The Senate Electoral Cycle and Bicameral Appropriations Politics

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We consider the consequences of the Senate electoral cycle and bicameralism for distributive politics, introducing the concept of contested credit claiming, i.e., that members of a state's House and Senate delegations must share the credit for appropriations that originate in their chamber with delegation members in the other chamber. Using data that isolate appropriations of each chamber, we test a model of the strategic incentives contested credit claiming creates. Our empirical analysis indicates that the Senate electoral cycle induces a back-loading of benefits to the end of senatorial terms, but that the House blunts this tendency with countercyclical appropriations. Our analysis informs our understanding of appropriations earmarking and points a way forward in studying the larger consequences of bicameral legislatures.

In terms of political agency in the United States, federal outlays to states and districts are where the rubber meets the road. Elected federal representatives—members of the House and Senate—scramble to deliver public dollars to their constituents. The motives of these agents are complex (Fenno 1973), but in the legislative field the stylized fact of which we are the most confident is the centrality of the desire for reelection (Mayhew 1974). As a consequence, politicians master the geographic, socioeconomic, and demographic complexion of their states and districts, as well as the profile of partisan, candidate, and policy preferences of various constituencies (Fenno 1978), in order to identify with and advance local interests and, as a by-product, their own careers.

The flow of federal outlays is orchestrated by constitutional procedures and institutional structures within which a variety of practices are at work. For our purposes, the most significant features are the bicameral arrangement of the legislature, the decentralized committee systems of the two chambers, and the electoral calendar. The two chambers have authorization, appropriation, revenue, and budget processes. Implementing these are structural units charged, first, with ex ante agenda and information-gathering responsibilities and, second, with ex post bargaining and oversight authority in order to direct the flow of fiscal largesse. Bicameralism means that these chamber-specific processes are not entirely insulated from their counterparts in the other chamber and, at the end of the day, must be synchronized and made compatible if a legislative product is to emerge.

There is a political tempo to these processes as well. The press of legislative business and the approach of a new fiscal year put logistical pressure on legislative leaders to complete spending decisions in a timely manner (though not always fully). The timing of elections, and the eagerness of those running to get home to their campaigns, bring additional “date-certain” pressures to bear. But there is another electoral rhythm of relevance—the American Journal of Political Science, Vol. 53, No. 2, April 2009, Pp. 343–359
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term structure of representatives and senators. On the first Tuesday after the first Monday of November in even-numbered years, all 435 seats in the House are in play, while only a third of those in the Senate are. Senate and House members differ in term length (six years versus two years) and constituency (states versus districts). But the Senate should not implicitly be thought simply a larger-constituency, longer-term version of the House. The Senate is a staggered-term legislative chamber. As established in Article I, Section 3 of the Constitution, Senate seats are partitioned into three classes (with the two seats of any state necessarily in different classes). In any election year, contests for a third of these seats occur, but those for the remaining two-thirds are two years or four years into the future. The electoral connection, then, implicates every district in every state in House elections, but only 33 (sometimes 34) of the 50 states in Senate elections.

Putting these three things together—reelection ambition, the necessity for bicameral reconciliation on legislation, and chamber-specific electoral rhythms—suggests something that not even the authors of Article I, Section 3 anticipated. One important source of bicameral tension arises within state delegations as senators and members of Congress operate on different time horizons and with different intertemporal perspectives. The modest assumptions of retrospective voting ( Fiorina 1981, 2003) and recency bias, in which constituents assess past accomplishments giving greater weight to more recent performance—what Weingast, Shepsle, and Johnsen (1981) refer to as the “what have you done for me lately” principle (WHYDFML)—imply that reelection-conscious politicians, eager to make a maximal reputational impression on retrospectively inclined voters, will seek to deliver federal outlays to their states and districts just in time to be appreciated as their reelection campaigns kick into high gear. Thus, at the end of congress $t$, when a senator and his or her state-delegation colleagues in the House are in reelection campaigns, their joint incentives are correlated—all want the skids to have been recently greased with federal outlays in the state so that all can claim some credit. Likewise, at the conclusion of congress $t + 1$, when the other senator from the state joins his or her House colleagues in a reelection campaign, joint incentives are correlated. In congress $t + 2$, however, there is no Senate election in the state, and the House delegation must plan reelection campaigns in the absence of a statewide (federal) race.

Why should this matter? The answer derives from the staggered-term feature of the Senate. With only a portion of the Senate absorbed in a contest at each election date, and with all senators eager to shine in the run-up to reelection as a consequence of WHYDFML behavior by constituents, the membership of the staggered-term Senate can arrange things in a manner not available to the simultaneous-term House membership. Specifically, senators can implement an intertemporal deal, allocating a disproportionate share of (discretionary) federal outlays to just those senators who can benefit most from them, namely those facing a reelection campaign “this time.” Each senator will be in this privileged category at the end of his or her six-year cycle. Since every senator would, according to the WHYDFML logic, prefer concentrated benefits toward the end of the cycle to a smoothing of benefits throughout the cycle, it is a deal to which all senators, in principle, could subscribe. Shepsle, Dickson, and Van Houweling (2004) argue that this deal is an equilibrium with off-the-path behavior policed by a rather simple “punishment scheme” (deterring those who try to deviate by attempting to secure benefits when it is not “their” turn). Muthoo and Shepsle (2006) provide a rigorous demonstration of this result.

