

Political Bargaining and the Timing of Congressional Appropriations

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Abstract

Although Congress passes spending bills every year, there is great variation in the amount of time it takes. Drawing from rational models of bargaining, we identify factors that systematically affect the duration of legislative bargaining in the appropriations process. Analysis of spending bills for fiscal years 1977 to 2009 shows that delays are shorter when the ideological distance between pairs of key players decreases and distributive content is higher, but they are longer following an election. We find that congressional parties matter but that intra-party conflict matters as well, which suggests that Appropriations Committees retain significant autonomy in Congress.

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One of the most fundamental powers of the U.S. Congress is the power of the purse, and exercising that power is a core legislative activity (Fenno 1966). Not only does Congress allocate a staggering sum of money through the annual appropriations process (over a trillion dollars every year), but spending decisions also occupy a sizeable portion of the congressional workload. In some years, a third of all roll call votes in the House have been related to appropriations (Ornstein, Mann, and Malbin 2000, chapter 7).

This extensive activity reflects a bargaining process that is often complicated because the political system distributes power *within* and *across* institutions: committees negotiate with their parent chambers, the House negotiates with the Senate, and Congress negotiates with the president. Even when negotiations take place on a regular basis, such as with the annual appropriations process, the length of time necessary to reach agreement varies. Appropriations bills are sometimes completed before the fiscal year begins. More typically, they are not completed until two or three months after the fiscal year has already started. Occasionally, the process takes even longer. President Clinton and a Republican Congress did not resolve their differences over fiscal year 1996 spending until half of the fiscal year had already passed, along the way incurring the shutdown of the government and much criticism. More than half the fiscal year had also passed when President Obama and Republican lawmakers finalized fiscal year 2011 appropriations after narrowly averting another shutdown.

Lengthy delays can be consequential for politics and policy. Delay and bargaining failure can carry political risk, such as a shift in public opinion. In the case of the Clinton-GOP government shutdown, the public blamed congressional Republicans for the crisis, and Clinton's previously low approval ratings began to steadily rise. In addition, extensive and drawn-out bargaining over appropriations bills leaves little time on the congressional agenda to consider

other important legislation, especially at the end of a session. Repeated passage of continuing resolutions also hinders the bureaucracy's ability to provide services, as temporary budget authority creates uncertainty and compresses the time frame for program planning and implementation (Young 2010; GAO report 2009). Moreover, delay in passage of appropriations legislation can affect market actors, whose abilities to make long range economic plans are hindered by the uncertainty.

Yet despite its importance, no previous studies have undertaken a systematic analysis of the duration of appropriations bargaining or of the duration of the legislative process generally. While previous studies have applied duration analysis to a few aspects of congressional and inter-branch politics, appropriations politics is distinct from the processes examined in those studies. In contrast to research on the timing of cosponsorship (Kessler and Krehbiel 1996) and vote announcements (Box-Steffensmeier, Arnold, and Zorn 1997), appropriations decisions are *collective*, rather than individual, choices in which outcomes are entirely the products of interdependent decisions. Existing studies of collective choices investigate confirmation decisions (Binder and Maltzman 2002, McCarty and Razaghian 1999, Shipan and Shannon 2003), which involve a much simpler institutional process than that required to pass appropriations bills. Whereas the confirmation process involves the Senate making a binary decision regarding the nominee, the appropriations process offers many opportunities to negotiate and alter the outcome before legislation finally passes through the required hurdles.

Studying the timing of appropriations provides a novel window through which to view the legislative process generally—one that provides an important alternative to, but also supplements, the perspective provided by many studies of legislative productivity (e.g., Binder 1999, Howell et al 2000, Mayhew 1991) and myriad studies of roll call votes (e.g., Clinton 2007,

Krehbiel 2007). Extant theoretical models—whether partisan (Cox and McCubbins 2005) or non-partisan (Brady and Volden 1998; Krehbiel 1998)—reduce the legislative process to a game between a single player with agenda-setting power and one or two players with veto power.

The main finding of our analysis that policy-making is a process of bargaining between *multiple pairs* of key actors reflects the rich institutional setting of appropriations politics. The duration of the appropriations process increases in the ideological distance between the chambers' majority parties and their respective Appropriations Committees, between the majority party of each chamber, and between the president and partisan congressional majorities. Like Binder and Maltzman (2002), we find that ideological distance matters. Furthermore, while our results lend greater support to partisan theories over non-partisan ones, we also find that *internal party conflict* is a cause of delay. Even though majority parties may be able to stack the composition of committees in their favor, they do not exercise perfect control as the committee system necessarily involves delegating some degree of authority. Our empirical analysis therefore cautions against relying too heavily on models that oversimplify the legislative process.

Theoretical Framework

Unlike the many of pieces of legislation introduced in Congress every year, appropriations bills are “must pass” in the sense that failing to pass *any* form of spending law has an important consequence: the government has literally no authority to spend money. But the time it takes to pass such a law varies greatly. Appropriations decisions, like lawmaking in general, involve back and forth negotiations that occur between key players at different stages of the legislative process (Fenno 1966; Schick 2007). To understand why this process can sometimes end relatively quickly while at other times drags on for months, we draw insights

from rational choice models to develop a theoretical framework concerning the dynamics of political bargaining. The framework leads to testable hypotheses about bargaining distance, opportunity costs, issue content, and budgetary rules. While political bargaining models have been used to explain policy outcomes and levels of gridlock, previous research has rarely explored their implications for the dynamics of lawmaking.

A basic premise of our framework is that delay is costly. Representatives and senators face many demands on their finite time and attention (Woon 2009). The more time that legislators spend on budgetary negotiations, the less time they have for other substantive legislation, for conducting investigations and holding hearings, for communicating and serving constituents and, importantly, for their re-election campaigns. In addition to these opportunity costs, Congress may incur other direct and indirect costs of engaging in a protracted appropriations battle.¹ As noted above, there may be policy costs associated with agencies' ability to carry out their duties; there may be the risk of changing political conditions that alter players' relative bargaining strength; and there may be public backlash, involving the loss of approval and trust. Although the exact nature of the cost may vary depending on the circumstances, there is always *some* cost. Longer delays are more costly, and therefore less preferable, than shorter delays. It follows that the duration of the bargaining process necessarily reflects its *difficulty*.

Note, however, that it does not follow that rational bargainers will always prefer to avoid delay. Rather, it may be rational under some conditions to incur delay for strategic reasons if the expected benefit of a better bargain outweighs the additional cost of delay. Incurring delay may be rational when a player making a proposal faces some form of uncertainty about whether the proposal will be accepted. This uncertainty can arise in bilateral bargaining models when the

bargainers possess incomplete information about which outcomes are acceptable to each other. In this situation, a *screening* or *haggling equilibrium* arises in which the proposer faces a trade-off between making “tough” offers and making concessions to the other player. Tough offers involve the potential for better outcomes from the point of view of the proposer, but entail a higher probability of rejection because they are worse from the responder’s point of view. In contrast, making concessions means that the proposer is sacrificing potential benefits in exchange for increasing the likelihood that a deal will be reached.

