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The Strategic Timing of Position Taking in Congress: A Study of the North American Free Trade Agreement

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A critical element of decision making is the timing of choices political actors make; often when a decision is made is as critical as the decision itself. We posit a dynamic model of strategic position announcement based on signaling theories of legislative politics. We suggest that members who receive clear signals from constituents, interest groups, and policy leaders will announce their positions earlier. Those with conflicting signals will seek more information, delaying their announcement. We test several expectations by examining data on when members of the House of Representatives announced their positions on the North American Free Trade Agreement. We also contrast the timing model with a vote model, and find that there are meaningful differences between the factors influencing the timing of position announcements and vote choice. Our research allows analysts to interpret the process leading up to the House action and the end state of that process.

The countless strategic calculations of political actors necessarily involve timing, which is an inherently dynamic process. The more momentous the decision, the more important the issues of timing are likely to be. For example, it is widely understood that the timing of elections is critical to the ability of a ruling party to maintain its majority status (Alt and King 1994, King et al. 1990, Warwick 1992). Presidents time major speeches and trips so as best to influence their chances for reelection (Brace and Hinckley 1993). Similarly, justices of the Supreme Court (Hagle 1993), as well as judges of the U.S. Courts of Appeals (Spriggs and Wahlbeck 1995) and U.S. District Courts (Barrow and Zuk 1990) have been shown to time their retirement so as to increase the odds of a like-minded successor being appointed.

Timing is also important in the U.S. Congress, as a few examples illustrate. When a vote is taken can mean the difference between passage and failure, a quick and decisive position announcement by an influential member can affect the vote decisions of many of his or her colleagues, and the timing of critical announcements

during a campaign can mean the difference between election and defeat. As a result, strategic calculations, such as voting decisions, have both cross-sectional and temporal dimensions. But while almost all politics is dynamic, much political analysis is static. Examinations of congressional voting behavior, for example, have failed to focus on the matter of timing.

We use duration analysis, specifically Cox's (1972) proportional hazards model, to illustrate the possibilities of dynamic analysis. We examine the U.S. House vote on the North American Free Trade Agreement (NAFTA) Implementation Act (H.R. 3450) of November 17, 1993, and the timing of members' decisions on that vote. It has been called "the most important vote on Capitol Hill since the Berlin Wall came down," and it "gave President Clinton the most significant policy success of his first year" in office (Frenzel 1994, 3). The NAFTA debate figured prominently in media broadcasts before its implementing legislation was to be proposed to the House, and members of Congress announced their vote intentions as early as 15 months beforehand. The strong pressures coming from constituencies and interest groups, coupled with the overall salience of NAFTA in national politics, make it appropriate for analyzing the importance of timing in political decision making.

Our primary objective is to develop a dynamic model of the strategic timing of position taking by members of the U.S. Congress. In so doing, we draw upon the roll-call literature and, more specifically, Krehbiel's (1991) use of signaling models. Because position taking reflects legislators' desires both as signal senders and receivers, examining their behavior over time provides both a clearer indication of the effect of such signals on congressional behavior and a more complete picture of legislative decision making. Our model allows analysts to interpret both the process leading up to the House action and the end state of that process, and it permits comparisons between the determinants of two conceptually different aspects of voting.

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STRATEGIC TIMING

Studies of congressional decision making have focused largely on cross-sectional analyses of roll-call votes, ignoring the timing dimension in legislative formulation (Baron 1990, Lindsay 1991). Even relatively sophisticated models of roll-call voting have not moved us beyond focusing on the end of the legislative process (see, e.g., Bartels 1991). While such research provides a wealth of useful information about decision making in Congress, a serious problem is that "roll call votes are not a random sample of Congressional decisions" (VanDoren 1990, 311). Studying strategic position taking and the timing of voting decisions begins to address problems of a lack of randomness by not focusing strictly on the end of the process, that is, the roll-call vote. Members of Congress clearly make voting decisions at various points in the legislative process. Attention to timing thus adds information, specifically sequence, to such analyses. In addition, the inclusion of the timing dimension more closely approximates members' strategic considerations and therefore provides a more complete picture of legislative voting behavior.

Legislative signaling theory offers a solid basis on which to draw out our predictions for the strategic timing of position announcements. Krehbiel (1991) points out that although signaling models are relatively new to political science, the behavior that they characterize has been described for a long time. The tie between signaling models and traditional descriptions of voting behavior is straightforward. Both are based on the premise that "legislators need information about policy choices they must confront but may not understand. Therefore, legislators devise strategies to cope with uncertainty. Taking cues from other, relatively informed legislators is conceptually the same as receiving signals" (p. 70). Of the many roll-call models in the literature, the cue-taking models used by Kingdon (1989) and Matthews and Stimson (1975) are the most closely related to signaling models. Krehbiel (1991, 70) also points out that Buchanan et al. (1960) describe members as judging alternatives in light of their own or their constituents' values.

This dynamic process of sending and receiving signals among representatives and their constituents and colleagues occurs during the weeks and months preceding the final vote. Legislators engaged in this process are concerned not only with *how* they vote but also with *when* they announce their position on an issue. Like the vote itself, the strategic timing of a position announcement is important because it can either facilitate or hinder a member's pursuit of electoral and policy goals.¹ In other words, there are potential costs and benefits of making position announcements earlier or later in the debate on a particular legislative item. A member will weigh the costs and benefits of the announcement timing in light of the degree of consensus among the signals s/he receives and time the position announcement accordingly.

From a member's perspective, early decisions may

help facilitate goals. By announcing a position early in the debate, the member lets constituents or interest groups know that s/he recognizes their importance. This is a validation for those who support the position because they see that the representative takes their preference seriously. Such recognition may enhance electoral support in the future. Early position announcements can mobilize favorable constituency elements. The member's early position taking facilitates an electoral commitment to the member. Also, an early announcement may enhance the role of a policy entrepreneur. Members who are willing to enter the fray earlier may have a greater opportunity to influence the development of the legislation. The announcement may come with stipulations, but by getting out in front of an issue, members signal their intention to participate in the debate.² In addition, certain institutional positions, such as relevant committee membership, may facilitate participation. By serving on the committee of jurisdiction, members have the opportunity to consider legislation formally earlier in the process than do those who do not serve on the committee. Finally, early announcements may enhance a member's chance of influencing others, which facilitates the goal of achieving intra-Washington influence and, therefore, making good policy. By announcing early, members provide cues for others to follow. If a member who wishes to lead on an issue waits too long to take a position, then the pool of legislators to be influenced diminishes as other members announce their position.

Early announcements are not without potential costs, however. The electoral benefits of early position taking depend on a member's ability to read preferences accurately. If a member chooses the "wrong" position in terms of constituency or interest group preferences, then s/he has only two options. First, s/he may change position, which is a costly endeavor. Those who support the position the member deserted are certain to be unhappy. At the same time, supporters of the new position, while pleased with the decision, will be somewhat skeptical about the member's commitment. In addition, a position change leaves the member open to charges of "flip-flopping," an unpopular label (Fenno 1990). Second, the representative may stick with the original position as announced. In this case, s/he avoids appearing indecisive but may suffer severe electoral consequences because s/he alienates an important segment of the constituency. This suggests a second possible cost to early position taking: Just as early announcements may mobilize groups favorable to

¹ For a discussion of member goals, see Kingdon (1989).

² Fenno (1990) argues that members may not make an early commitment in order to preserve their flexibility in the policy development process. By keeping their options open, they remain a part of the negotiating process. This interpretation does not require a member to withhold an early position announcement, however. Instead, to be part of the negotiations, actors must have at least an initial preference. Negotiation assumes people with opposing viewpoints work to find alternatives that meet the minimal requirements of both sides. It is inadvisable to assume that those who wish to participate in policy development will enter the debate with no announced position. Instead, they are likely to enter the debate with a starting preference while signaling their willingness to make some concessions.

the position, they also may mobilize groups who oppose the position. Magnifying this potential cost is the likelihood that opposition groups can be more damaging to the member's electoral fortunes than supporting groups can be helpful (Fiorina 1975).