In this article we introduce bicameralism to this model. To do so we build on a standard divide-the-dollar game in two ways. First, we add a simplified model of the conference bargaining process that allows us to illustrate basic interchamber dynamics. Second, we formalize the concept of contested credit claiming, i.e., that members of a state’s House and Senate delegations must share the credit for appropriations to their state in a manner that only partially depends on which chamber originates the appropriation. This sets the stage for strategic interaction between the chambers. We limit our attention here to the relatively simple question of how a nonstaggered-term House seeking a universalistic allocation of pork would best respond to the irregular appropriations that characterize the equilibrium distribution we identify for the staggered-term Senate. We use a dataset of appropriations projects compiled by the Citizens Against Government Waste (CAGW) to examine hypotheses derived from our theoretical account. Along the way we draw on interviews of Appropriations Committee staff in both chambers to

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1 For the distribution of states across classes, and the time series of their initial assignments to classes, see http://www.thegreenpapers.com/Hx/SenateClasses.html. Table 1 gives the states in each class. Table 2 gives the order in which they were assigned, beginning with the first 22 senators on May 15, 1789.

2 See the miscellany of pamphlets, articles, letters, transcripts of debates in the Constitutional Convention and various state constitutional conventions, and diary entries assembled on each of the sections of the Constitution in the five-volume set, The Founders’ Constitution. The materials on Article I, Section 3, discussing the structure of Senate terms, is found in volume 2 at pp. 182–239. No appreciation of bicameral tension within state delegations is in evidence in these materials.

3 Experimental evidence consistent with WHYDFML, as well as a discussion of theoretical issues surrounding this hypothesis of voter behavior, are found in Patty and Weber (2006).
assist in framing the theory and interpreting the results of our analysis.⁴

We uncover several new dynamics of appropriations politics driven by the institutional features of bicameralism and the staggered-term structure of the Senate. To preview our findings, across all substantive jurisdictions, the number of projects allocated by the Senate ranges between 15 and 30% higher (with a similar premium in dollar amounts) to states with incumbent senators standing for reelection than to other states, and the House regularly counteracts approximately two-thirds of this bias. These findings support our simple model of interchamber politics and contested credit claiming, which points one way forward in the developing study of bicameral legislatures.

**Theoretical Argument**

Much of the empirical research on discretionary federal spending has, like research on Congress generally, focused heavily on the House. With some major exceptions (e.g., Ansolabehere, Snyder, and Ting 2003; Lee and Oppenheimer 1999), it is almost as though bicameralism did not exist at all. And, when the Senate is taken on board, it is often treated as essentially “House-like”—in particular, as a parallel chamber of simultaneous-term legislators. We cannot take on the full-blown agenda of bicameral politics here.⁵ However, as a step in that direction we want to know whether the existence of an upper chamber with heterogeneous legislator time horizons arising from its staggered-term feature, and thus not synchronized with the tempo of the lower chamber, makes any difference for our models of pork barrel politics. In other words, does the fact of a Senate election (or its absence) in a given state at the end of a congress affect conventional wisdom about the allocation of federal outlays during that congress or the promise of future outlays?

If senators had a term length identical to that of representatives then we might expect no systematic effect of bicameralism (putting party and other institutional differences aside for the moment). Each chamber’s representatives would seek outlays for their states and districts in every congress. If senators had a term length different from representatives but all senators were up simultaneously, we might expect a bump in spending in all congres-

⁴In 2005 and 2006 we made trips to Washington, interviewing majority and minority Staff Directors, including former Directors, of Appropriations subcommittees and full committees in both chambers.

⁵Theoretical work on bicameralism includes Tsebelis and Money (1997), Diermeier and Myerson (1999), Sin and Lupia (2005), Gailmard and Hammond (2006), Muthoo and Shepsle (2008)
legislative activity are less easy to derive. Introducing and amending legislation in the year just prior to reelection, for example, might enhance their images, but as election approaches, the opportunity cost of these activities is quite high given the alternatives of fundraising and campaigning. Not surprisingly, empirical evidence on this point is mixed. Overall, however, when the benefits are clear and the costs manageable, senators do seem to confirm the folk wisdom of altering their positions and activities as reelection approaches.

Roll-call voting and allocating one’s time and effort are individual choices entirely under a senator’s control. A senator can shift action and emphasis as the election calendar requires. Earmarks and pork barrel projects are a different matter. They introduce a different dynamic because senators cannot single-handedly satisfy the WHYDFML bias of their voters by simply changing their behavior. While a senator may devote effort to get distributive projects awarded to his or her state at election time, this effort may not be sufficient to secure them. To get more means to take from other senators, and given the formally equal parliamentary status of senators there is no reason to assume, a priori, that this is possible even if a senator is willing to expend additional effort in the cause. In short, a model of the collective decision process inherent in passing appropriations legislation becomes necessary. Elsewhere we have addressed this puzzle of how a standard divide-the-dollar game might play out when senators have preferences driven by a WHYDFML effect (Muthoo and Shepsle 2006; Shepsle, Dickson, and Van Houweling 2004). In the next section, we provide a brief overview of the argument and then extend it to the bicameral setting.

Divide the Dollar in the WHYDFML Senate

Imagine three classes of senators \( \{ t, t+1, t+2 \} \). One type faces reelection now (class \( t \)), another type faces election in the following congress (class \( t+1 \)), and the third faces reelection in the congress after that (class \( t+2 \)). In each congress there is a dollar of federal outlay to divide. We do not tackle the revenue side of the equation, so the total amount of outlay is taken as fixed and exogenous. In effect, we have a repeat-play version of the Baron-Ferejohn (1989) divide-the-dollar game. The difference in our version is that the senators are of different types, and this difference affects their preferences over alternative outlay profiles.

