage they had reached when they were archived. Thus, at least in principle, all bills not yet given an up or down vote could still be passed into legislation.

For each bill in our dataset, we obtained information about the proposer, and his or her party affiliation, the committee to which the bill was assigned, and, for bills that have been reported back to the parent chamber. the date on which this occurred.

The Congress has adopted rules that call for bills to be “archived” if they have not passed within two years from their date of introduction, however,

such archived bills can be easily brought back out of the archives at the request of a few legislators. Neglect is one of the primary means by which initiatives are stopped in the Congress of Chile.

Among the 2,801 bills for which we have data, there are several cases for which the record contains internal contradictions, for example with a first committee report coming before the date the bill was introduced. We exclude these from our analysis. We also leave out several cases in which a motion was introduced by an legislator not affiliated with a political party, as one of our objectives in the following analysis will be to look for evidence of ideological effects on the speed with which bills move through the system⁹.

For each bill, we gather data for the partisan affiliations of the authors of the bills in our dataset. We treat all nine of the institutional senators appointed by Augusto Pinochet (the former military dictator) to eight year terms as Alianza members for the purposes of their political sympathies. For the nine Senators appointed in 1998 to replace them, we count the two appointed by Concertación president Eduardo Frei as members of the Concertación, as well as Enrique Silva Cima, who caucuses with the Frei appointees. We treat the remaining institutional senators as members of the Alianza. Thus, we expect that it is in the Senate that executive proposals and bills introduced by members of the Concertación must pass through an ideologically unfriendly chamber. We anticipate that Alianza bills will tend to encounter more ideological resistance in the Chamber of Deputies.

4 Data Analysis

In order to apply our spatial model to the Chilean Congressional Committee data, we must impose several normalizations in order to achieve identification. We normalize the spatial proposal coefficient for the executive, $\gamma_{\text{Exec.}}$,

⁹In addition we leave out the handful of bills that were retired by their own authors or ruled unconstitutional.

to equal 0, and we do the same for the spatial parameter for the Constitution Committee in the Chamber of Deputies, $\chi_{\text{Const.,Dip.}}$, and for the non-spatial parameters pertaining to executive proposals, and to the Constitution Committee in the Chamber of Deputies. Thus, the parameter ρ calibrates the hazard rate for executive proposals considered by the Constitution Committee in the Chamber of Deputies. Finally, we must choose a “scale” for our spatial parameter, and we do this by setting the spatial displacement parameter for the Senate Constitutions Committee, $\chi_{\text{Const.,Sen.}}$, (where the Alianza have had a majority of members during the period we analyze) equal to 1. Thus, we treat the Alianza controlled Senate Constitution Committee as being “one unit” to the right of its Concertación controlled counterpart in the Chamber of Deputies. This amounts to an arbitrary choice of units; we could have chosen any other pair of committees to give us an origin and a scale in which to measure our spatial parameters, much as the choice of the origin and scale for a thermometer are arbitrary¹⁰ All other distances are measured relative to this one. Likewise, our proposal parameters measure how far to the right proposal displacements are relative to those initiated by the Executive.

Table 1 About Here

Parameter estimates for our model appear in Table One. The “shape” parameter κ indicates that the hazard rate is falling with time: the longer a bill has been with a committee, the less likely the committee is to report it on a given day. The “baseline” risk parameter ρ is estimated to equal -6.28 . While our estimated value for κ is 0.47 . We can use these estimates to find our model’s prediction of the median time needed for committee c to attend

¹⁰The Fahrenheit and Celsius measures use different origins and scales, and the choice between them is a matter of convenience, provided that once having chosen a metric, one remains consistent!

to an proposal c by noting that the median predicted waiting time, t_{med} will satisfy equation (13):

$$S(t_{\text{med}}; \mathbf{q}_{bc}, \vec{\theta}) = \frac{1}{2} \quad (13)$$

substituting from equation (11) and solving for t_{med} we have:

$$t_{\text{med}} = \left(\ln(2) \right)^{\frac{1}{\kappa}} e^{-(\rho + \mathbf{q}_{bc})} \quad (14)$$

If we apply this formula using the values for the Deputies Constitution Committee responding to an executive proposal (given our normalizations, $\mathbf{q}_{bc} = 0$ for such a proposal) we have an estimated value for t_{med} of 226 days. For other committees and proposers \mathbf{q}_{bc} will not be equal to zero. For example,

The non-spatial parameter for the Senate Constitution Committee of -0.61 indicates that this committee is less quick to report executive bills: the estimates indicate that the median time to for the Senate committee to report on an executive bill is 415 days.