Furthermore, late position announcements may have some potential benefits. Most important, if representatives perceive that the competing constituent interests in their district are closely matched, then late announcements give them time to collect more information about the electoral and policy ramifications of their choice. Members who wait to take a position also may receive side benefits from the president or legislative leaders in exchange for their vote.

The costs of late announcements mirror the benefits of early position taking. By failing to send a validating signal to their constituents, members who wait to announce their vote intention may alienate (rather than mobilize) otherwise supportive groups, resulting in a loss of electoral enthusiasm or even support. Members may lose an opportunity to participate in the formulation of policy or to influence other members. As a latecomer to the fray, their credibility on the issue may be diminished (Fenno 1990). Finally, in a close vote, unwanted attention may be focused on a member, especially when the vote ultimately cast is not popular.

The cost-benefit calculus that drives the timing of position taking thus hinges on the degree to which the different signals are both strong and unambiguous. As suggested by Kingdon (1989), the strength of a signal is largely a function of an issue's salience to the member's constituency. High-salience issues, those in which the constituency has a vital interest, will send strong signals to the member about expectations for his or her vote. In contrast, low-salience issues make it more difficult for a member to obtain information about constituent preferences. Thus, issue salience has a direct bearing on the strength (albeit not necessarily the clarity) of constituency signal a member receives.³

In addition to the strength of signal, a member also must consider the signal's content; specifically, whether constituents are unified or divided on the issue at hand. Thus, when considering constituency interest, a member may perceive one of two possible signals. First, there may be a clear choice that coincides with strong constituent interests; we expect this member to announce early.⁴ S/he has no doubt about which position to take and thus has no need to collect more information on the proper course of action. By taking a

position early, the member also sends a signal to the constituency about commitment to their position. Second, the member may perceive mixed signals about which choice more closely coincides with constituent interests. Relatively balanced interests within the district make it difficult to identify the most beneficial position. Under such circumstances, a member will wish to collect more information from both constituents and colleagues before finalizing a decision, making a delay in position taking attractive and even necessary.

In summary, when the signals are compatible, we expect members to take a position early. Under these circumstances, the benefits of an early announcement are clear, and the costs are minimized. In addition, because the wishes of constituents are unambiguous, a member may reap the advantages—ability to influence both the content of the legislation and the decisions of other members—without any of the associated costs. In game-theoretic terms, the representative can serve as a signal *sender*, both to constituents and to other legislators. If constituency demands are ambiguous or mixed, or if those demands conflict with the member's conception of good policy, then we expect members to take a position later in the process. Uncertainty about the correct choice means members will take longer to gather information and weigh the severity of the costs incurred when a position is taken. Such members are signal *receivers*, for in taking a position they will inevitably alienate important constituency segments and interest groups or betray their own sense of good policy.

NAFTA POLITICS

The vote on NAFTA is used to clarify and illustrate the model.⁵ Quinones (1994) points out that NAFTA is by far the most comprehensive of all free trade agreements considered by Congress. Its main thrust was to eliminate tariffs on goods sold and produced in North America. President Clinton argued that the outcome of the vote would define the credibility of the United States in all subsequent trade negotiations, including the Uruguay Round of the General Agreement on Tariffs and Trade (GATT). Such rhetoric raised the stakes beyond NAFTA itself.

Much of the debate appeared to pit members who favored free trade against those who supported organized labor. The bulk of the evidence suggested that NAFTA would result in a net gain of employment in the long run, but both sides agreed that short-term adjustments would result in a loss of jobs in some industries (Quinones 1994). In addition, environmentalists feared industry would take advantage of less rigorous pollution regulations in Mexico.

The politics of NAFTA increased the salience of the issue. President Clinton campaigned as a "new" Democrat, and in facing off against organized labor, he could establish credibility as someone willing to move beyond his party's traditional coalition. Another polit-

³ Sinclair (1982, 12) concurs; if there is opinion (or signal) conflict, "the member's voting behavior should depend upon the saliency of the issue. If the issue is highly salient to the reelection constituency, she or he should vote in accordance with this segment's opinions. Although the representative needs contributions and campaign workers, votes win elections. If, however, the issue is salient only to the supportive elite, one would expect their opinions to be expressed in the member's vote. . . . The level of party cohesion, then, is determined by whether members of a party are receiving congruent or conflicting constituency signals."

⁴ If constituency interests are clearly one way or the other, it is not reasonable to expect a member to hold out for concessions, since such behavior, in the face of constituency preferences, would not be credible.

⁵ This section draws on Quinones (1994). See also Keech and Pak (1995) and Uslaner (1995).

ical factor bringing NAFTA to the fore was the role of Ross Perot. After his strong showing in the 1992 presidential election, Perot attempted to use NAFTA as a vehicle to flex his political muscle and show that he and his followers would be a force in the 1994 elections. While he was less than successful in this attempt, due partly to his poor performance in a debate on the agreement with Vice President Gore, Perot's emphasis on the issue helped keep it in the news and on people's mind. Members of Congress and government officials participated in and carefully monitored the NAFTA debate.

All these factors led us to choose NAFTA as a suitable vote for the analysis.⁶ We agree with Krehbiel's (1996) clearly articulated argument about the value of case-specific analyses (like NAFTA) to improve legislative research beyond the case at hand. In particular, case studies are not substitutes for large-*N* studies but can be "opportunistic complements" of them (Krehbiel 1996, 3, emphasis in original). Because of NAFTA's high salience, all strategic calculations, including timing, should have received more consideration by members of Congress. If our theory and empirical evidence do not generally hold for the NAFTA case, then the model is unlikely to be useful in exploring other issues.

A MODEL OF THE TIMING OF POSITION ANNOUNCEMENTS AND VOTING

We analyze two aspects of House decision making on NAFTA: the final roll-call vote for implementation and the timing of members' announcements of their vote intention on the implementation legislation.⁷ The variables and their hypothesized effects on both the vote and the timing of announcements are explained below. The discussion of each independent variable clarifies why the determinants for the two models are different.

Constituency Factors

Constituency influence involves complicated measurement issues and has been one of the most vexing problems in the voting literature (Kuklinski 1979). How should constituency influence be considered? Is it a matter of policy preferences, as the congruence

literature suggests, or of the distributive benefits a constituency might receive? The preceding discussion of NAFTA indicates at least one surrogate for constituency influence: labor union membership. A high rate of unionization in a district suggests opposition to NAFTA. The expected effect of union membership on timing, however, is best conceptualized in terms of the homogeneity of the district. Thus, we expect that representatives with either high or low unionization in their district received clear signals about NAFTA and thus were likely to make their vote decision earlier than colleagues with mixed union representation in their district. We expect the latter, without a clear signal regarding their optimal position on NAFTA, to hedge their position and delay their announcement. *Union Membership* is coded as the percentage of all private-sector workers who belong to a union in the representative's district.⁸

Several other factors also measure constituency influence. First, there is the geographic location of the district. Areas closest to the *Mexican Border* had much to gain from the fall of trade barriers between the two countries, so members from border districts should be more likely to vote in favor of NAFTA.⁹ On the question of timing, the salience of NAFTA for such districts should increase the strength of signal a member receives from constituents. As a result, border districts should have a positive effect on the timing of the vote decision, meaning that representatives of such districts would announce earlier than nonborder colleagues.

Second, because Ross Perot was a spokesperson for anti-NAFTA forces, the strength of his support in the 1992 election may have signaled representatives about the degree to which their constituency would support NAFTA. Thus, the model includes a measure of Perot's showing in 1992 (*Perot Vote*). We expect support for Perot to have a negative effect on a member's vote

⁸ These data were built by merging disaggregated union membership data at the Metropolitan Statistical Area level with the Bureau of the Census Consolidated Federal Funds Report Geographic Reference File and subsequently mapping to each of the 435 post-1990 Census congressional districts (see Appendix B).