A senator values reelection, and his or her probability of reelection is written in terms of the outlays delivered to the folks back home. (Of course, this probability may be affected by other things as well.) A senator of class \( t \), for instance, is reelected with probability \( \pi(s_{t-2}, s_{t-1}, s_t) \), where \( s_t \) is the share of the dollar he or she secured for the state in congress \( i \). Two assumptions about \( \pi \) are made. The first, weak monotonicity, says that in any congress more is no worse than less, i.e., the probability of reelection is weakly increasing in the amount of federal outlays in each of the three congresses of the electoral cycle. The second, the WHYDFML (or weak recency bias) principle, says that voters assess performance retrospectively, giving more weight to outlays in congress \( i \) than in congress \( i-1 \).

Considering unicameral preferences first before moving to a fully bicameral setting, suppose each congress an exogenously provided dollar is divided among the senators by majority rule. The closed-rule version of the congress \( t \) stage game is as follows. A senator is randomly recognized to make a proposal taking the form of an allocation of the dollar to the three senators in congress \( t \). This proposal is immediately put to a vote. If a majority supports the proposal then it is implemented; if not then outlays are set to zero for each senator that congress. If each play of the stage game is history-independent, then the only equilibrium is one in which whoever is recognized to make a proposal proposes to take essentially the entire dollar for his or her own state. (She need give only one to one other.)

If, however, players may condition their behavior in congress \( t \) on what has transpired in earlier congresses,

\[ \text{Smith} (1989, 136) \text{ studies amending activity and finds some suggestive evidence, although he does not focus on the issue of an electoral cycle. In four of the five Senates he examines (84th, 88th, 92nd, 96th, 99th), senators at the end of their first term are more likely to propose amendments than senators in the first four years of their first term. This finding can be explained by an apprenticeship norm in the Senate but it also fits a cyclical pattern. Smith's analysis combines all senators in their second term and above, making any further inference about cycles difficult. Relatedly, Schiller (1995) finds that senators up for reelection are slightly more likely to introduce bills, but coefficients fall far short of traditional thresholds of statistical significance.} \]

\[ \text{Here we describe the preferences of senators in a repeated divide-the-dollar game with different "types" of senators in a fictional unicameral context. We use this approach to explore strategic interaction in a bicameral context. In other work we assume there are } l \text{ senators of each type, though we will walk through the argument with } l=1 \text{ without loss of generality.} \]

\[ \text{For a bicameral model in which taxes are determined endogenously, see Muthoo and Shepsle (2008).} \]

\[ \text{This is a stronger statement of recency bias than we require. The assumptions are precisely formulated in Muthoo and Shepsle (2006).} \]
then an equilibrium exists in which the senator recognized to make a proposal offers a portion of the dollar (perhaps the entire dollar) to the class \( t \) senator—the one who will face reelection at the conclusion of the present congress. The optimal portion cannot be described in general without further assumptions about \( \pi \), but if this function is concave, then the optimal portion going to the class \( t \) senator is disproportionately large. In equilibrium, each senator is reelected with probability \( \pi(\mathbf{s}_t, \mathbf{s}_{-t}) \), where \( s_t \) is the amount specified in the optimal distribution. Elsewhere we demonstrate that this distribution can be sustained with a punishment scheme.\(^{12}\)

The important point for present purposes is that this optimal distribution characterizes an intertemporal norm that in the congress just before his or her reelection campaign a senator receives a disproportionate share of what there is to get (and/or bears disproportionately less of the burdens others bear). Senators engage in an intertemporal trade, foregoing some of their “fair share” of outlays in congresses more distant from the re-election date in exchange for getting more than this share close to re-election. Their staggered terms enable this.\(^ {12} \)

In summary, we have a simple theoretical argument—stripped of many real-world features to be sure—that suggests a preference of senators to concentrate outlays in the latter congresses of a senator’s electoral cycle (back-loading). In contrast, in many economic contexts the tendency is the opposite of back-loading, pressing instead toward smoothing payoffs across all periods (concave utility function), or even front-loading (positive discount factor). Retrospective voting and recency bias, however, promote this back-loading of benefits—in particular, the extra weight voters give to the recent past relative to the more distant past induces senators to support an institutional arrangement that concentrates their share of outlays into the congresses that do them the most good.\(^ {14} \) Our empirical analysis provides an initial test of whether the Senate back-loads earmarks in the manner suggested by this theoretical account. Before proceeding to examine this question, however, we embed our simple model of the staggered-term \( \text{WHYDFML} \) Senate in the broader context of bicameralism and contested credit claiming.

### Bicameralism and Contested Credit Claiming

We assume funds appropriated for a pork barrel project have an unambiguous state-and-district address. Since a project is earmarked to a geographic destination, this allows the two senators and one member of the House delegation from the state to claim credit in principle for it. A legislator may try to provide direct and verifiable evidence to constituents of the lengths to which he or she has gone to secure the result. But often legislators engage in cheap talk. For example, many of the staff members we interviewed commented on the competition over credit claiming through press releases. One Senate Appropriations subcommittee staff director told us that he would only tell members of one particularly quarrelsome Senate delegation what projects their state received in the subcommittee markup when representatives for both senators were present in his office to hear the news at the same time. We know of few attempts, in the more than three decades since Mayhew (1974) coined the concept, to provide microfoundations for credit claiming. This is a problem inasmuch as many elected officials are potentially in a position to claim credit for a particular project.

Here we initiate an analysis of how contested credit claiming might influence pork barrel politics in a legislature with a staggered-term upper chamber. To do so we develop an illustrative three-state example of how a lower chamber whose members face reelection in each period and prefer a universal distribution of pork would optimally respond to an upper chamber that back-loads appropriations to the states of senators standing for reelection.