To illustrate this trade-off, consider a situation in which two players, a Proposer and a Responder, with spatial single-peaked, symmetric preferences bargain over a single dimension.² As illustrated in the upper part of Figure 1, suppose the Proposer’s ideal point is P , while there is uncertainty about the Responder’s ideal point, which is only known by the Proposer to be uniformly distributed between $R - E$ and $R + E$ (so the *expected value* of the Responder ideal point is R). The status quo is commonly known to be q . To simplify the exposition, suppose also that the proposer has two opportunities to make an offer; if the first offer is rejected, the second offer is a final take-it-or-leave-it offer. The key outcome variable of interest is the probability that the first offer will be rejected: the probability that there will be delay. In the upper part of Figure 1, the equilibrium first period proposal is x^* , which represents the optimal balance between potential gains and the cost of delay. The shaded portion of the bar indicates the set of realized ideal points for Responders who would accept x^* while the unshaded portion indicates the set of realized ideal points for Responders who would reject it. Any proposal to the left of x^* will have a higher probability of being accepted (a larger set of Responder types would accept in the first period, expanding the shaded region) but is worse from P’s point of view because it is farther from P’s ideal point. Any proposal to the right of x^* would be better for P

but is even less likely to be accepted (the set of Responder types who would accept becomes smaller, contracting the shaded region). Thus, the Proposer faces a very real tradeoff between risk of delay and concessions to the Respondent.

[Figure 1 about here]

Bargaining Distance

The degree of preference divergence, or *bargaining distance*, is an important source of variation driving the length of delay that bargainers are willing to incur. To see this, suppose that the expected distance between the two bargainers' ideal points increases, as illustrated in the lower portion of Figure 1 in which R' is further from P than R . Holding P , E , q , and opportunity costs constant, as the distance between R and P increases, the equilibrium proposal in the lower part of the figure is x^{**} , which entails greater risk and thus a greater probability of delay. As Figure 1 shows, the probability that equilibrium proposal will be rejected (represented by the size of the unshaded region relative to the entire set of possible Responder ideal points) is greater when the expected responder ideal point is R' (lower part) than when the expected responder ideal point is R (upper part). There are two reasons for this. When R is farther from P , the Proposer makes relatively tough initial offers because he or she becomes more willing to accept some cost of delay in exchange for potentially better outcomes. As the distance between R and P increases, the Proposer would have to make rather substantial concessions to R to keep the probability of incurring delay constant. However, the Proposer ultimately cares about policy outcomes and is only willing to make small concessions, which results in a greater probability of delay and a longer expected duration. At the same time, the Responder becomes more likely to misrepresent his or her true preferences and strategically reject initial offers to extract greater concessions in the second period. This leads to our major empirical implication.

Bargaining Distance Prediction. *All else equal, delay increases as the expected distance between key players increases.*

The result is rather intuitive: the greater the expected distance between the bargainers, the longer it will take them to reach an agreement. Although the bargaining distance prediction summarizes the general effects of preference conflict between key players, deriving testable implications requires two additional considerations. First, who are the key players in the appropriations process? Second, what is the distribution of bargaining power between them—that is, to what extent do the players have equal or unequal rights to make proposals?

We argue that bargaining and negotiations can be thought of as occurring between each of four major pairs of actors in the legislative process. Agreements must be reached within both chambers (between each chamber as a whole and its respective Appropriations Committee), between the House and Senate, and between the Congress and the President. The length of negotiations can vary at each of the four stages, so we expect that delays increase in the distance between *pairs of key players for each stage*.

But each of the key congressional players we identify is really a collective body, so we must also specify assumptions about the nature of collective decision making. The congressional literature suggests two alternate postulates: majoritarian (Brady and Volden 1998; Krehbiel 1991, 1998) and partisan (Aldrich and Rohde 2000; Cox and McCubbins 2005). But because the debate between majoritarian and partisan theorists has not been fully resolved, we regard its resolution as an empirical issue and maintain that both are plausible a priori theoretical assumptions.³ We therefore test two competing claims about the identities of key players in the bargaining process. *Delay will be increasing either in the distance between majoritarian players at each of the four stages or in the distance between partisan players at each of the four stages.*⁴

The final consideration with respect to bargaining distance is the distribution of proposal power. The bargaining distance prediction holds unconditionally if bargaining power is *symmetric*; if each side may make proposals and counteroffers, delay is increasing in distance. However, if power is *asymmetric* in that one player has full agenda control while the other player can only agree to a proposal but cannot effectively make counteroffers (as in Romer and Rosenthal 1978), then delay increases in distance only if the proposer prefers a higher level of spending than the responder. When the proposer prefers less spending, the responder will always accept even if there is uncertainty about preferences—so that there is no delay—because the equilibrium offer will certainly be preferred to the failure to pass any spending bill.⁵

While it is consistent with leading theoretical models of lawmaking to characterize bargaining within and between chambers of Congress as symmetric, it is less straightforward to characterize bargaining between Congress and the president as such. Following Kiewiet and McCubbins (1988), a direct application of the agenda setter model implies asymmetric bargaining between the executive and legislative branches of government (see also Cameron 2000 and Krehbiel 1998). According to this view, Congress has monopoly proposal power and the president's sole influence lies in the veto. Thus, delay will be greater when the president prefers lower spending than Congress, so we expect that *delay will be greater for Republican presidents than for Democratic presidents*. Asymmetric bargaining due to the president's veto also implies that *delay will be increasing in the ideological distance between Republican presidents and Congress but not when the president is a Democrat*.

If the president possesses other means of influence, bargaining power will appear to be symmetric rather than asymmetric, so we might not observe the differences between Republican and Democratic presidents predicted by asymmetric agenda power. For instance, proposing a

budget serves as a reference point that influences subsequent political bargaining and there is evidence that the *ex ante* proposal power of the president influences the distribution of budgetary outcomes (Berry, Burden, and Howell 2010). Informal negotiations between the executive and legislative branches also influence outcomes so that the president may be able to influence spending decisions (Moe 1985), not only through the budget proposal but also through the power of the presidential pulpit (Kernell 1997; Canes-Wrone 2006) or through direct contact with key members of Congress (Neustadt 1990).