⁹ We did not include a variable for districts bordering Canada because NAFTA made only minor changes to the U.S.-Canada Free Trade Agreement (*Congressional Quarterly Almanac* 1993, 171). An alternative operationalization of the variable could include all districts in the states bordering Mexico. Comparing the results obtained using states versus districts bordering Mexico, we find NAFTA to be more salient in the districts than in the states. Members from border districts were among the first to announce their position. When we consider these different operationalizations in the vote choice model, we find that while representing a border district does not help explain a member's vote, representing a district within a border state does. This may be due to the signals received from others in the state delegation, which may influence member voting behavior (Kingdon 1989). Since our focus is on the timing of position announcements for high-salience issues, we give the results for border districts, which more clearly represent this situation. The alternative results can be found with the archived data and statistical output. The percentage of Mexican American citizens within the district (not the percentage Hispanic), although appealing as an indicator of NAFTA's salience, is impractical, since we were unable to obtain data that differentiated the Hispanic population by national origin at the congressional district level.

⁶ Although NAFTA was unique in some ways, in its journey through the legislative process it resembles other omnibus bills, on which Congress increasingly relies as vehicles for legislating. One potentially significant way in which NAFTA differed from other legislation was the fast-track procedures used, which limit the time for consideration and preclude amendment or filibustering. The fast track undoubtedly heightened members' awareness of the importance of timing, since it assured that a vote would be forthcoming soon after the implementation bill was introduced. The fast track also affects our theoretical expectations for the effect of committee membership on timing, since committees have limited ability to influence the final form of legislation under that procedure.

⁷ Several authors have considered the factors affecting how a House member voted on NAFTA. See Quinones (1994), Uslaner (1995), or Wink, Livingston, and Garand (1996). While the latter incorporate similar theoretical foundations by discussing the role of cross-pressures in the decision-making process, none of these studies examines the timing aspect in decision making.

choice. We also anticipate that in districts where Perot did very well or very badly in 1992 the member would receive a clear signal on the potential costs of supporting or opposing the bill, while in those where Perot's support was somewhere in the middle the signal would be unclear. So the effect on the timing of a member's decision is like that of union membership: Low or high Perot support implies an earlier announcement, while median levels indicate delay.

Finally, the socioeconomic condition of a district may have affected the degree to which constituents favored NAFTA. The threat of job loss due to NAFTA was greatest for low-wage workers. Consequently, members from districts with lower household incomes are expected to be less supportive of the bill. *Household Income* is measured as the district's median figure divided by \$10,000. With respect to timing, as for previous variables, high or low values for household income are expected to compel earlier announcements, and values in the middle range to cause delay in taking a position.

Interest Group Factors

We examine two factors associated with interest group influence, campaign donations from corporate political action committees (*Corporate Contributions*) and contributions from labor-related PACs (*Labor Contributions*). We expect members with a large percentage of total contributions from business sources to favor the legislation, while representatives with a large proportion from labor sources should be more likely to vote against NAFTA. We also expect members who receive a large proportion of donations from either source to announce their position earlier, reflecting a clear signal. By doing so, these members would solidify their standing with a group supportive in past elections, or at least avoid alienating that group. Press reports indicate that some labor organizations threatened to withhold support for members in future elections if they voted for NAFTA, demonstrating the electoral ramifications of the issue (Galvin 1993; see also Quinones 1994).

Individual Factors

Party Affiliation is often considered an important cue for members when deciding their position on an issue. In the NAFTA case, the effect is complicated. Party was a fairly direct cue for Republicans, whose congressional leadership and party professionals supported the agreement, which had been negotiated by the Bush administration.¹⁰ Thus, the effect of the party variable for Republicans is positive for the vote model. There was not the same degree of consensus among Democrats. While the president favored the agreement, the congressional leadership was divided.¹¹ This lack of

consensus and the Democrats' historical alliance with labor likely meant that party leaders who supported NAFTA had less leverage over members. Consequently, although we include this indicator in our analysis of the vote, we have no strong expectation about the relationship between party and vote choice. Likewise, we have no strong expectation with respect to the influence of political party on timing of House members' decisions. Rank-and-file party members in Congress do not have the same likelihood of swaying colleagues as do those with institutional stature or acknowledged expertise. Without the motivation of influencing others and absent other factors, such as ideology or constituency factors, there is no reason to expect one party's rank-and-filers to announce earlier than those of the other; so party is excluded from the timing analysis.¹²

Ideology is captured by the vote rating given to the House member by the Chamber of Commerce in 1993.¹³ Because NAFTA clearly demonstrated a labor-management division, the Chamber of Commerce or AFL-CIO measure is likely to be the most appropriate of the numerous voting scores available. This measure was purged of the NAFTA vote, which was used in the original calculations of the 1993 scores. A positive relationship between ideology and support for NAFTA is expected.

With regard to timing, we expect that the most ideological members will declare their position early. Those with extreme ideologies have strong policy preferences, which would suggest early action. Since ideology is a proxy for members' policy preferences, which may conflict with constituents' policy preferences, ideology and constituency factors must be considered together.¹⁴ Several authors demonstrate the influence of ideology on voting *after* controlling for constituency interests (Kalt and Zupan 1990, Kau and Rubin 1978, Sinclair 1982). This also suggests that the effects of union membership and household income need to be considered simultaneously with the ideological predisposition of the member to capture the cross-pressures representatives experience.

If a district has an extraordinarily high or low percentage of constituents who belong to a union, the member receives a clear voting signal and will, *ceteris paribus*, declare a position early; this suggests a qua-

Leader Richard Gephardt (D-MO) and Majority Whip David Bonior (D-MI) were opponents; Bonior was a leader of the anti-NAFTA forces in Congress.

¹² Inclusion of a party affiliation variable in the model of timing results in a nonsignificant coefficient. The only difference in the other variables is that the effect of labor contributions decreases in significance. This is probably due to colinearity, since labor tends to contribute more to Democrats than Republicans.

¹³ Using other voting scores, such as those calculated by the AFL-CIO or ADA, does not alter the results. A graph of ideology by timing yields a U-shape figure, indicating that members with more extreme preferences announce earlier than do those who are more moderate.

¹⁴ Household income and union membership are surrogates for constituent ideology; thus, we consider these variables in tandem with member ideology. In contrast, if Perot did poorly in a district, there is no clear indication about whether the constituency is pro- or anti-NAFTA.

¹⁰ Some conservatives, such as Duncan Hunter (R-CA) and Helen Delich Bentley (R-MD), urged colleagues to vote "no," saying it was no longer a Republican-Bush initiative. This suggests that an ideological measure may be particularly important.

¹¹ Speaker Thomas Foley (D-WA) was a supporter, while Majority

TABLE 1. Hypothesized Effects on Direction and Timing and Summary Statistics

Variable	Hypothesized Effect on		Mean	Standard Deviation	Min.	Max.
	Direction	Timing ^a				
Dependent Variables						
Vote			0.54	0.50	0.00	1.00
Timing of Position Taking			402.86	70.45	1.00	463.00
Constituency Factors						
Union Membership	-	+ if high or low	0.12	0.06	0.02	0.32
Mexican Border	+	+	0.03	0.16	0.00	1.00
Perot Vote	-	+ if high or low	0.19	0.06	0.03	0.33
Household Income	+	+ if high or low	3.07	0.84	1.45	5.72
Interest Group Factors						
Corporate Contributions	+	+	0.15	0.10	0.00	0.42
Labor Contributions	-	+	0.10	0.11	0.00	0.48
Institutional Factors						
NAFTA Committee	Not in model	+	0.30	0.46	0.00	1.00
Democratic Leadership	Not in model	+/-	0.05	0.22	0.00	1.00
Republican Leadership	Not in model	+	0.04	0.20	0.00	1.00
Individual Factors						
Party Affiliation	+/-	Not in model	0.59	0.49	0.00	1.00
Ideology	+	+ ^b	0.44	0.50	0.00	1.00

^a This is the hypothesized effect on the hazard rate; thus, "+" indicates taking a position earlier.