To begin we assume that in each congress each chamber divides \$1 among three states generating chamber-specific pork vectors with elements \( s_{ij} \) and \( h_{ij} \), which

\(^{12}\) Given the monotonicity assumption—\( \pi \) is weakly increasing in all its arguments—there is often a temptation to defect from this norm. This may occur if a senator early in her term of office is recognized and proposes to keep “too much” of the dollar for herself, giving a smaller than optimal amount to the senator about to face his voters. In effect, there is a temptation to secure extraordinary outlays even when it is not a senator’s “turn.” A simple punishment regime deters this temptation. If a senator should secure outlays for her state out of turn in violation of the norm, then the other senators punish her by not allowing outlays to her state in the congress in which she faces reelection. It may be shown that this punishment is credible and is sufficient to deter norm-violating behavior.

\(^{13}\) Our equilibrium claim is predicated on the assumption of indefinite repeat play. If there is any uncertainty about whether the game will continue, our claim must be modified. Specifically, as senators become more uncertain about future play, they will insist on receiving a larger share of pork earlier in their terms. However, this is a matter of degree. At one extreme (if senators knew that the game would end for certain), the cycle would disappear altogether. At the other extreme (if senators knew that the game would continue for certain), the cycle would be at its strongest. However, a discernible cycle should be evident so long as the uncertainty is not too extreme.

\(^{14}\) We have stipulated \( \text{WHYDFML} \) behavior on the part of voters rather than deriving it as rational. That is, we take it as a behavioral regularity and do not, in the present article, provide an explanation of it.
identify Senate and House allocations in congress $i$ to state $j$.\footnote{We assume that each House delegation has one at-large member. This leads to the same conclusions as the assumption that states have an identical number of districts that split the House pork vector evenly. However, it eliminates variation in state size from the model, which is one well-understood source of bicameral tension (see Hauk and Wacziarg 2007; Lee and Oppenheimer 1999). We have explored a model that incorporates states of different sizes and it suggests that the Senate will typically exaggerate the allocations it gives to small states and the House will veer from a universalistic distribution to counteract this Senate bias.} We assume that the final bill simply adds up elements of these vectors to reach a conference pork vector, with elements $c_{ij} = s_{ij} + h_{ij}$. Our interviews suggest that this simplification is surprisingly close to reality. One House Appropriations staff member, for example, described a budget account that was explicitly divided into four with each partisan delegation in each chamber having authority over its share. Other interviews suggested this was the implicit norm for many of the most heavily earmarked accounts, although it was typically not explicitly codified.\footnote{When we asked whether the House adopts the strategy of using excessive appropriations to stake out bargaining positions, the House staff member who described the explicitly divided account informed us that this does not typically happen. One problem he noted with this strategy is that it creates a situation in which a member may lose an appropriation in conference for which he or she has already claimed credit. It is also worth noting that adding up the chamber-specific vectors has the same consequences in our model as assuming the chambers split the difference on their allocation to each state.}

Continuing with the model, we assume that at the end of each congress, all House members face reelection (one at-large from each state). Of the six senators (two from each state) only one from each of two different states faces reelection; neither senator from the third state is up.

We develop our example by considering senators driven by a strong whydfml effect that leads them to prefer an allocation that splits the dollar equally between the two states with senators standing for reelection and gives nothing to the other state. In this context, the Senate pork vector is $(0, \frac{1}{2}, \frac{1}{2})$. For maximum contrast we will assume that members of the House prefer universal distribution of the dollar, making the preferred House pork vector $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$. If the members of a chamber retained full credit for the appropriations made by their chamber (and are not able to claim credit for the appropriations made by the other chamber), then the actions of the other chamber would be irrelevant to them. They would simply implement their preferred chamber-specific pork vectors each period.

\footnote{In this example, we do not treat how Senate delegations share credit for allocations made to their state. The Senate allocation identified in the example is consistent with the assumption that a senator up for reelection from a state at the end of a congress gets full credit for any allocation to his or her state in that congress.}

\begin{table}[h]
\centering
\caption{Optimal House Responses to Senate Back-loading}
\begin{tabular}{|c|c|c|c|c|}
\hline
\textbf{Credit Claimed} & \multicolumn{3}{c|}{\textbf{Pork Vectors}} & \\
\textbf{} & \textbf{Senate} & \textbf{House} & \textbf{Conf.} & \\
\hline
\textbf{a) Both Senate Incumbents Running} & \begin{pmatrix} 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} & \begin{pmatrix} 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} & \begin{pmatrix} 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} & \begin{pmatrix} 0 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} \\
\textbf{b) One Senate Incumbent Retiring} & \begin{pmatrix} 0, 0, 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} & \begin{pmatrix} 0, 0, 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} & \begin{pmatrix} 0, 0, 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} & \begin{pmatrix} 0, 0, 1 \\ \frac{1}{2} \\ \frac{1}{2} \end{pmatrix} \\
\hline
\end{tabular}
\end{table}

However, we want to consider what happens when members of one chamber can claim credit for a share of the allocations to their electoral jurisdiction produced by the other chamber. We formalize this with a single parameter $\gamma \in [0, 1]$, where members of the originating chamber receive credit for $\gamma$ of the allocations going to their states and the members of the other chamber receive $1 - \gamma$. Thus in congress $i$ the at-large House member from state $j$ would receive credit for $\gamma h_{ij} + (1 - \gamma)s_{ij}$ of the conference pork vector $c_{ij}$, while the senators from state $j$ would jointly receive credit for $(1 - \gamma)h_{ij} + \gamma s_{ij}$. On the assumption that the Senate splits its dollar equally between the two states with Senate elections, Table 1a provides illustrations of how the House can adjust its House pork vector to generate a \textit{conference pork vector} that smooths payoffs for House members given various values $\gamma$.\footnote{The House best response allocates $h_j = \frac{\gamma s_{ij} - s_j + 1}{\gamma}$ to the two states that have senators standing for reelection and $\frac{1}{\gamma}$ to the state that does not have a senator standing for reelection and thus was allocated nothing by the Senate. The payoffs for the Senate delegation are prior to any sharing within the delegation or whydfml discounting.}