Opportunity Costs

Another important source of variation in the duration of bargaining is opportunity cost. Since equilibrium proposals balance the potential benefits of the outcome against the cost of delay, it follows that as opportunity costs increase, delay will also increase.⁶ We argue that opportunity cost varies systematically with two features of the legislative environment.⁷ First, if legislators face trade-offs between legislating and campaigning (Fenno 1973), then the opportunity cost is higher when electoral concerns are more important: during election years rather than non-election years and, within election years, prior to the election rather than after it. Thus, we expect the opportunity costs of campaigning to have two effects: *delay will be lower in election years, and during an election year delay will be more likely before the election occurs.*

Second, opportunity costs increase when the new fiscal year begins. For government agencies to legally spend funds before Congress finalizes appropriations, Congress must pass temporary continuing resolutions (joint resolutions with the force of law requiring the signature of the president), which take up time on the legislative agenda, leaving less time for other legislative business. Along with increased opportunity costs, there may also be audience costs associated with negative publicity surrounding Congress's inability to pass appropriations before

the fiscal year begins. *We expect the probability of passage will be lower before rather than after the fiscal year begins.*

Distributive Content

Appropriations bills vary in the type of spending or policy content under consideration. In Volden and Wiseman's (2007) extension of the Baron and Ferejohn (1989) majority rule bargaining model, spending may be allocated between distributive goods (particularistic goods with benefits that accrue privately to the players or districts) and collective goods (public goods that provide benefits to all players or districts). When the value of collective goods relative to distributive goods is high, there is no delay because legislators unanimously prefer to obtain collective benefits as soon as possible. In contrast, when the value of particularistic goods is high, players have incentives to seek greater benefits by proposing minimal winning coalitions but risk the potential for incurring greater costs of delay.⁸ Delay is more likely in the latter case, so the Volden and Wiseman model suggests that *delays will be longer for appropriations bills with more distributive content than collective content.*

Alternatively, non-distributive content might involve ideological conflict about spending priorities rather than collective goods that are universally beneficial. If so, it is not necessarily the case that bills with high distributive content will have longer durations than other bills. In fact, distributive content might serve as a useful tool to buy the votes of members of Congress who would otherwise be unable to agree on the ideological issues presented in the bill (Evans 2004). Distributive and ideological content both offer opportunities for strategic delay in bargaining, so the effect of distributive versus ideological content is ambiguous and left as an empirical question.

Budgetary Rules

The theoretical bargaining literature suggests that outcomes can be very sensitive to the exact nature of procedures used (Banks 1990). For instance, Ferejohn and Krehbiel (1987) show that the congressional budget process can lead to larger budgets than the traditional piecemeal appropriations process. In the 1980s and 1990s, Congress implemented two major changes in budgetary rules, both aimed at deficit reduction. Gramm-Rudman-Hollings (effective for fiscal years 1985 to 1990) accelerated the timeline for the budget process and introduced deficit targets with an enforcement mechanism while the Budget Enforcement Act (effective from 1991 to 2002) imposed caps on discretionary spending. Although researchers have reached mixed conclusions about the effects of these reforms on budget deficits (Poterba 1997; Primo 2007), budget analysts such as Schick (2007) point out that procedural changes “left an enduring imprint on budget practice” and that the common element of these budget rules “was that politicians require prefixed rules barring them from making certain budget choices” (p. 22).

From a theoretical perspective, the deficit reduction procedures imposed constraints on the feasible set of outcomes that bargainers could agree on. In the tradition of Nash’s (1950) axiomatic bargaining model, Axelrod (1967) shows that disagreements are increasing in conflict of interest, and his theoretical argument is supported by subsequent experimental evidence (Malouf and Roth 1981; Babcock, Loewenstein, and Wang 1995). Intuitively, when the size of the Pareto set increases or when there are more feasible outcomes available, it will take longer to reach an agreement. Conversely, when the Pareto set is constrained to be smaller, such as with binding deficit reduction procedures, there is less to negotiate about, and so agreement comes about sooner. We therefore expect that *the duration of appropriations decisions will be shorter when Gramm-Rudman-Hollings and the Budget Enforcement Act are in effect than when they*

are not. In addition, *delays will be shorter for the Budget Enforcement Act than for Gramm-Rudman-Hollings* because the former imposed stricter constraints on the budget process.

Data and Methods

Measuring Durations

The budget process in Congress is quite complex, involving the passage of a budget resolution, deliberation and passage in both chambers, and the possible use of omnibus legislation, so the empirical analysis—informed by the theoretical analysis—requires us to focus on a key feature of the process while necessarily abstracting away from many rich and interesting complications. Thus we seek to measure the *overall duration* of the lawmaking process, which ends with the *passage of law*; in contrast, bargaining failure is the *absence* of a law. In the context of appropriations, a key feature of the process is that a public law must be enacted for government agencies to have legal budget authority. We consider any passage of an appropriations act that provides budget authority through the end of the fiscal year to be a legislative “agreement” because it requires positive action. Such enactments correspond to three possible types of law: regular appropriations acts, omnibus appropriations acts, and continuing appropriations acts.⁹

Continuing appropriations sometimes take the form of “year-long” continuing resolutions (CRs), and we note that it is appropriate to treat these acts as legislative “agreements” rather than “failures” for several reasons. First, year-long CRs must pass through the same hurdles as any other form of legislation. Second, unlike short-term CRs which provide authority for only part of the fiscal year and can be thought of as agreements to continue the bargaining process, year-long CRs represent agreements to end the bargaining process and move on to other issues. Third, most year-long CRs are complex pieces of legislation. They are often longer than the

original “regular” appropriations bills¹⁰, are often negotiated in conference committees¹¹, and tend to represent new policies rather than continuations of previous fiscal year appropriations.¹² In short, year-long CRs are effectively omnibus bills by a different name.

We measure the duration of the appropriations process for each spending bill as the number of calendar days from the date the president submitted his budget until the date that the final appropriations decision for that bill was signed by the president and became law.¹³ The data set resembles a panel structure and includes all “regular” spending bills (i.e., non-supplemental spending bills for agriculture, defense, interior, etc) for fiscal years 1977 through 2009 (legislation in the last year of Gerald Ford’s presidency through the final year of George W. Bush’s administration). The unit of analysis is a single domestic spending bill (agriculture, defense, interior, etc) for a fiscal year, and there are 423 bill-year units.¹⁴ The period includes unified Democratic and unified Republican government as well as divided government and divided control of Congress. In addition, the entire period follows the enactment of the Congressional Budget and Impoundment Control Act, so that all of the fiscal years in our data set begin on October 1. The data set also has an event history structure (Box-Steffensmeier and Jones 2004); we not only measure the overall duration for each bill but, where appropriate, also record different values of the independent variables for each unit of “analysis time”.¹⁵

Bargaining Distance Variables

To create measures of bargaining distance, we compute the ideological distance between the ideal points of the relevant actors using the Common Space version of Poole and Rosenthal’s DW-NOMINATE scores (Carroll et al 2009). It is important to use Common Space scores rather than other versions of NOMINATE because the positions of representatives, senators, and

presidents must be on the same scale and also comparable across time. All of the distance variables are standardized so that they have a mean of 0 and standard deviation of 1.¹⁶

As identified in the theoretical framework, we measure four key distances: *House Chamber-Committee Distance*, *Senate Chamber-Committee Distance*, *House-Senate Distance*, and *President-Congress Distance*. For each distance variable, there are several plausible ways to identify the pivotal players, including whether the pivotal player reflects a majoritarian or partisan lawmaking process. At the committee level, there are two possible majoritarian players (full committee median, subcommittee median) and four possible partisan players (full committee majority party median, full committee chair, subcommittee majority party median, subcommittee chair). At the chamber level, the majoritarian player is the chamber median while the partisan player is the majority party median. For the Senate, we also consider the filibuster pivot as a key player at the chamber level.