^b See discussion in text about the interaction between ideology and constituency factors.

dratic relationship between timing and union membership. Yet, the signals themselves are in opposite directions; high unionization gives a signal to oppose NAFTA, while low unionization sends a signal to support it. As a result, once ideology interacts with these variables, the form of the relationship changes. Liberal members with high unionization in their district will declare their position early, while liberals with low unionization in their district receive conflicting signals, that is, their constituency factors suggest voting for NAFTA, while their ideological and policy predispositions suggest voting against it, and thus delaying their announcement. The process for conservatives is similar: Those from low-union districts receive a constituency signal consistent with their personal preference, while those from high-union districts find their preference at odds with that of constituents. The same relationship also holds for household income in the district: Low-income values for liberal members and high ones for conservatives are compatible signals and are consistent with early position taking, while the reverse circumstances indicate contradictory forces that prompt members to delay their decision.

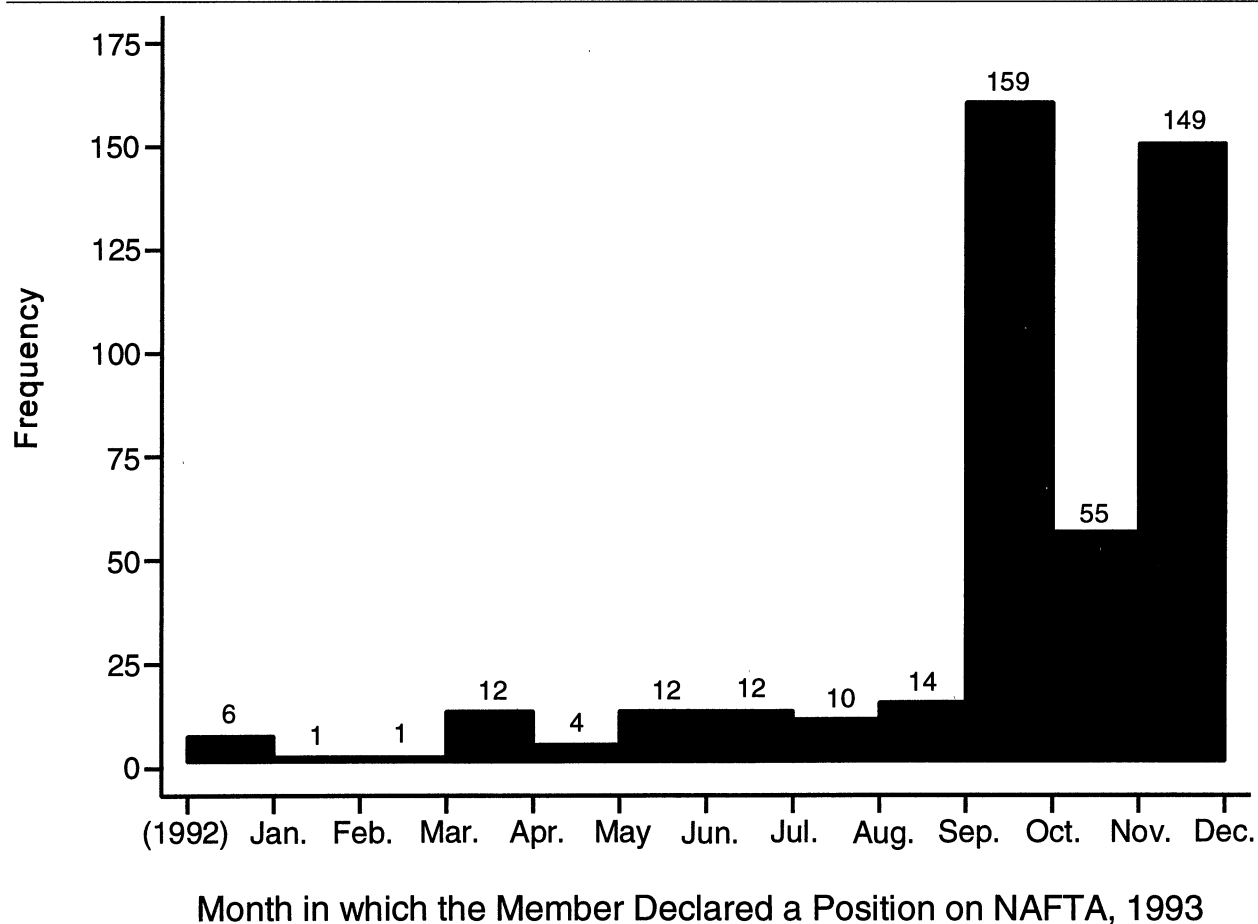
Institutional Factors

We posit that institutional factors may help House members achieve policy goals. Specifically, a powerful institutional position may help a member serve as a cue-giver and therefore influence policy. Yet, members of all political persuasions occupy leadership and committee positions, and we do not expect institutional factors to affect how a member votes; thus, the institutional variables are excluded from the vote model. We do expect institutional position to influence the timing of the announcement. To be an effective cue-giver, a leader needs to announce early. Because of disagreement in the Democratic leadership regarding NAFTA,

we included variables that represent the *Republican Leadership* and *Democratic Leadership*. In addition, a *Committee Membership* variable was included in the timing model to test whether members of committees that took action on NAFTA also announced their decision early, since they could attempt to act as cue-givers based on their institutional position of committee expertise.¹⁵

Table 1 summarizes how the independent variables are expected to influence both direction and timing of the vote intention and gives summary statistics for all variables. (Appendix A provides detailed information about the coding of variables.) The table highlights the different expectations for the two models. It is the exception rather than the rule for the hypothesized effects to be the same. Both high and low values on union membership, Perot vote, and household income are expected to have positive effects in the timing model, whereas no independent variables are expected to have this nonlinear relationship in the vote model. The timing model also contains hypothesized interactions with the ideology variable. In the vote model, PAC contributions from corporations have a positive effect and those from labor, a negative effect; in the timing model, contributions are expected to have a positive effect regardless of the source. Institutional

¹⁵ For a more general model, committee action is important, but we recognize there is unlikely to be an effect because of fast-track procedures (see note 6). The NAFTA committee variable was coded 1 for all members on Ways and Means, Banking, and Energy and Commerce. All three committees took action on NAFTA. Alternative specifications were considered, including variables indicating only those members of a committee that made a recommendation (Ways and Means and Banking), members of a committee that had a recorded vote (Ways and Means), and members of any of the eight committees to which the legislation was referred. In no instance was the direction and statistical significance of the committee variable, the other variable effects, or the overall interpretation of the model affected.

FIGURE 1. Timing of Position Taking on NAFTA

factors, such as being part of the Republican leadership, illustrate the hypothesized effect of being a cue-giver to other members of Congress, which is examined in the dynamic timing model.

A DURATION MODEL OF THE TIMING OF POSITION ANNOUNCEMENTS

To test our model of the strategic timing of position taking on NAFTA, data were collected on the position taken and timing of the announcement for all 435 House members of the 103d Congress.¹⁶ Figure 1

¹⁶ The announcement date is that on which any news source reported a member had indicated a willingness to support or oppose the legislation, that is, s/he was no longer undecided. Data on timing, to be adequate to the task, are collected at substantial cost. They were gathered through electronic searches on each member for the period prior to the vote using LEXIS/NEXIS. Not only did we search the usual sources, such as major national newspapers, weekly political journals, trade publications, local newspapers, and other periodicals, but also we searched congressional hearings, both on NAFTA itself and others in which the agreement was mentioned, and members' statements from the House floor. Finally, we incorporated data on positions as reported in six polls of members' offices conducted before the vote. We recorded the position and the date on which it was taken. Because of the infrequent votes by the Speaker of the House, a number of groups (including the Chamber of Commerce, which we used) did not calculate scores for Thomas Foley (D-WA),

shows the distribution of the timing data aggregated by month.