There are three things to note about these allocations. First, the House is always able to counteract the Senate’s strong whydfml-induced bias and allow its members to enjoy equal payoffs. Second, as we mentioned above, when credit is not shared across the chambers ($\gamma = 1$), the House need not anticipate or react to the Senate allocation because it is by definition irrelevant to the House payoffs. Finally, the total allocation to the states will be more lopsided when the chambers retain more credit for their pork vectors. This is most evident when considering
the extreme values of the sharing parameter. If the members of each chamber retain all of the credit for the chamber’s allocations, then the bicameral allocations that states receive in the fattest congress in a cycle will be almost three times as large as what they receive in the leanest congress \((\frac{2}{3} vs. \frac{3}{5})\). At the other extreme, when the two chambers share credit equally, the allocation to states will not vary because the House can fully compensate for the Senate WHYDFML bias, thereby ensuring smooth payoffs to its members. Thus, the ability of the Senate to satisfy the WHYDFML preferences of its members declines as members of each chamber manage to claim credit for the allocation made by the other chamber.\(^{19}\)

One interesting extension of our simple model is to consider how retirement of incumbent senators might disrupt or distort the Senate cycle and how this would influence the House response. If our WHYDFML premise is correct, then a retiring incumbent has little incentive to fight for pork (though our interviews suggest they still make routinized requests), and, more importantly, the chamber has little incentive to support an allocation giving a positive amount of pork to the retiring incumbent’s state. In our three-state example, the Senate could adopt a pork vector of \((0, 0, 1)\), giving all of the dollar to the state of the only incumbent standing for reelection.\(^{20}\) If the Senate made this allocation, the optimal response of the House would change as reflected in Table 1b.\(^{21}\) The basic dynamics do not change as long as the members of each chamber retain two-thirds or more of the credit for their chamber’s appropriations. Below that point the budget of the House is insufficient to fully smooth the payoffs to its member as is apparent in the row of the table where the sharing parameter, \(\gamma\), is \(\frac{3}{2}\).\(^{22}\)

In sum, we embed the WHYDFML effect, the Senate electoral cycle, and a House preference for universalism in a theoretical framework in order to demonstrate how contested credit claiming affects the interchamber allocation of pork. Below we develop hypotheses that apply the basic insights of our approach to the real world of appropriations politics.

### Hypotheses

Our first hypothesis grows from our previous theoretical work on the Senate electoral cycle. The illustrative example above adopts a version of the WHYDFML effect that induces maximal back-loading—to the point that the equilibrium allocation in the Senate would give nothing to a state in which neither member is standing for reelection. Our other theoretical treatments (Muthoo and Shepsle 2006; Shepsle, Dickson, and Van Houweling 2004) do not depend on such a strong recency bias and allow the possibility of a more muted cycle.\(^{23}\) Thus, while the extreme WHYDFML bias in the illustrative development above is unlikely, we nevertheless anticipate that a state’s position in the electoral cycle and whether it has a running incumbent will affect its success in securing Senate appropriations:

**H1 (Electoral Cycle):** The electoral cycle in the Senate induces the appropriations process in that chamber to favor states with incumbent senators standing for reelection compared to states with no Senate election or an incumbent retiring.

Our illustrative model explores the potential for the staggered-term Senate electoral cycle to create bicameral tensions in the appropriations process. One conclusion

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\(^{19}\)We have not yet formally demonstrated that the Senate back-loading pork vector and the House best response to it are in equilibrium. To do so requires us to give consideration to the issue of how senators not up for reelection from a state claim credit for pork received by the state in those years they are not up. This adds a complication to our analysis that is not relevant to the empirical work to follow (it concerns intrastate issues for a senatorial delegation), so we defer resolving it here.

\(^{20}\)The Senate could also adopt a more sophisticated response by reallocating some of the money that would have been claimed by the retiring incumbent to the incumbent that is not up in the cycle, so that the incumbent who is running does not achieve disproportionate gains from the retirement decision of the other incumbent in his or her cohort.

\(^{21}\)The House best response allocates \(h_j = \frac{1}{2} \gamma\) to the two states that do not have senators standing for reelection (and thus were allocated nothing by the Senate) and \(1 - \frac{1}{2} \gamma\) to the state that does have a senator standing for reelection. This response generates universal credit-claiming payoffs for members of the House, except when the chamber’s budget constraint binds and it is impossible to equalize \((\gamma < \frac{3}{2})\).

\(^{22}\)Another possible extension of the model would incorporate the partisan goals of House and Senate caucuses. This could complicate the punishment strategies that sustain the cyclical and countercyclical patterns in the House and Senate. On the one hand, the members of either party might balk at punishing their copartisans if they defected from the cyclical deal because punishing them could reduce the probability that their party would hold a majority after the next election. On the other hand, members of each party might realize that an optimal distribution of pork within their party across an electoral cycle would provide the best chance for their collective success. Moreover, this desire for a partisan majority could provide extra motivation, beyond that provided by the interests of individual incumbents, for the cyclical patterns in the Senate and the countercyclical ones in the House. Given the traditionally bipartisan politics of appropriations, we do not start with this more complicated partisan model.