In measuring the distance between Congress and the president, we account for bicameralism in two ways. We represent Congress as either the midpoint between the chambers or as the chamber that is further from the president. It is worth noting that the majority party versions of these measures will vary as a function of partisan control of the House, Senate, and presidency. In other words, while the median-based measure is non-partisan and captures only changes in the distribution of preferences, the party-based measure captures both changes in the distribution of preferences and the effects of divided government. To test whether bargaining power is asymmetric, we also include the dummy variable *Democratic President* and interact the relevant *President-Congress Distance* measure with dummy variables for the president's party.

Opportunity Cost Variables and Interactions

We include three dichotomous variables to test the hypothesis that increased opportunity costs lead to shorter delays. *Election Year* reflects the increased opportunity costs of time spent considering appropriations that could otherwise have been spent campaigning. *Post-Election* is a time-varying covariate that is coded 0 prior to the election and 1 afterwards during election years and is coded 0 for non-election years. *New Fiscal Year* is also a time-varying covariate that is coded 1 for days on or after October 1 and 0 prior to October 1. Note that *Election Year* and *New Fiscal Year* represent increases in opportunity cost while *Post-Election* represents a decrease in opportunity cost.

While the *New Fiscal Year* variable already accounts for a change in opportunity cost that occurs when an appropriations bill does not pass before the fiscal year begins (requiring the passage of short-term CRs), this point may also mark a critical shift in the bargaining process. Prior to October 1 opportunity costs may be so low that bargaining distance has no effect on durations, but once October 1 comes around and the fiscal year begins there is a greater sense of urgency such that the trade-off between time and outcomes becomes a more salient factor in lawmakers' bargaining decisions. To account for this possibility, we interact all of the distance measures with *New Fiscal Year*, which allows the effect of bargaining distance to vary over time.

Bill Content and Heterogeneity

While the theoretical analysis explicitly identifies variation in distributive content as a source of bargaining delay, there may be other differences between bills and spending areas that make negotiations more or less difficult. Some spending areas may be consistently more difficult than others because they involve larger amounts of spending or a more complex array of programs and agencies than others. Other spending bills like Labor, because of the nature of their programs, may tend to invite controversial limitation riders or other attempts to legislate

through the appropriations process. Although these and various other bill-level factors might contribute to the duration of appropriations, they are not central to our theoretical bargaining framework. Thus, rather than including separate variables for possible bill-level differences, we include a set of indicator variables for each spending category. By using “fixed effects” we can fully account for both observed and unobserved heterogeneity.

To test the distributive content hypothesis, we compare the bill-level coefficients with measures of distributive content. We follow the approach of Krehbiel (1991, p. 170) and classify *Distributive Content* using THOMAS database keywords for the appropriations bill involving the ratio of states to total keywords. In addition, we rank categories according to Congressional Research Service measures of earmarks (Report 98-518). We also compare bill-level coefficients with measures of attempts to legislate on appropriations in terms of abortion controversy and other limitation riders (MacDonald 2010).

Budgetary Rules and Control Variables

To test our hypotheses about the effects of new budgetary procedures, we include two dichotomous variables. *Gramm-Rudman-Hollings* is coded 1 for fiscal years 1985 to 1990. *Budget Enforcement Act* is coded 1 for fiscal years 1991 to 2002. The analysis also includes a number of control variables. To control for variations in macroeconomic conditions that may affect spending preferences, we include annual *Unemployment*, *Inflation*, and lagged *Deficit* as a percent of GDP. We also include *Presidential Approval*, which is a time-varying covariate based on Gallup Poll data, to control for potential variation in the president’s bargaining power (Canes-Wrone 2006). All of the control variables are standardized so that they have a mean of 0 and standard deviation of 1. To control for potential time trends that may be unrelated to trends in bargaining distance, we also include a year trend variable with fiscal year 1977 as the base year.

Estimation and Model Comparison

In the statistical analysis, we estimate a series of generalized Cox hazard regression models. The Cox model does not directly describe the relationship between covariates and the lengths of durations; instead, it is a semi-parametric model that describes how the covariates affect the *hazard rate*—in our case, the probability that a bill will pass given that it has not already passed—relative to an unspecified baseline hazard. A benefit of the Cox model is that it is flexible and allows the values of covariates, as well as their effects, to vary over time. While the Cox model is technically a continuous time model that assumes that durations can be strictly ordered, our data contain omnibus bills and continuing appropriations that account for simultaneous passage of more than one spending bill. We use the Efron approximation method to account for tied durations. As noted above, the data also has a panel structure, which we exploit by including a set of indicator variables for spending categories to control for bill-level heterogeneity. To account for any remaining within-year correlation, we also calculate the standard errors using robust variance-covariance estimates clustered by year.

Our analysis involves 32 possible model specifications that follow from alternative assumptions about key players in the bargaining process for each of our distance variables. There are 16 partisan models that result from two versions of *President-Congress Distance* (whether Congress is measured as the midpoint or maximum distance), two versions of bargaining power (whether bargaining with the president is symmetric or asymmetric), and four versions of chamber-committee distance (chair or party median, full committee or subcommittee). There are also 16 majoritarian models; these result from two versions of *President-Congress Distance*, two versions of bargaining power, two versions of the Senate chamber (floor median or filibuster pivot), and two versions of chamber-committee distance (full

committee median or subcommittee median). To compare several competing, non-nested models involving alternative assumptions about agenda and veto power, we follow Primo, Binder, and Maltzman (2008) and use the Akaike Information Criterion (AIC).¹⁷

Findings

Figure 2 provides a basic picture of the duration of the appropriations process for each year in our data set. The upper portion of Figure 2 shows the number of spending bills for each fiscal year that pass before October 1 while the lower portion shows the average and range of the total durations. While there are only four fiscal years for which all bills passed before the October 1 deadline, there are 9 fiscal years where *none* of the bills pass before the deadline. Indeed, Figure 2 shows that it is far more common for bills to pass after October 1st than before, as this is true for 75% of the bills in our data. Examining only whether bills passed before or after October 1 masks important variation in the duration of bargaining evident in the lower portion of the figure. For instance, since 1998 the percentage of bills passing before the deadline has remained fairly steady; not more than a handful of appropriations bills have passed before the deadline each year. Yet at the same time, the average duration of the process has been trending upward.

[Figure 2 about here]

Of all 32 possible specifications of bargaining distance, the best fitting model involves partisan players in which bargaining between Congress and the president is asymmetric, Congress is represented as the midpoint between the chambers' majority party medians, and committees are represented by their majority party median. The AIC score for this specification is 3953.3, and it outperforms the next best model (which is identical except that Congress is

represented by the maximum distance) by 0.5 points. After these two partisan models, there is a substantial decrease of 35.6 points in the AIC scores between the second and third best-fitting models (a difference of 10 points is usually considered “large”). Furthermore, the eight best models are all partisan and the difference in AIC scores between the best partisan and the best non-partisan models is a substantial 52.5 points, so model comparison analysis suggests that bargaining power with respect to annual appropriations process resides with the parties. Interestingly, despite the importance of subcommittees and their chairs, known as the “cardinals,” committee power appears to reside with the full committee’s majority party median.