The variable indicating the time at which a House member took a position on NAFTA is coded as the number of days after August 11, 1992, that the member first took either a "yes" or "no" position.¹⁷ By selecting that date, we set the earliest recorded stand by a member to a duration of 1 and eliminated concerns with left censoring in the data.¹⁸ Members who did not announce prior to the day of the vote are treated as announcing on that day and given a duration of 463.¹⁹

who is excluded here. In addition, there is no vote score for Vernon Ehlers (R-MI) because he replaced Paul Henry, who died in office. Our analyses thus are based on an *N* of 433.

¹⁷ Representative Peter Visclosky (D-IN) announced his opposition on August 12, 1992.

¹⁸ Censoring occurs when there is incomplete information about the duration of the variable in a particular state due to a limited observation period (Yamaguchi 1991, 3). In our case, observations go from the "state" of undecided to decided. If we started coding data from January 1, 1993, then any member who took a position before that would be left censored because we would not know how long s/he had been in the decided state.

¹⁹ While some members did switch from their initial announced position, the number is not large. Thirty-five cast votes different from their announced position; of these, eleven switched to opposition and twenty-four to support. If we recode the timing and position of those who switched from the date of their initial announcement to the date

TABLE 2. Factors Influencing the Timing of Position Taking by Members of the House of Representatives on the North American Free Trade Agreement

Variable	Estimate	Standard Error	p-value	Percentage Change in the Hazard Rate
Constituency Factors				
Union Membership	3.21	1.19	0.01	3.3
Perot Vote, Percent	-4.91	4.27	0.25	-4.8
Perot Vote, Percent Squared	15.64	11.72	0.18	1.6
Mexican Border	1.84	0.32	0.00	527.9
Household Income	0.01	0.09	0.91	1.0
Interest Group Factors				
Corporate Contributions	-1.44	0.52	0.01	-1.4
Labor Contributions	1.09	0.50	0.03	1.1
Institutional Factors				
NAFTA Committee	0.04	0.11	0.74	3.7
Republican Leadership	0.56	0.26	0.03	74.5
Democratic Leadership	0.08	0.23	0.72	8.6
Individual factors^a				
Interaction Effect of Ideology and Union Membership	-4.39	1.78	0.01	-
Interaction Effect of Ideology and Household Income	0.16	0.13	0.19	-

^a See text for discussion of the interpretation of the interaction effects and their influence on the hazard rate. Log-likelihood = -2233.96; Chi-square (12) = 53.95; $p < .001$; number of cases = 433

Duration analysis is ideally suited for estimating the effects of factors on the time until a position is taken.²⁰ We apply a proportional hazards model developed by Cox (1972) to the timing of House members' positions on NAFTA. The proportional hazards model allows one to estimate the effects of individual characteristics on a duration without having to assume a specific parametric form for the distribution of the time until a position is taken, thus imposing fewer restrictive assumptions than do parametric duration models. For a member of Congress with a vector of characteristics, \mathbf{X} , the proportional hazards model assumes a hazard rate of the form

$$h(t|x) = h_0(t)e^{x\beta}, \quad (1)$$

where $h_0(t)$ is an unspecified baseline hazard function.²¹ The hazard rate may be interpreted as the risk

on which they declared their ultimate position, then the results are substantively the same as shown in tables 2 and 3. While position switching is itself an interesting issue, a different data set and methodological approach are required to examine why these members switched.

²⁰ See Beck (1996); Box-Steffensmeier and Jones (n.d.); Chung, Schmidt, and Witte (1991); and Kiefer (1988) for a review of duration models. In recent years these have been applied to a wide variety of political phenomena, including the duration of wars (Bennett and Stam 1996), regime change (Gasiorowski 1995), and the survival of political leaders (Bueno de Mesquita and Siverson 1995), and to the study of legislative behavior, for example, congressional committee assignments (Katz and Sala 1996), congressional elections (Box-Steffensmeier 1996), and the co-sponsorship of bills (Kessler and Krehbiel 1996).

²¹ The model assumes that the hazard functions of all individuals differ only by a factor of proportionality. That is, each individual's hazard function follows exactly the same pattern over time, but the proportional hazards model puts no restriction on what this pattern can be; that is, it puts no restriction on the $h_0(t)$ curve, which determines the shape of the $h(t|x)$ curve. Thus, the coefficient vector β can be estimated without specifying $h_0(t)$. Also, $h_0(t)$ can itself be

that an event occurs at any point, given that an event has not yet occurred.

The independent variables are included in the proportional hazards model to assess their hypothesized effect on the timing of members' position announcements (see Table 1 for a summary). Perot's share of the total presidential vote in the district, as well as the square of this term, is included to capture the shape of the expected effect. Following Cronbach (1987), we "center" (subtract the mean from) the Perot support variable before squaring and the union membership and household income variables prior to their interaction with ideology. This procedure reduces the possibility of colinearity among the variables and their interactions as well as allows for a more natural interpretation of the estimated baseline hazard.

Results for the timing model are presented in Table 2. Overall fit of the model is good; we may reject the null hypothesis that the coefficients are jointly zero at the .001 level. The coefficients from a hazard rate model indicate the magnitude of the effect and whether a particular variable increases or decreases the hazard

estimated nonparametrically and, thus, with substantial flexibility. The model does have some potential drawbacks. Because it uses only rank-order information on the timing of events, the original Cox model is inestimable in the presence of ties in the data, that is, more than a single observation occurring at the same time. A number of alternative estimation techniques have been suggested for such cases, and we adopt that proposed by Breslow (1974) and Peto (1972). Simulations using Monte Carlo data have shown that the use of the Peto approximation in the presence of ties in failure times may bias results downward (Farewell and Prentice 1980). Thus, our results should, if anything, underestimate the effect of the various covariates on the probability of a member announcing a position on NAFTA. We also ran the analysis as a parametric model, specifically a Weibull model, because of the concern about ties, and the results support the Cox model findings.

rate. An increase means that members with these characteristics are likely to announce position earlier. As is typically the case, the coefficient divided by the standard error indicates whether the effect is statistically significant, and the p -values give the precise probability values. In general, the signs and p -values support the hypotheses laid out in the previous section. Some constituency, interest group, institutional, and individual factors are all statistically significant.

The fourth column of Table 2 shows the percentage change in the hazard rate, which provides an insightful interpretation of the variables. For a dichotomous independent variable, the percentage change in the risk of experiencing the event in question is calculated as:

$$100[e^{(\beta_k*1)} - e^{(\beta_k*0)}]/e^{(\beta_k*0)}. \quad (2)$$

The interpretation for a continuous independent variable is similar:

$$100(e^{[\beta_k*(x+z)]} - e^{(\beta_k*x)})/e^{(\beta_k*x)} \quad (3)$$

for a z unit change in the independent variable, x .

Considering first the statistically significant dichotomous variables, we see that members whose districts border Mexico declared their position earlier than did those from other districts. Specifically, the hazard rate increases by 528%. This means that, at any time, the instantaneous probability of declaring a position if one's district borders Mexico is more than six times that of a comparable nonborder district. This confirms our expectation that early position taking was likely due to the high salience of NAFTA in border districts. Attentive constituents in these areas would be expected to raise the issue earlier than would constituents in other districts.