We see that proposals by the Alianza, the Concertación, and even Bipartisan proposals not cosponsored by the executive are attended to by the Deputies Constitution Committee much more slowly, as we might expect given their authors lack the executive’s ability to force speedy consideration. A similar set of calculations to those we have just undertaken show that our estimates imply that over 900 days must pass before there is even one chance in ten that an Alianza sponsored bill will emerge from the Deputies Constitution Committee¹¹, and the picture is only slightly more favorable for Concertación and bipartisan motions. In contrast, there is a one in ten chance that the Senate Constitution committee will consider an Alianza bill

¹¹The median waiting time for such a proposal is much longer, as a practical matter, half of such proposals never emerge from committee,

within 66 days, while Concertación and bipartisan motions also receive speedier consideration in the Senate Constitution Committee than in its Chamber of Deputies counterpart.

One hypothesis about why consideration comes more quickly for Alainza proposals on the Senate side, and *vice versa* for executive bills— is that a committee that is ideologically “hostile” to the bill will seek to impede its progress. Another implication of our estimates: that even when they are slowed by the Senate, executive bills move faster than Alianza motions, is probably the consequence of the president’s ability to apply, or to threaten to apply, the executive’s insistence powers.

More puzzling in the fate implied by our estimates for Concertación and bipartisan bills. One might have expected that they would receive more favorable treatment from the Concertación controlled committee in the Chamber of Deputies than from the Alianza controlled Senate committee. That is what one might expect if such member motions were a random selection from the legislative agenda of the left. But what if they are not. Given the advantage conferred on bills by the executive’s insistence powers, a Concertación legislator wishing to enact a proposal can greatly improve a measure’s chances of being enacted if it comes forward as an executive sponsored bill. Perhaps the member bills we observe from the Concertación and the bipartisan motions are those that could not garner executive sponsorship, as might happen if the bills stray too far towards the right, from the president’s point of view, making them less appealing to Constitution Committee members as to the executive, but at the same time, making them more palatable to members of the Alianza controlled Senate committee. Of course, this hypothesis does not comport with the stereotype of Concertación member bills that stake out positions to the left of the executive.

Looking at the other committees, whose spatial parameters we have estimated, we find that the estimated parameters for the Education and Labor

committees resemble the parameters for the Constitution committee. In each case, the Senate committee is to the “right” of its Chamber of Deputies counterpart. In the case of the Labor Committee the gap is smaller than for the constitution committee, while the estimated gap between Senate and Deputies Education committees is even larger than it is for the two Constitution committees. Both of these committees deal with ideologically charged agendas. Policies towards labor have divided the right and the left throughout the world since the dawn of the industrial revolution. Moreover, much of the education committee’s agenda actually consists of labor issues having to do with working conditions for teachers, while that committee also deals with the highly charged issue of government funded school vouchers Londregan (2000) chs.5 & 6. The spatial effects we estimate in conjunction with these committees may correspond to ideological motivations in the allocation of scarce time across bills that compete for committees’ attention.

The Government committee, which deals with bills governing the internal management of the bureaucracy, does not exhibit spatial effects, the preference parameters for the Senate and Deputies government committees are statistically insignificantly different from one another, with the Deputies committee scaling just a bit to the left of the Deputies Constitution committee. It may be that both committees are dominated by special interest legislators, or it may be that the agenda facing them is simply not ideologically charged.

Most puzzling from our perspective are the Transportation committees, where the committee in the Chamber of Deputies scales to the *right* of its Senate counterpart. Moreover, the spatial parameters are statistically significantly different from zero, and from one another. While there are a variety of possible explanations for this, we suspect that it may be due to the presence of high demand legislators on the Deputies committee seeking “pork” for their districts in the form of bridges, roads and port facilities, while the

government wants to contain costs, and has pursued an agenda of privatization of port facilities, and of building toll roads using private concessions. Perhaps conflicts within the Concertación about this strategy have boiled over into public in the deliberations (and dilatory ruminations) of this Chamber of Deputies committee. Clearly more research on this question is needed.