Table 1 presents the estimated coefficients for the covariates in the best-fitting model; Table 2 presents bill fixed effects estimates. Cox model coefficients correspond to changes in the estimated *hazard rate*—the likelihood that a bill will pass given that it has not already passed—where a positive coefficient represents an increase in the hazard rate, implying a decrease in the expected duration of bargaining. In our specification, a coefficient for an uninteracted variable corresponds to changes in the baseline hazard prior to the beginning of the fiscal year, while a coefficient for an interaction term, when added to the uninteracted coefficient, corresponds to the change in the hazard rate after the new fiscal year begins. To aid in the substantive interpretation of the results, we also present marginal effects in the form of the percentage change from the baseline hazard for a one unit change in the variable (i.e., a change from 0 to 1 for a dichotomous variable or a 1 standard deviation increase from the mean for a continuous variable).¹⁸

[Table 1 about here]

Overall, the results support the basic bargaining distance prediction. The coefficients for the interaction terms for the bargaining distance variables for three pairs of key players are

statistically significant: between Congress and the president, between the House majority party and its House Appropriations Committee contingent, and between the Senate majority party and its Senate Appropriations Committee contingent. Note that the combined post-fiscal year coefficients (the sum of the interacted and uninteracted coefficients) are significant rather than the pre-fiscal year (uninteracted) effects, which suggests that greater bargaining distance implies a longer duration, but only if a bill is not enacted before the fiscal year begins. This is consistent with a structural shift in the bargaining process that occurs with a substantial increase in opportunity cost.

In terms of the relative bargaining strength of Congress vis-à-vis the president, the results provide some evidence of an asymmetric relationship consistent with the game theoretic literature on the president's role in the lawmaking process. Once the fiscal year has begun, increasing the distance between Congress and the president leads to a decrease in the hazard rate for Republican presidents but not for Democratic presidents. However, we find no support for the prediction that the hazard rate is generally higher for Democratic presidents than for Republican presidents.

The substantive sizes of the effects are fairly consistent across the three levels of bargaining. Once the fiscal year begins, a one standard deviation increase in bargaining distance between a Republican president and Congress implies an 88% decrease in the hazard rate. In the House, a one standard deviation increase in distance between the majority party median and the Appropriations Committee majority party median implies a 63% decrease in the hazard rate, and in the Senate, the substantive effect is a 75% decrease in the hazard rate.

We find that durations depend on electoral opportunity costs in a way that is consistent with our predictions. The coefficient for *Post-Election* is negative and statistically significant,

which implies that the likelihood of an appropriations bill passing declines following an election. Relatedly, we find that the overall hazard rate is much higher in election years than in non-election years, which is consistent with the argument that there is a greater sense of urgency in election years. We do not find any overall shift in the hazard rate that occurs when the fiscal year begins. Instead, the significance of the combined coefficients of the bargaining distance variables is consistent with a shift in opportunity costs in which the structure of bargaining changes but the overall hazard rate does not.

[Table 2 about here]

The coefficients and substantive effects for the bill-specific indicators presented in Table 2 suggest that there are significant differences in the hazard rate between Agriculture and four other spending areas. The coefficients for Military Construction and for Public Works (Energy and Water) are positive and significant, which suggests that Congress tends to complete the appropriations bills for these areas more quickly than for Agriculture and others. In contrast, the coefficient for Foreign Assistance and for Labor and HEW are negative and significant; Congress tends to take more time to complete spending bills in these areas.

[Table 3 about here]

Additional evidence is presented in Table 3, which shows the degree to which the relative delay in passage (bill-level coefficients) are correlated with measures that capture the amount of distributive content in each type of bill. Distributive content, no matter the measure used, shows a consistently positive relationship with the bill coefficients. That is, bills with higher levels of distributive content have higher hazard rates and are completed more quickly. These findings stand in contrast to the hypothesis we derived from the Volden-Wiseman model that spending bills with relatively more distributive content than collective goods should take longer to

complete. Our results do not necessarily “refute” the Volden-Wiseman model, but suggest instead that a model in which appropriations politics involves only goods that are either purely distributional or purely collective is too restrictive. Indeed, the fact that highly distributive bills such as Military Construction and Public Works are “easy” issues for Congress to complete quickly is consistent with the use of pork to facilitate passage of legislation (Evans 2004). It may be that these bills simply offer projects to enough legislators to ease their passage.

Bills with lower distributive content may also involve greater disagreement about the aims and objectives of the spending programs that they fund, and hence encounter greater delay in resolving such disagreement. One controversial area is abortion politics, which frequently held up appropriations bills in the 1980s. More generally, bills with lower distributive content provide greater opportunities for ideological conflict in the form of limitation riders meant to control policy. Table 3 shows correlations between the bill fixed effects and the number of abortion votes related to the bill, the number of years that the *CQ Almanac* mentions abortion with respect to the bill, and the number of limitation riders (MacDonald 2010).¹⁹ All of the abortion measures are negatively correlated with the hazard rate and thus associated with longer delays. Limitation riders are not associated with longer delays.

We find mixed evidence that budgetary procedures affect the timing of appropriations. The hazard rate is higher after the beginning of the fiscal year when the Budget Enforcement Act was operable, but none of the coefficients for Gramm-Rudman-Hollings are significant (either before or after the new fiscal year begins). In terms of the control variables, we find that delay varies with inflation but not with unemployment or the budget deficit. Delays have also increased over time, as the coefficient for the year trend is negative and statistically significant. Finally, we find that duration does not vary significantly with presidential approval.

Conclusion

Because the appropriations process is a series of back and forth negotiations between many key players, much of which is informal and unobserved, a systematic analysis and understanding of this bargaining process may seem elusive. We can, however, observe the timing of appropriations decisions, which gives us a unique window into the nature of political bargaining. We have shown that a theoretical framework that draws upon rational bargaining models systematically accounts for variation in the duration of appropriations decisions.

Delay is increasing in the ideological distance between pairs of key players, and our analysis provides important insights about who those key players are and the distribution of bargaining power between them. Our results are broadly consistent with other studies that find that preference conflict is an important factor contributing to delay in the context of presidential appointments, and we find that it is also true for the contemporary legislative process.

Specifically, we find that congressional parties play an important role in the timing of appropriations. While this is consistent with Kiewiet and McCubbins (1991) regarding the importance of parties in the appropriations process, we also find that delay is caused by *intra-party* ideological conflict—between the majority party contingent on the Appropriations Committees and the median member of the chamber’s party. Although many believe the committees, especially the House Committee, are less influential today than they were during Fenno’s (1966) landmark study, our results suggest that the committees are not necessarily faithful agents of the majority party but instead remain independent sources of influence.