If the representative is part of the Republican leadership, there is a 74% increase in the hazard rate. The same effect is not seen for Democratic leaders, probably because they split on the issue. The other institutional factor, committee membership, was not statistically significant. As noted above, since NAFTA was considered under fast-track procedures, the typical committee role was changed, and therefore the lack of statistical significance is not surprising.

Our findings indicate that corporate contributions *decrease* the hazard rate by 1.4% for each unit increase (.01 or 1%), while labor contributions *increase* the hazard rate by 1.1% for each unit increase. An increase of one standard deviation in corporate contributions (around 10%) results in a 14% decrease in the hazard rate. In contrast, a similar deviation rise in labor contributions, which is 11%, corresponds to a 12.1% increase in the hazard rate. This means that there is a 12.1% increase in the propensity of a member to declare a position, given that s/he has not yet announced. These contrasting directional effects are likely due to the solidarity of labor opposition to NAFTA, whereas there was some division in corporate support. For example, Roger Milliken, chairman of a large textile corporation, warned against NAFTA: "A Congress dedicated to the survival of this nation's manufacturing base and the standard of living it pro-

vides our people should send the negotiators back to the drawing board" (PR Newswire Association 1992). The corporate dissension appears to have resulted in House members being cross-pressured and therefore delaying their position taking.²²

Finally, we examine the results for the interaction of ideology and the two constituency variables. To interpret these effects, first consider the case of a liberal member, for whom the ideology dummy variable equals zero. In this case, the coefficient and standard error of the unionization variable reported in Table 2 represents the effect of district unionization on the timing of a member's announcement. That effect is positive; a 1% increase in unionization in a liberal's district increases the hazard rate by 3.3%. Contrast this with a conservative member, for whom the ideology dummy variable equals one. Now the unionization coefficient of 3.21 is added to the interaction coefficient of -4.39, yielding a unionization coefficient for conservative members of -1.18. This negative influence reflects cross-pressure from constituency and individual factors for conservatives, hence the negative effect on the hazard rate (and correspondingly later position announcement) for such members. The new standard error is calculated as:

$$\sqrt{\text{var}(\beta_d) + \text{var}(\beta_i) + 2\text{cov}(\beta_d, \beta_i)}, \quad (4)$$

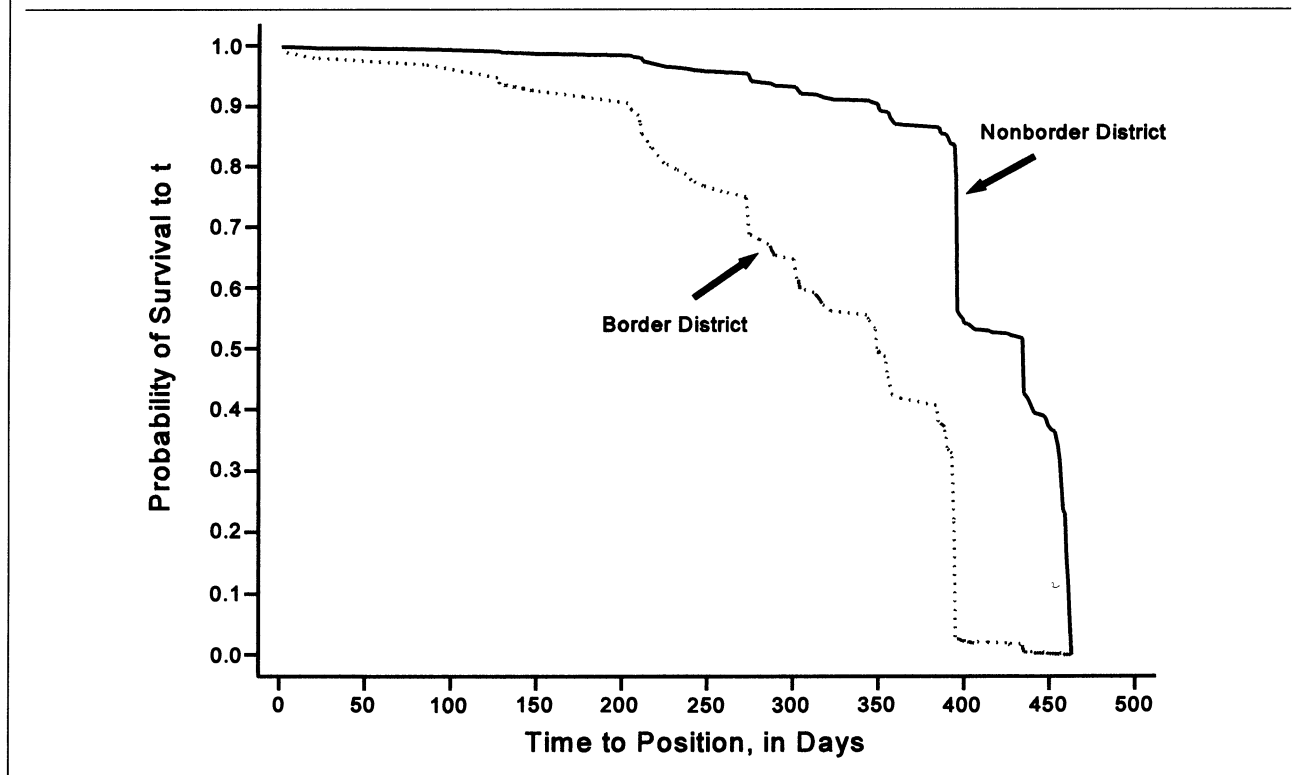
where β_d and β_i are the regression coefficients for the direct effect and the interaction term, respectively (Friedrich 1982, 810).²³ Here, the standard error for the interacted unionization coefficient is 1.37, meaning that although the coefficient is in the expected direction, it is not statistically significant. The interaction itself, however, is still substantively important and should not be removed from the model. Its inclusion allows us to see the differential effect of unionization for liberals and conservatives, that is, a meaningful difference in the influence of organized labor as between ideologically opposed members.

A similar examination of the interaction of household income and ideology reveals that, as district affluence increases, liberal members experience cross-pressures. While the effect for liberals is not statistically differentiable from zero, the coefficient for conservatives is statistically significant at the .05 level, indicating that the latter declare a position substantially earlier as district household income rises. Seen in this light, the lack of effect for liberal members implies that cross-pressures are at work, since a clear signal to take a position appears not to be received.

²² The FEC uses six categories to categorize PACs: corporate, labor, trade/member/health, cooperative, corporate without capital stock, and nonconnected. There were 1,789 corporate PACs and 337 labor PACs in 1993 (Federal Election Commission 1995). It is possible that more refined measures of the interests of PACs, which could be determined using SIC codes, would clarify the sign on corporate contributions.

²³ The ideology variable does not enter the equation separately because Cox's proportional hazards model does not have an intercept; the constant term is absorbed into the baseline hazard rate. If the dummy were entered separately, then the model would contain an intercept when this variable is equal to 1.

FIGURE 2. Estimated Survival Probabilities: Mexican Border and Nonborder Districts



Another way to understand the effect of an independent variable on the timing of position taking is to look at comparative survival functions, which are generated by setting the independent variable of interest at various levels (Teachman and Hayward 1993). The survival function is simply one minus the cumulative distribution function of the duration. The relationship between the survival function and the hazard function is:

$$S(t) = \exp \left[- \int_0^t h(u) du \right]. \quad (5)$$

The survival function represents the cumulative probability that an individual survives, that is, does not take a position, to time t . In the proportional hazards framework used here, the survival function for an individual with covariates X_i can be written as

$$S_i(t) = S_0(t)^{\exp(\beta' X_i)}, \quad (6)$$

where $S_0(t)$ is the baseline survival function defined in equation 5. This clarifies how the set of covariates X_i enters the survival function. For example, comparisons of survival functions for a dichotomous indicator variable (say, D_i) are accomplished by setting the other covariates to the same values, for example, their means, for both values of D_i . The ratio of the survival functions for the two groups $D_i = 0$ and $D_i = 1$ can be written as:

$$\frac{S_i(t)^{\exp(\beta' X_i + \beta_D)}}{S_i(t)^{\exp(\beta' X_i)}} = S_i(t)^{\exp(\beta_D) - 1}. \quad (7)$$

In a similar fashion, we can calculate the influence of a change in a continuous independent variable on the survival function according to equation 7.