\(^{23}\)Even voters with a recency bias might, for example, remember and punish their senators if they actually left the cupboard completely bare for an entire congress.
we reach is that the incentive for the House to take into account actions of the Senate depends on the degree to which House members are able to claim credit for appropriations that are initiated in the Senate and vice versa. The model suggests that only if each chamber shared equal credit for the appropriations of the other chamber would the House choose to equalize outlays across states and thus fully compensate for the cyclical bias of the Senate. However, if the House shares at least some of the credit for Senate actions, then we expect that if there is a cycle in Senate appropriations there will be a somewhat less distinct countercycle evident in the House. Our second hypothesis is:

\[ H2 \text{ (Countercyclical Response): The House appropriations process will partially compensate for the cyclical bias inherent in the Senate process.} \]

Data and Analysis

CAGW Data

Our empirical analysis is based on a dataset of appropriations compiled by the Citizens Against Government Waste (CAGW). On its website the CAGW identifies pork that the Congress added to appropriations legislation for each year since 1995. The list is compiled by CAGW researchers who examine appropriations bills for the projects that meet at least one, and usually two, of seven criteria. In practice, most of the pork consists of projects not in the administration’s budget request and added by only one chamber or in conference. The CAGW identifies the state that benefits from each project (if possible) as well as the stage in the appropriations process where it was added. This allows us to evaluate our hypotheses about how the appropriations process operates in the Senate as well as how the chambers strategically interact. We employ the earmark data for a 10-year period, 1995–2004. There is an observation during this period for each subcommittee-state-year. Thus, the dataset initially contains 6,500 observations (13 Senate Appropriations subcommittees × 50 states × 10 years), 4,300 of which remain when we eliminate jurisdictions (see below) that did not add any CAGW-identified pork to an appropriation bill in a particular year.

There are at least three possible concerns about these data. The first concern arises because the dataset only includes projects that survived in the final bill. Thus it does not, for example, allow us to observe whether the House succeeds in removing projects that originated in the Senate bill and favored senators facing reelection. This cuts against our finding an in-cycle effect in the Senate and might also make it difficult to observe strategic interaction between the chambers—in this sense the data we are using offer a conservative test of our hypotheses.

The second concern arises from the fact that CAGW uses the initial presidential budget request as a baseline. If this budget request itself is shaped strategically, then we may be misestimating the total impact of biases in the congressional appropriations process on the distribution of pork across states. If, on the one hand, the administration attempts to mute the cyclical biases in the two chambers with its initial budget request by underproviding projects for in-cycle states, then the CAGW data might capture an overreaction from the two chambers. This could lead us to overestimate the strength of the chamber-specific biases, but only because the administration is already responding to these very biases. If, on the other hand, the administration request seeks to curry favor with in-cycle senators, then the CAGW data could understate the chamber-specific biases. Either way, the CAGW data are unlikely to lead us to infer that cyclical effects exist if they do not.

Finally, the data only capture appropriations as they are made, which might or might not be when members accrue the majority of credit for them. There is the possibility of a lag between when Congress appropriates and when a member can claim credit. For example, the credit a legislator gets from funding a bridge may come when the ribbon is cut rather than when funds are allocated to

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25See the last row of Table 1a, where the House counter to the Senate allocation produces two-thirds of a dollar going to each state (district).

26These are as follows: requested by only one chamber of Congress; not specifically authorized; not competitively awarded; not requested by the president; greatly exceeds the president’s budget request or the previous year’s funding; not the subject of congressional hearings; or serves only a local or special interest.
begin construction. If this is the case, then we might see senators pursuing longer time-horizon projects earlier in their terms and instant hits later, which would attenuate the earmark cycle we expect. Another consideration that might attenuate cycles has to do with seeking credit at various stages—authorization, appropriation, outlay—from different groups in the geographic constituency. Credit claiming, in short, is complex and multifaceted. To the extent that the CAGW measure of appropriations projects is an imperfect indicator of the multiple opportunities for credit claiming, it might not ebb and flow with Senate electoral cycles in accord with our hypotheses.

Despite these reservations, we believe the CAGW data are well suited to addressing our chamber-specific hypotheses. We should be clear that we are not examining the full-blown budget-authorization-appropriation cycle in Congress; that is a much larger task. Rather we want to see whether traces of the effects our theoretical analysis implies are evident in the data on appropriations. We are skimming the cream off of the appropriations process and this limits the generality of our empirical analysis. However, our goal is to assess a fundamental intuition about how the chambers interact in this restricted setting, with an eye toward the possibility that similar dynamics may be present in legislative contexts that are more complex, contingent, and difficult to analyze empirically.

Table 2 displays the average number of CAGW pork projects per state in the period 1995–2004 that were added by the House, the Senate, or in conference; they are classified by Appropriations subcommittee jurisdiction. There are five subcommittees that the CAGW almost never identifies as adding particularized benefits to appropriations bills during the period we study: District of Columbia, Foreign Operations, Homeland Security, Legislative, and Treasury. For the purposes of the remaining analysis we exclude these subcommittees. In the remaining nine jurisdictions the average number of CAGW-coded additions per state from the Senate ranges from a low of 1 project per state for the Defense subcommittee (note that Military Construction is a separate subcommittee) to a high of 5.9 for the Veterans Affairs and Housing and Urban Development subcommittee. The range across jurisdictions is slightly wider in the House and in conference. One notable outlier in conference is the Labor and HHS jurisdiction, which relies almost exclusively on the conference venue to earmark bills.