This finding reinforces the understanding of the problem faced by parties delegating to committees as a classic principal-agent problem. The result here that increasing ideological

distance between the parties and their agents on the committees is associated with delay suggests that the majority party lacks sufficient tools to control its agents on the Appropriations Committee, despite such attempts to reign in the House committee described by Aldrich and Rohde (2000). Differences between the committee and the majority party are likely to persist to the extent that a guardian model (Fenno 1966, Krehbiel 1991) or a claimant model, reflecting strong distributive and electoral incentives (Adler 2000, LeLoup 1980, Schick 1980), describes committee membership and behavior. Furthermore, our results highlight the distinction between party discipline and agenda control. While our results are consistent with the role that parties play in controlling the agenda by making budget proposals, shaping the content of bills that reach the floor, using special rules, and controlling the calendar, they are not suggestive of a party that can enforce discipline from its members, including its agents on the Appropriations Committee.

Given that differences between actors matter, it is natural to ask whether these distances affect policy outputs. Do they affect overall spending levels? Or do the ideological differences between bargaining pairs affect the distribution of spending among players in the appropriations process? These results highlight areas for further study.

Finally, the stark differences in delay between contemporary and historical periods pose a topic for future research. Delays have become a regular and accepted feature of the contemporary appropriations process, but it has not always been so. Institutional reforms in the early 20th century, such as the adoption of the cloture rule in 1917 and the passage of the Budget Act in 1921, enabled Congress to complete appropriations in a timely manner. In fact, in the twenty years after the Budget Act's passage, Congress finished every appropriations bill before the start of the new fiscal year (Wawro and Schickler 2006, p. 254). But by 1974, Congress thought delays were problematic enough to move the beginning of the fiscal year from July 1 to

October 1 to give itself more time for appropriations work. It was clearly not a successful change.

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¹ Lawmakers note the costs of delay, including the considerable controversy, uncertainty, and brinkmanship involved in passing even short-term continuing resolutions. Consider the views of Senator Ben Nelson (D-NE) on the budget situation in March 2011: “I am worried about business and industry seeing this as instability, a lack of predictability and continuity,” Nelson said. “We can’t kick the can down the road every two weeks and expect to have investor confidence in the system” (Kerry Young and Brian Friel, “With CR Cleared, Haggling Begins,” *CQ Weekly*, March 7, 2011).

² The two period spatial bargaining model with incomplete information in the Appendix is very similar to the veto bargaining game in Cameron and Elmes (1994) and Cameron (2000).

³ A few of the most recent examples include Lawrence, Maltzman, and Smith (2006) who find evidence in favor of partisan theories, Wawro and Schickler (2004) who find support for majoritarian theories, and Clinton (2007) whose results support neither theory.

⁴ The ways each of these claims can be operationalized (e.g., Senate median versus filibuster, committee party medians versus committee chairs) are discussed below.

⁵ Although Kiewiet and McCubbins (1988) argue the reversion point appears to be the previous year’s level of spending because of the practice of passing continuing resolutions as a fallback, in game theoretic terms observing a continuing resolution is an equilibrium phenomenon (it occurs on the path of play). Failing to pass a continuing resolution is (typically) an “off-the-equilibrium path” phenomenon. A properly specified game must consider that passing a continuing resolution is itself a collective choice and the failure to do so would result in near-zero or drastically reduced spending—as it did during the fiscal 1995 budget stand-off between Clinton and the GOP. See Krehbiel (1998, pp. 204-5) and Smith (2007, p. 169) for similar arguments.

⁶ This applies to bilateral bargaining models as well as to majority rule divide-the-dollar bargaining models (Baron and Ferejohn 1989), where risk and uncertainty stem not from incomplete information about preferences but from the possibility of successful counteroffers, depending on the size of proposed coalitions. Proposers reap greater benefits from smaller coalitions but risk the chance that excluded coalition members will be able to negotiate a new coalition, resulting in delay. When the cost of delay increases, proposers sacrifice some benefits by assembling larger coalitions, which are more likely to be stable and result in less delay.

⁷ Although the Baron-Ferejohn model assumes an open rule, the theoretical predictions here do not hinge on an open rule. They follow from both the incomplete information bargaining model and the open-rule Baron-Ferejohn model. In addition, the open rule assumption in the Baron-Ferejohn model should not be construed too literally, since bills are brought to the floor under *formal rules* only after a period of *informal open-ended* bargaining. Empirically, open rules are relatively common, with 78% of appropriations bills receiving them, and they are likely endogenous, as regular bills receive them more often (81%) than omnibus legislation or continuing resolutions (64%). These factors make it impractical and unnecessary to consider the type of rule in the empirical analysis, but more detail regarding this assumption and the empirical distribution of bill rules is offered in the Appendix.

⁸ These are direct implications of the Open Rule Equilibrium stated in Volden and Wiseman (2007, 85). More specifically, a corollary of the equilibrium statement is that delay is increasing in the parameter α , which represents the relative value of particularistic goods.

⁹ We only treat a continuing appropriations act as “final passage” if it is not superseded by the passage of a stand-alone bill.

¹⁰ For example, the year-long CRs for fiscal years 1985 through 1988 ranged from 141 to 450 pages (United States Statutes-at-Large). In contrast, the average length of a “regular” appropriations bill for FY1977 was 15.8 pages and the total for all bills was 206 pages. The fiscal 1984 year-long CR was 18 pages, but it nevertheless contained many specific provisions (Diane Granat, “Congress Clears 1984 Continuing Resolution” *CQ Weekly*, Nov. 19, 1983).

¹¹ For example, all of the FY1984 to FY1988 CRs were finalized in conference committees, which would not be necessary for simple pieces of legislation (Dale Tate, “Politics Prods Congress to Clear Money Bill” *CQ Weekly*, Oct. 13, 1984; Nadine Cohodas, “\$368.2 Billion Omnibus Spending Bill Cleared” *CQ Weekly Report*, Dec. 21, 1985; “The 99th Congress Legislative Summary: Appropriations” *CQ Weekly*, Oct. 25, 1986).

¹² For example *CQ Weekly* reported on the controversy surrounding the FY 2007 CR, stating “[t]he House passed the 137-page resolution Jan. 31...Many [Republicans] said the country would have been better served by simply extending the previous continuing resolution, which followed a formula that used whichever figures were lowest among the House- or Senate-passed fiscal 2007 bills or the enacted fiscal 2006 bills” (David Baumann , “2007 Legislative Summary: Appropriations: Fiscal 2007 Continuing Resolution” *CQ Weekly*, Jan 7, 2008).

¹³ Although we might code the start date for the duration in other ways, using the duration of the overall process is justified for several reasons. First, the president’s proposal marks the literal start of the congressional process—Congress does not act until the budget is submitted. The Budget and Accounting Act requires that the president submit a budget between the first Monday in January and the first Monday in February, resulting in a proposal date that doesn’t vary much, especially since recent presidents have tended to submit the budget in February. Second, to the extent that budgetary negotiations take place informally behind the scenes, breaking the time

periods into each formal stage would incorrectly attribute durations only to the formal stages and fail to capture the duration of the informal process. Third, using a start point such as the passage of the Budget Resolution would require that we exclude years when Congress fails to pass a Budget Resolution. Our theory applies as much to the process of negotiating the Budget Resolution as it does to individual spending bills, so it is important that this duration be included in the overall duration.