We illustrate this approach by contrasting survival functions for congressional districts bordering Mexico with those that do not. The large positive sign for this coefficient reflects higher hazard rates for border districts, which translate into reduced probabilities of survival at any given time. The effect of this variable is illustrated in Figure 2, which shows the substantial difference between the two types of districts. The mean difference in survival probabilities over the period examined is 0.35, a considerable difference in probability terms. This figure illustrates that the importance of the NAFTA issue in border districts was a substantial factor in causing members to announce their position early.

A similar analysis of comparative survival curves for the interaction of a constituency factor (unionization) and a membership factor (ideology) for conservatives and liberals, assuming a district in which percentage of unionization is two standard deviations (about 12%) greater than the national average, reveals that the mean difference between the survival curves is .12. This represents the average difference in the probability of survival between liberal and conservative members in such a district. Recall our hypothesis that, while higher unionization should work in favor of liberals reaching a decision, it will have the opposite effect for conservatives. The estimated survival probabilities for conservatives are higher than for liberals, reflecting the presence of cross-pressures. These result in conserva-

TABLE 3. Factors Influencing the Vote by the House of Representatives on the North American Free Trade Agreement

Variable	Estimate	Standard Error	p-value	Derivative at Means
Constant	0.27	0.33	0.81	
Constituency Factors				
Union Membership	-5.02	1.29	0.00	-1.99
Perot Vote, Percent	0.61	1.16	0.60	0.24
Mexican Border	0.34	0.43	0.43	0.13
Household Income	0.21	0.09	0.02	0.08
Interest Group Factors				
Corporate Contributions	1.94	0.72	0.01	0.77
Labor Contributions	-3.84	0.92	0.00	-1.53
Individual factors				
Ideology	0.08	0.31	0.81	0.03
Party Affiliation	-0.20	0.31	0.51	-0.08

Log-likelihood = -236.29; Chi-Square (8) = 125.16; $p < .001$; number of cases = 433

Actual and Predicted Outcomes				
	Predicted	Actual		Total
		No	Yes	
No	133	133	49	182
Yes	67	67	184	251
Total	200	200	233	433

Model predicted percentage = 73.2; null predicted percentage = 53.8; proportional reduction in error = 42%

tives delaying position taking and in correspondingly greater survival probabilities for such members. Similar effects, albeit in the opposite direction, are observed for liberals and conservatives with regard to district household income.

With the effects on the timing of announcements in mind, we turn to the model of the end of the process, the vote on NAFTA on November 17, 1993. The estimation of the dynamic timing model and the vote model allows contrasts to be drawn between the effects of these two conceptually different processes.

A MODEL OF CONGRESSIONAL VOTING ON NAFTA

Results from our analysis of the House vote on NAFTA are presented in Table 3. The dependent variable is the member's vote on NAFTA, coded 1 for members who supported passage and 0 for those who opposed.²⁴ The overall fit of the probit model is good; many of the individual coefficients are statistically significant, and the log-likelihood ratio statistic indicates rejection of the hypothesis that the coefficients are jointly zero at the .001 level. The model predicts members' votes substantially better than the null, correctly predicts passage, and roughly approximates the actual margin of victory.

Examining the results for the individual variables in the vote model is more familiar and straightforward than in the dynamic timing model. A popular approach for interpretation in a nonlinear model is to compute the partial derivative of the expected (or predicted)

value of the dependent variable with respect to the independent variable of interest.²⁵ Partial derivatives represent the instantaneous effect of a change in the independent variable in question on the dependent variable when the latter is at a preselected level (King 1989). We compute this statistic for each independent variable when all such variables are set at their mean.

Two of the constituency variables are shown to affect a member's vote, unionization and household income. Our measure of the district's unionization has a negative effect on the probability of the member voting for NAFTA. This variable has the strongest overall influence; both the coefficient itself and the partial derivative are substantially larger in absolute magnitude than the others. The median household income in a district has a statistically significant positive influence on the probability that the member would vote for the agreement, which is in keeping with our prior expectation that high-wage workers have more to gain from NAFTA than low-wage workers.

While much was made of Perot's outspoken stance against NAFTA, our results indicate that he had little, if any, direct influence on members' votes or the timing

²⁵ The partial derivative of $E(Y)$ with respect to the independent variable of interest, evaluated with all independent variables set at their mean value, is a useful way to compare coefficients in a nonlinear model. For a probit model, it is computed as $\partial E(Y)/\partial(X_k) = \phi(\beta'X)\beta_k$. Because these values have the same scale factor, they allow a more intuitive interpretation of the relative values of the various coefficients (see Greene 1993). To facilitate interpretation, we calculate these derivatives for all continuous independent variables; for dichotomous regressors, we report the change in probability associated with a change of 0 to 1 in that variable.

²⁴ The final vote on NAFTA was 234 in favor and 200 opposed.

of their announcement.²⁶ Members from districts in which Perot received a high percentage of the 1992 presidential vote were slightly *more* likely to vote for the agreement, although the estimate is too imprecise for confidence in this relationship. One possible explanation is that, while Perot was a vocal opponent of NAFTA, his actual ability to influence Congress was limited by his diffuse support in members' districts.²⁷ This reflected the diverse anti-NAFTA coalition, which included such disparate figures as Patrick Buchanan and Ralph Nader as well as organizations ranging from the AFL-CIO to Greenpeace.

A district's location along the Mexican border does not show a statistically significant effect on a representative's NAFTA vote, in sharp contrast to the border effects on timing. Most likely this difference is due to the potentially mixed effect of NAFTA on these communities. While many believed they would benefit from expanded trade opportunities with Mexico, others were concerned about potential job loss and environmental degradation. The salience of the issue forced members in these districts to take an early position, but the mixed effect meant that neither position consistently carried the day among border region representatives.

Interest group factors, such as contributions from corporate and labor PACs, affected a member's vote in the predicted directions. The relative magnitude of the two coefficients suggests that labor had a greater influence than business. This again may be due to a difference in the clarity of the signals sent. As noted previously, organized labor solidly opposed the agreement, but business opinion was mixed: Some favored the NAFTA as a means of opening new markets and spurring growth, while others doubted the ability of American industries, such as textiles and household glass, to compete with products made in Mexico (Thorbecke 1995). The partial derivative for labor contributions is nearly twice as large as that for corporate donations, indicating a notably stronger influence of this variable. Taken together, the results for the unionization and PAC variables indicate the force of labor opposition to the free-trade pact.

Neither individual factor is statistically significant. The positive direction for the ideology variable indicates that conservatives were more likely to vote in favor. A member's party affiliation had no discernible influence on his or her decision. This lack of partisan

influence reflects the fact that passage was ultimately accomplished by a bipartisan coalition of Republicans and moderate Democrats, with a majority of Democrats (particularly the liberal wing) voting against the agreement.

A consideration of all the factors—constituent, interest group, institutional, and individual—shows that only the first two affected the vote. In contrast, all four sets of factors played a role in the timing of position announcements. This difference points to the potential for increasing our knowledge of the legislative process through methods that account for temporal as well as cross-sectional aspects of decision making.

CONCLUSION

This research extends our understanding of legislative behavior through a model of position taking and the timing of vote announcements. The dynamic timing component adds insight into the strategic behavior of legislators, institutional constraints on members of Congress, and strategies of interest group influence. In terms of congressional voting, and political decision making in general, a number of aspects of this study are significant.