Table 3 displays the average number of CAGW-coded additions per subcommittee-state in each year in our dataset. There is a strong trend over time in the average amount of pork per state. In the Senate, for example, the average number of projects for each state grows from less than one per subcommittee to around four over the 10-year period of analysis. The growth in the amount of CAGW pork added in the House and, particularly, in conference is even more substantial. The CAGW claims that

### Table 2 Average # of Project Additions per State by Subcommittee (FY 1995–2004)

<table>
<thead>
<tr>
<th>Subcommittee</th>
<th>Senate</th>
<th>House</th>
<th>Conf.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2.02</td>
<td>1.46</td>
<td>0.18</td>
</tr>
<tr>
<td>Commerce</td>
<td>3.41</td>
<td>1.22</td>
<td>2.45</td>
</tr>
<tr>
<td>D.C.</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Defense</td>
<td>1.00</td>
<td>0.66</td>
<td>0.13</td>
</tr>
<tr>
<td>Energy and Water</td>
<td>1.62</td>
<td>3.64</td>
<td>2.60</td>
</tr>
<tr>
<td>Foreign Operations</td>
<td>0.00</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Homeland Security</td>
<td>0.03</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>Interior</td>
<td>2.79</td>
<td>1.07</td>
<td>1.28</td>
</tr>
<tr>
<td>Labor and HHS</td>
<td>1.45</td>
<td>0.03</td>
<td>16.74</td>
</tr>
<tr>
<td>Legislative</td>
<td>0.00</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Military Construction</td>
<td>1.42</td>
<td>1.33</td>
<td>0.08</td>
</tr>
<tr>
<td>Transportation</td>
<td>4.65</td>
<td>6.11</td>
<td>5.44</td>
</tr>
<tr>
<td>Treasury</td>
<td>0.15</td>
<td>0.08</td>
<td>0.05</td>
</tr>
<tr>
<td>VA and HUD</td>
<td>5.90</td>
<td>6.99</td>
<td>5.39</td>
</tr>
</tbody>
</table>

### Table 3 Average # of Project Additions to a State per Subcommittee by Fiscal Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Senate</th>
<th>House</th>
<th>Conf.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>0.72</td>
<td>0.60</td>
<td>0.07</td>
</tr>
<tr>
<td>1996</td>
<td>0.67</td>
<td>0.70</td>
<td>0.14</td>
</tr>
<tr>
<td>1997</td>
<td>0.88</td>
<td>0.98</td>
<td>0.32</td>
</tr>
<tr>
<td>1998</td>
<td>1.35</td>
<td>0.96</td>
<td>0.90</td>
</tr>
<tr>
<td>1999</td>
<td>1.62</td>
<td>1.51</td>
<td>1.79</td>
</tr>
<tr>
<td>2000</td>
<td>3.65</td>
<td>1.52</td>
<td>3.81</td>
</tr>
<tr>
<td>2001</td>
<td>4.40</td>
<td>2.48</td>
<td>4.67</td>
</tr>
<tr>
<td>2002</td>
<td>3.83</td>
<td>4.22</td>
<td>5.17</td>
</tr>
<tr>
<td>2003</td>
<td>4.43</td>
<td>5.14</td>
<td>6.65</td>
</tr>
<tr>
<td>2004</td>
<td>3.93</td>
<td>5.80</td>
<td>12.80</td>
</tr>
</tbody>
</table>


27Conference earmarking was facilitated by an abrupt change in conference procedures with the Republican takeover of Congress in 1995. Prior to 1995, the “passback” procedure was used for appropriations bills. The House would pass a bill, the Senate would offer a series of amendments to it, and the two chambers would conference only on the specific issues in disagreement. This meant that any provision that violated conference rules (e.g., scope of differences) had to receive a specific vote. Starting in 1995, the Senate
this trend is due to an increase in the number of projects added to bills that meet their criteria rather than a change in data gathering criteria or methods. This is broadly consistent with our interviews and press accounts of a notable increase in appropriations earmarks.

**Analysis of the Electoral Cycle**

The constitutionally defined electoral cycle is exogenous to the fiscal needs of states and other institutional variables that could affect appropriations. This allows us to use a simple tabular analysis to infer the effect of having an incumbent senator seeking reelection on a state’s success in securing projects. As Table 4 shows, states that have an incumbent of either party seeking reelection do better in the Senate appropriations process than states with senators that are “out of cycle.” Furthermore, states that have an in-cycle senator not seeking reelection collect substantially fewer appropriations.

Compared to the baseline category of states without a senator in cycle, having an incumbent standing for reelection leads to a 15% increase in the average number of projects per year over a two-year congress (2.7 to 3.1 per year/per subcommittee) and a similar percentage increase in the average dollar amount of the projects ($5.5 to $6.3 million). The loss when a state has a standing senator who retires is slightly larger on average, with a decline of 30% in the number and dollar amount of projects (2.7 to 1.9 and $5.5 to $3.8 million) secured by these states relative to states without a Senate election. For both comparisons we can be quite certain (p < .01, two-tailed) that the difference in the average number of appropriations did not arise by chance. The same is not true for the slightly noisier average total cost figures, which only reach conventional levels of statistical significance when comparing states with incumbents running to those with incumbents retiring.

The second column of the table suggests that the House exhibits the opposite bias. Compared to states without a Senate election, the House gives on average 11% (2.7 to 2.4) fewer pieces of pork to states with senators running for reelection and 18% (2.7 to 3.2) more to those with senators retiring. Similar but slightly smaller cyclical patterns are evident in the total average dollar amount of House appropriations. While none of these individual differences is statistically significant, the average number of projects that a state receives from each House subcommittee when it has a senator retiring (3.2) is significantly (p < .05) larger than the number it receives when it has a senator running (2.4). The difference of .8 projects per subcommittee counteracts two-thirds of the Senate bias of 1.2 projects in the opposite direction. We also find expenditure patterns consistent with our hypotheses.