¹⁴ When we use the term “spending bill” in this context we are using it in the way that most budget observers use it (e.g., to distinguish between Defense appropriations and Agriculture appropriations). Technically, and perhaps pedantically, we are really referring to a spending *category*—the set of agencies, commissions, and executive branch departments under the jurisdiction of an appropriations subcommittee—rather than to a specific piece of legislation such as “HR 1.” In other words, category is the panel variable while a spending bill is an observation (a category in a specific year). Except for a few name changes, subcommittee jurisdictions remained consistent between fiscal years 1977 to 2003, but because of changes to subcommittee jurisdictions in the 108th, 109th, and 110th Congresses, our data do not have a perfect panel structure. Notable changes include the creation of a Homeland Security subcommittee, merging (and then separating) Treasury and Transportation subcommittees, and eliminating subcommittees for the District of Columbia, and HUD/Independent Agencies. To preserve the statistical advantages of a fixed effects approach, we code appropriations bills for these later Congresses using the closest categories from the FY1977-FY2003 period.

¹⁵ In the terminology of duration analysis, independent variables that can take on different values at different points in time are called “time-varying covariates.”

¹⁶ This standardization is appropriate for two reasons. First, Common Space NOMINATE scores are identified only up to a linear transformation. Second, in estimating and interpreting a Cox duration model, it is important that 0 falls within the plausible range of values for the covariates. This is because the Cox model involves estimating changes relative to a baseline model where all covariates are 0. But unless two key players have the same ideal point, the bargaining distance measures will not be 0 and the baseline model will not represent a substantively meaningful set of values. When measures are standardized, the baseline model represents a plausible observation for which all of the independent variables take on their average value.

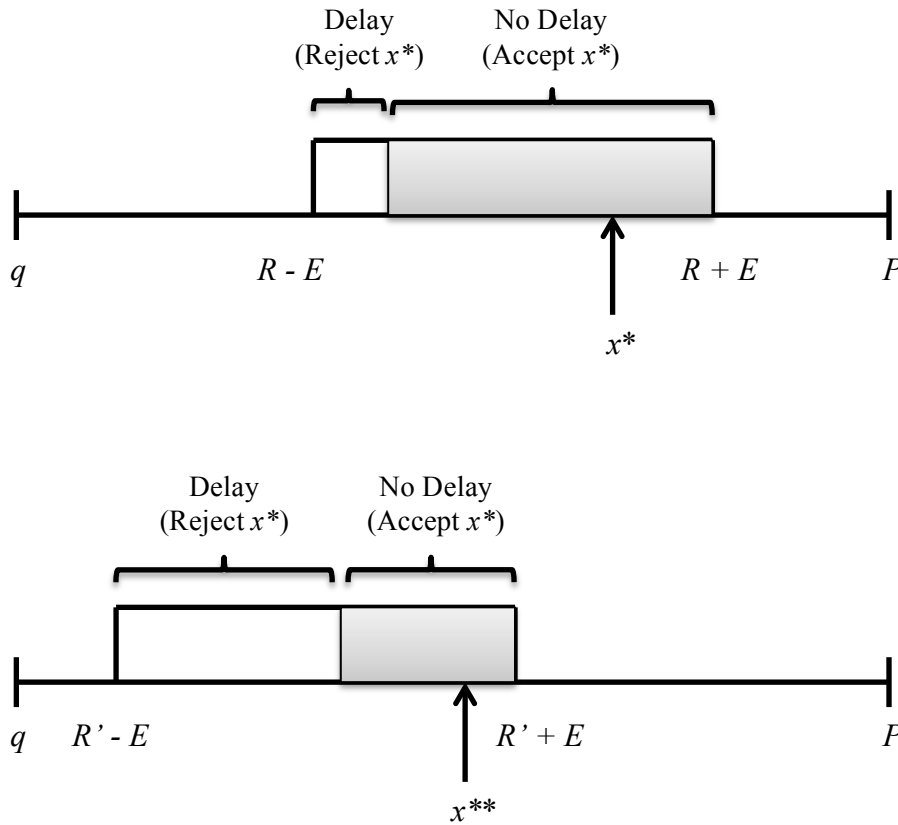
¹⁷ The Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) yield identical rankings and differences in scores, so we report only the AIC in the Appendix.

¹⁸ Since all of the continuous variables are standardized and the remaining variables are dummy variables, the baseline hazard corresponds to the situation where all of the continuous variables are at their means and the dummy variables are 0. Mathematically, the percentage change in the hazard rate for a covariate X is $(e^{(\beta+\delta d)X} - 1) \times 100\%$, where β is the coefficient for an uninteracted variable, δ is the coefficient for the interaction term, d is an indicator for the new fiscal year, and X is the covariate. We use Monte Carlo simulations to compute the confidence intervals for the first differences.

¹⁹ Abortion roll call votes were obtained from

http://maloney.house.gov/index.php?option=com_issues&task=view_issue&issue=248&parent=16&Itemid=35.

Figure 1. Equilibrium initial proposals and delay in a two-period incomplete information bargaining model as distance between Proposer and Responder increases



The shaded regions indicate the ideal points of types who accept the initial proposal (x^* or x^{**}). The unshaded regions indicate ideal points of types who reject the initial proposal and are willing to accept the cost of delay in anticipation of a potentially better outcome in the second period. See the Appendix for full details.