5 Conclusion

We present a technique for measuring spatial effects in the context of duration data. One might expect to observe such effects in a legislative setting if committees and legislative chambers reacted to proposals in part on the basis of the compatibility of the ideological content of the proposals with their own belief systems. We apply our technique to data on the speed with which bills progressed through Committees in the Congress of Chile, and uncover evidence consistent with the presence of spatial effects on the pace of legislation, even after we correct for the special powers of the executive to insist on speedy consideration of presidential bills. Further application of our technique may help to illuminate spatial effects in other legislative and administrative settings where ideology shapes preferences and in which delay is a strategic variable.

Table One: Parameter Estimates
 Spatial Duration Model
 First Committee Report

Spatial Parameters			
Proposer	$\hat{\gamma}$	$\hat{Sd}(\hat{\gamma})$	t-ratio
Executive	0.00	...	...
Alianza	3.24	0.22	15.02
Both	3.59	0.22	16.44
Concertación	2.14	0.20	10.60
Committee	$\hat{\lambda}$	$\hat{Sd}(\hat{\lambda})$	t-ratio
Constitution (C. of Deputies)	0.00	...	...
Constitution (Senate)	1.00	...	...
Education (C. Of Deputies)	0.09	0.04	2.16
Education (Senate)	1.36	0.03	43.79
Government (C. of Deputies)	-0.15	0.06	-2.47
Government (Senate)	-0.17	0.12	-1.38
Labor (C. of Deputies)	0.09	0.05	1.99
Labor (Senate)	0.68	0.05	13.29
Transportation (C. of Deputies)	1.36	0.03	43.79
Transportation (Senate)	0.68	0.07	9.37
Non-Spatial Parameters			
Proposer	$\hat{\alpha}$	$\hat{Sd}(\hat{\alpha})$	t-ratio
Executive Proposal	0.00	...	...
Alianza	-5.40	0.81	-6.65
Bipartisan Proposal	-4.50	0.89	-5.08
Concertación Proposal	-4.64	0.54	-8.57
Committee	$\hat{\alpha}$	$\hat{Sd}(\hat{\alpha})$	t-ratio
Constitution (C. of Deputies)	0.00	...	...
Constitution (Senate)	-0.61	0.22	-2.82
Education (C. Of Deputies)	1.19	0.16	7.33
Education (Senate)	0.01	0.28	0.03
Government (C. of Deputies)	0.32	0.20	1.61
Government (Senate)	1.86	0.37	5.06
Labor (C. of Deputies)	1.10	0.17	6.26
Labor (Senate)	1.35	0.26	5.24
Transportation (C. of Deputies)	0.95	0.15	6.39
Transportation (Senate)	1.35	0.26	5.24
Ancillary Parameters			
Parameter	estimate	Std Dev	t-ratio
ρ	-6.28	0.16	-39.13
κ	0.47	0.0001	4821.13

Number of Bills: 1370

$\ln(\text{Lik}) = -4127.51.$

References

- Aninat, Cristóbal, John Londregan, Patricio Navia and Joaquín Vial. 2004. Political Institutions, Policymaking Processes, and Policy Outcomes in Chile. Mimeo: Research Department, Inter-American Development Bank.
- Berndt, E.K., B. Hall, R.E. Hall and J.A. Hausman. 1974. "Estimation and Inference in Non-linear Structural Models." Annals of Economic and Social Measurement 3:653–65.
- Cox, D.R. and D. Oakes. 1984. Analysis of Survival Data. New York: Chapman & Hall.
- Huber, John. 1992. "Restrictive Legislative Procedures in France and the United States." American Political Science Review 86:675–687.
- Londregan, John B. 2000. Legislative Institutions and Ideology in Chile's Democratic Transition. New York: Cambridge University Press.
- Poole, Keith T. and Howard Rosenthal. 1997. Congress: A Political-Economic History of Roll Call Voting. New York: Oxford.
- Rothenberg, Thomas J. 1971. "Identification in Parametric Models." Econometrica 39:577–91.
- Tsebelis, George and Jeannette Money. 1997. Bicameralism. New York: Cambridge University Press.
- Urzúa, Germán. 1992. Historia Política de Chile y su Evolución Electoral. Santiago de Chile: Editorial Jurídica de Chile.
- Wawro, Gregory and Eric Schickler. 2004. Redoubtable Weapon: Obstruction and Lawmaking in the United States Senate. unpublished manuscript.