Particularly interesting are our results on cross-pressures or conflict in the signals that members receive. This conflict is more precisely articulated when timing is considered and can only be captured in a dynamic framework. In contrast, models of congressional roll-call voting can only reflect the end of the process, the direction. Our findings are consistent with a signaling-based model of legislative position taking, in which members declare their stand on important issues earlier or later depending on the strength and clarity of signals received from constituents, interest groups, and policy leaders, while reconciling these signals with individual factors, such as ideology. This paper is a notable first step toward more detailed analyses of timing as a political phenomenon.

Timing also enhances understanding of the role of cue-givers in the legislature. Do members who hold what traditionally are considered cue-giving posts actually behave in ways that facilitate the exercise of influence over other members? Do certain institutional roles or responsibilities encourage members to act in certain ways? Does one's place in the institutional framework encourage a member to view the timeline of a bill differently from a member with no institutional responsibility for the legislation? In the case of NAFTA, Republican leaders declared their position significantly earlier than others, making them at least potential cue-givers for the rank-and-file, but this was not true for committee members.

Considering the effects of timing also allows us to discuss the strategic considerations of interest groups, who want the opportunity to make their case to and obtain issue agreement or perhaps advocacy from their district's representative. Timing provides information about the role of advocacy within the institution and its relationship to support from identifiable interests. While we found that interest groups did play a role in

²⁶ The congressional leadership and the media often emphasized the role of President Clinton in the battle over NAFTA, suggesting that his influence was a potent force in the debate. Uslander (1995), for example, argues that presidential contact and previous support for the president had an effect. To examine this contention, we included a variable measuring Clinton's strength in congressional districts but found no evidence of systematic influence. This does not mean that Clinton had none, especially since there is anecdotal evidence that some deal-making occurred. For example, three members from Florida switched their declared position in the final week, crediting their change to an agreement about citrus (*CongressDaily* 1993, 2).

²⁷ Another possible explanation is the geographic pattern of the Perot vote, which was stronger in places such as Maine, Vermont, Montana, and Washington, where not much was at stake in the NAFTA game. Also, Perot did poorly in a number of southern states, where unionization is weak. We thank Martin Wattenberg for pointing this out.

when members announced their decision, a number of questions about that influence remain, such as which members were contacted when, and how; which groups were more influential; and which groups had what effects on timing.

Interesting contrasts were found in the effects of explanatory variables on the conceptually different aspects of timing and voting in the context of NAFTA. In the timing model, the functional form of some explanatory variables is different, interactions are added to capture the effects of cross-pressures, and more factors—constituent, interest group, institutional, and individual—affect the dynamic process.

In summary, we suggest that the study of strategic position taking and the timing of vote decisions is important for several reasons. It adds information about the context and sequence of decision making. The analysis more closely approximates members' strategic considerations and therefore provides a more complete picture of legislative voting behavior than studies which focus solely on outcomes. Finally, in contrast to most of the literature on legislative roll-call voting, which focuses exclusively on the end result, it examines more fully the *process*. Since even basic hypotheses about strategic timing issues in the legislative setting have not been articulated or systematically tested, this research is an important benchmark for future examinations of congressional voting behavior.

APPENDIX A: VARIABLES AND CODING

Dependent Variables

Vote. Representative's vote on H.R. 3450 (NAFTA implementing legislation), cast November 17, 1993. Coded 1 if voted in favor of passage, 0 otherwise.

Timing of Position. Duration variable indicating the number of days after August 11, 1992, until the representative took either a "yes" or a "no" position on NAFTA. "Undecided" and "leaning" positions were not included. This variable includes data from various polls conducted prior to the vote.

Independent Variables

Union Membership. Proportion of private-sector workers who belong to a union in the representative's district, 1991–92. Coded from *Current Population Survey*.

Mexican Border. Coded 1 if the district contains a land border with Mexico, 0 otherwise.

Household Income. Median household income in the district in thousands of dollars, as reported in the *Almanac of American Politics, 103rd Congress*.

Perot Vote. Proportion of the 1992 presidential vote in the district for H. Ross Perot, as reported in the *Almanac of American Politics, 103rd Congress*.

Corporate Contributions. Proportion of total contributions to the member's campaign committee from corporate political action committees.

Labor Contributions. Proportion of total contributions to the member's campaign committee from labor-related political action committees.

NAFTA Committee. Membership on one or more of the committees which acted on NAFTA implementing legislation. Coded 1 if representative was a member, 0 otherwise.

Republican Leadership. A position in the Republican Party of the House. Coded 1 if minority leader, conference chair, vice-chair, secretary, minority whip, chief deputy whip, deputy whip, and assistant deputy whip; 0 otherwise.

Democratic Leadership. A position in the Democratic Party of the House. Coded 1 if the Speaker, majority leader, caucus chair, vice-chair, majority whip, floor whip, ex-officio whip, chief deputy whip, and assistant deputy whip; 0 otherwise.

Party Affiliation. Coded 1 if Democrat, 0 if Republican. Minnesota Democratic Farmer/Labor Party coded as Democrat.

Ideology. Dummy variable based on 1993 Chamber of Commerce voting score. Coded 0 for a rating of ≤ 50 ; 1 otherwise.

APPENDIX B: UNION MEMBERSHIP DATA BY CONGRESSIONAL DISTRICT

A data set was created for union membership percentages in each of the 435 districts of the 103d Congress. Data came from the Area Union Membership Files compiled by Hirsch and MacPherson (1993), which are derived from the *Current Population Survey* (CPS). We mapped the data to congressional districts via the Consolidated Federal Funds Report (CFFR) Geographic Reference File for fiscal year 1992, available from the Bureau of the Census, U.S. Department of Commerce. Our data set includes information on private-sector labor union membership and total union membership (i.e., membership for all wage and salary workers, including private sector, federal, state and local government employees, and postal workers), expressed as a proportion of the total workers in the district.

The Area Union Membership File is an aggregation of the CPS data on individual union membership throughout the United States. It contains data for 247 Metropolitan Statistical Areas (MSAs) and 50 nonurban state areas. Individuals are counted as union members if they respond "yes" to the question: "On this job, is (the respondent) a member of a labor union or of an employee association similar to a union?" The CPS excludes self-employed individuals and military personnel. For each area, the number of union members is divided by the total number of wage and salary workers to obtain the percentage of unionized workers. The CFFR file contains information on 45,976 distinct geographic areas, comprising all 50 states plus territories. Included are codes for Bureau of the Census designations as well as state, county, and city government units. The number of congressional districts in the geographic area and their identity also are included.

We merged the Hirsch and MacPherson data on union membership percentages with CFFR data, so that each of the 45,976 subunits in the CFFR file was assigned a unionization percentage based on its location in one of the 297 MSA/state areas. This is an adequate representation of union membership in most instances, since the CPS data come from a Census-based probability sample of the entire United States. These data were then aggregated to the congressional district level by first making one copy of each observation for each congressional district in which it exists, so that every district contains a CFFR observation for all CFFR areas in its boundaries. We then accounted for a CFFR unit's contribution to the total union membership of the district by weight-

ing a CFFR area's assigned membership percentage by its population, then summing over the weighted membership scores and dividing by the total (aggregated) population of the congressional district. In this way, the aggregation process accurately accounts for varying levels of population as well as union membership. CFFR areas that occupy more than one district were weighted and counted for each district in which they fall. Because there is no way to determine what percentage of a CFFR area falls in which of the two or more districts, and whether union membership varies between those respective parts, both districts were given a weighted measure of union membership based upon the CFFR area's entire population, rather than just the part located in each district. While this procedure introduces some level of bias due to varying population across CFFR areas, the problem is mitigated by the fact that 37,927 of the 45,976 CFFR units (82.5%) exist in only one congressional district, and only 24 CFFR areas are spread across 5 or more districts. To the extent that existing scholarship relies on *state* union membership totals when conducting district-level analyses, we feel our data are a significant improvement.

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