Figure 2. Durations of appropriations, fiscal years 1977-2009

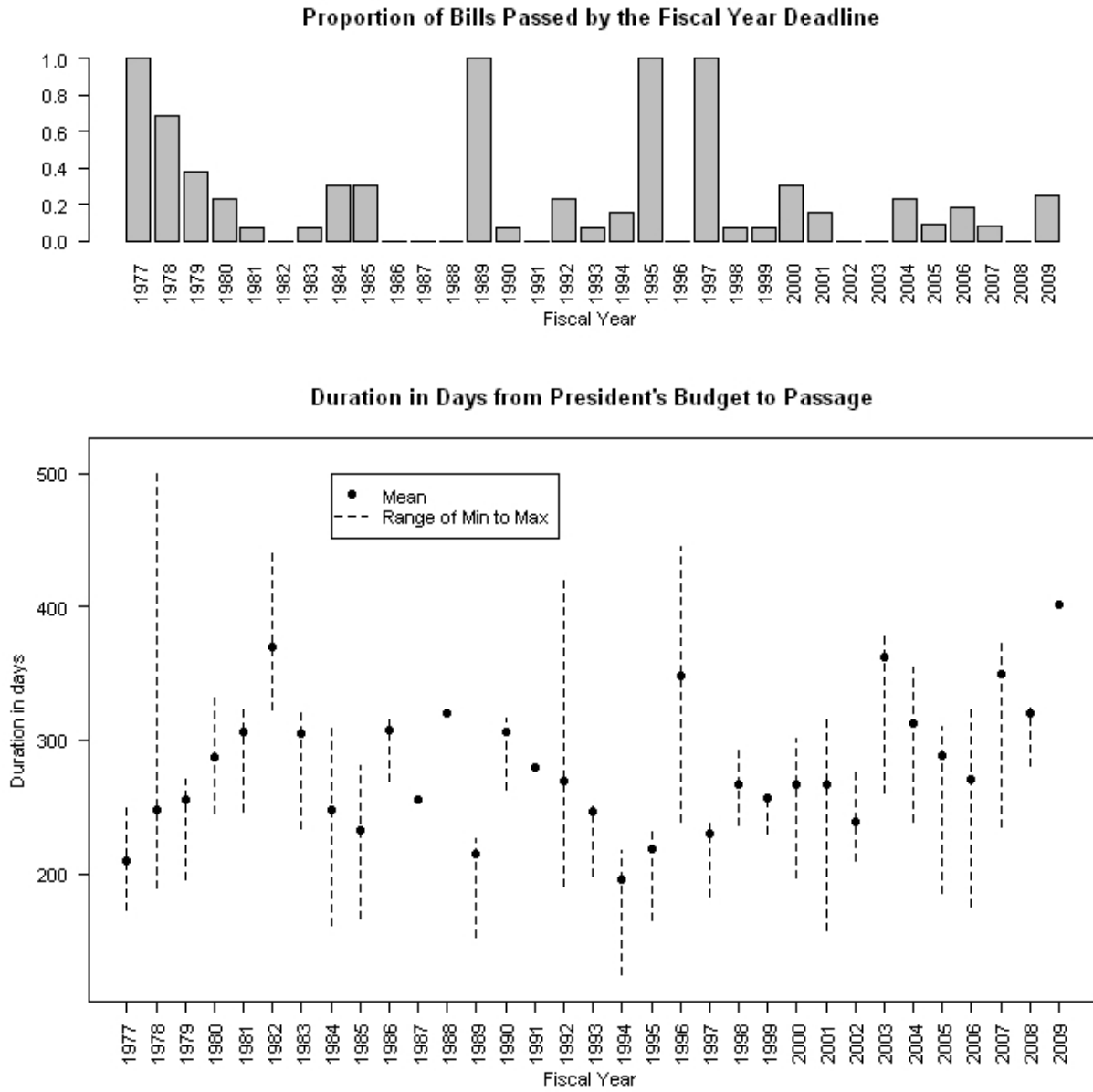


Table 1. Estimates for best-fitting Cox model (midpoint of Congress, partisan chambers, full committee majority party medians)

	Before Fiscal Year or Entire Year (Uninteracted coefficients)		After Fiscal Year Begins (Combined coefficients)	
	Coeff (Std Err)	Pct Change in Hazard Rate [95% Conf Int]	Coeff (Std Err)	Pct Change in Hazard Rate [95% Conf Int]
Post-Election	-1.26** (0.45)	-72% [-88%, -31%]		
Election Year	1.05** (0.25)	186% [73%, 364%]		
New Fiscal Year	0.83 (0.82)	129% [-53%, 1024%]		
Gramm-Rudman-Hollings	-0.01 (1.18)	-1% [-90%, 879%]	0.21 (0.60)	23% [-62%, 299%]
Budget Enforcement Act	-0.18 (0.93)	-16% [-87%, 422%]	2.22* (0.74)	821% [116%, 3747%]
Democrat President	0.31 (1.68)	36% [-95%, 3487%]	0.06 (0.74)	6% [-75%, 356%]
Dem President-Congress Distance	-0.91 (1.33)	-60% [-97%, 464%]	0.47 (0.74)	60% [-62%, 566%]
Rep President-Congress Distance	-0.23 (0.50)	29% [-71%, 111%]	-2.09** (0.69)	-88% [-97%, -52%]
House-Senate Distance	-0.89 (0.49)	-59% [-84%, 8%]	-0.05 (0.21)	-5% [-36%, 42%]
House-Committee Distance	-0.13 (0.65)	-12% [-75%, 227%]	-1.00* (0.44)	-63% [-84%, -13%]
Senate-Committee Distance	0.39 (0.81)	54% [-68%, 603%]	-1.38** (0.42)	-75% [-89%, -43%]
Unemployment	0.63 (0.60)	88% [-40%, 519%]	-0.46 (0.47)	-37% [-75%, 58%]
Inflation	-1.39* (0.65)	301% [-93%, -14%]	-1.18** (0.23)	-69% [-81%, -51%]
Deficit	0.22 (0.63)	25% [-62%, 313%]	-0.22 (0.46)	-20% [-66%, 100%]
Presidential Approval	0.05 (0.26)	5% [-37%, 75%]		
Year Trend	-0.09* (0.04)	-9% [-15%, -2%]		
Log pseudolikelihood	-1944.7			
Observations (Bills)	423			

Notes: * p < 0.05, ** p < 0.01. Standard errors clustered by fiscal year. Bill-level coefficients reported in Table 2. Second and third columns correspond to coefficients or first differences for non-time varying covariates or time varying covariates before the fiscal year begins. Fourth and fifth columns correspond to the combined coefficients for variables after the fiscal year begins (sum of uninteracted coefficient and the interaction).

Table 2. Bill-level coefficients from best-fitting Cox model estimates

	Coeff (Std. Err.)	Pct Change in Hazard Rate [95% conf. int.]
Commerce, Justice, State, Judiciary	-0.21 (0.12)	-19% [-35%, 1%]
Defense	-0.10 (0.19)	-10% [-38%, 31%]
District of Columbia	-0.58 (0.30)	-44% [-69%, 2%]
Foreign Assistance	-0.65* (0.31)	-48% [-72%, -4%]
HUD and Independent Agencies	-0.02 (0.16)	-2% [-28%, 34%]
Interior	-0.12 (0.14)	-11% [-32%, 16%]
Labor and HEW	-0.44** (0.14)	-36% [-50%, -15%]
Legislative	0.16 (0.17)	17% [-17%, 66%]
Military construction	0.50** (0.15)	65% [22%, 118%]
Public works (Energy and water)	0.40** (0.15)	49% [12%, 99%]
Transportation	0.07 (0.09)	7% [-11%, 28%]
Treasury, Postal Service, Executive Office of the President	-0.05 (0.11)	-5% [-24%, 18%]
Homeland Security	0.74 (0.38)	110% [-1%, 347%]

* $p < 0.05$, ** $p < 0.01$

Table 3. Correlations between bill coefficients, distributive measures, and limitation riders

		Correlation with bill coefficient (without Homeland Security)
Distributive	Ratio of states to keywords	0.07
	Proportion of total # of earmarks	0.15
	High distributive content dummy	0.16
Non-Distributive	Years with abortion votes	-0.48
	Total number of abortion votes	-0.17
	Years CQ Almanac mentions abortion	-0.78
	Number of limitation riders	0.53

Keyword measure based on data from THOMAS for FYs 1977-79, 1989-91, 1993-95, 1998, 2002. Earmark measure based on data from Congressional Research Service for FYs 1994, 1996, 1998, 2000, 2002. Homeland Security is excluded because over time data are not available for this new bill.