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### Table 4 Appropriations and the Electoral Cycle

<table>
<thead>
<tr>
<th>Position in Senate Cycle</th>
<th>Average # of Additions per State by Subcommittee (FY 1995–2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Senate</td>
</tr>
<tr>
<td>Number of items</td>
<td>Incumbent Retiring</td>
</tr>
<tr>
<td></td>
<td>Out of Cycle</td>
</tr>
<tr>
<td>Total cost</td>
<td>Incumbent Retiring</td>
</tr>
<tr>
<td></td>
<td>Out of Cycle</td>
</tr>
<tr>
<td>(millions of items)</td>
<td>Incumbent Running</td>
</tr>
<tr>
<td></td>
<td>Δ Run vs. Retire</td>
</tr>
</tbody>
</table>


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28We cannot rule out the possibility that a senator’s success in securing earmarks will influence her decision to seek reelection. However, we suspect that any resulting selection bias is minimal.
Indeed, nearly 50% of the spending advantage in the Senate going to states with a senator running is eliminated by the House. This does not mean that the House is successfully eliminating the disproportionate appropriations secured by in-cycle senators in their chamber, but instead that the House is allocating less to the states represented by in-cycle senators and more to other states.

In sum, what the Senate giveth, the House (partially) taketh away when one considers the aggregate outcome of the process. We find a positive bias in the Senate toward states with incumbents seeking reelection and a negative bias toward those with incumbents retiring that is consistent with our Electoral Cycle hypothesis, and a pattern of correction in the House consistent with our Countercyclical Response hypothesis.29

An examination of the consequences of the Senate electoral cycle by Appropriations subcommittee jurisdiction conveys the depth and consistency of the interplay between the chambers. The cells in Table 5 display the difference in the change in average number of CAGW projects between states that had incumbent senators standing for reelection and states that had an incumbent retiring as a percentage of the number of projects going to states that had no Senate election. For example, the upper row indicates that in the Agriculture jurisdiction the Senate gave on average 17.6% fewer CAGW projects to states that had incumbent senators retiring than states that did not have an election and 29.2% more to states that had an incumbent running as compared to states with no election. The total difference comparing these two extremes in the Agriculture subcommittee was 46.8% of the baseline number of CAGW-coded appropriations by the subcommittee. The final two columns in the first row indicate that the House counteracted much of this difference by allocating 36.5% fewer projects (relative to the baseline category) to states with running Senate incumbents than to states with retiring Senate incumbents.

For almost every subcommittee jurisdiction the Senate electoral cycle appears to influence the appropriations process in both chambers, with the Senate adding more projects for states that have a senator seeking reelection and the House partially counteracting this bias. One exception is the Labor and HHS jurisdiction, which funded fewer projects for states with senators running than for those that were out of cycle. However, in each chamber this subcommittee typically waits until conference to earmark, and thus the data for Labor and HHS in Table 5 are based primarily on a single congress in which the committee broke this pattern in the Senate. Another exception is the Commerce subcommittee, which allocates more projects to states that have retiring senators than to states with no election. Otherwise the patterns of thrust and counterthrust by the Senate and House across all of the jurisdictions are remarkably consistent.

In sum, the lottery-determined placement of states in the Senate electoral cycle, an ongoing natural experiment set in motion over two centuries ago,30 allows us to

### Table 5 Average Difference in Appropriations per Year Compared to States without a Senate Election (FY 1995–2004)

<table>
<thead>
<tr>
<th>Senate CAGW Items</th>
<th>House CAGW Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Senator Retiring</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-17.6%</td>
</tr>
<tr>
<td>Commerce</td>
<td>15.2%</td>
</tr>
<tr>
<td>Defense</td>
<td>-71.4%</td>
</tr>
<tr>
<td>Energy and Water</td>
<td>-13.3%</td>
</tr>
<tr>
<td>Interior</td>
<td>-26.7%</td>
</tr>
<tr>
<td>Labor and HHS</td>
<td>-48.9%</td>
</tr>
<tr>
<td>Military Construction</td>
<td>-15.4%</td>
</tr>
<tr>
<td>Transportation</td>
<td>-41.7%</td>
</tr>
<tr>
<td>VA and HUD</td>
<td>-34.9%</td>
</tr>
</tbody>
</table>

Note: The Labor and HHS subcommittee typically earmarks in conference. However, it is included in this table because there are two years in which the substantial earmarks were added in the Senate.

29 Crespin and Finocchiaro (2008) offer a careful analysis of CAGW project costs.

30 The main lottery, as noted, occurred in 1788 for the 11 states that had ratified the Constitution by that time. Remaining states were placed in the cycle profile as they were admitted to the Union so
conclude with a reasonable degree of statistical certainty that there is a causal relationship between a state having a Senate incumbent standing for reelection and the number of CAGW projects the state receives from the Senate. The countercyclical allocations we observe in the House have two implications. First, they help dismiss concerns that the patterns in the Senate are due to a chance coincidence of Senate electoral cycles with the appropriation needs and desires of states. If these patterns were due to chance characteristics of the in-cycle states then we would expect them to be echoed in the House rather than to disappear or reverse. Second, they are consistent with our theoretical expectation that the House should anticipate or respond to the cyclical biases in the Senate by making up some but not all of the differences across states in light of shared credit-claiming opportunities.

Next we turn to structured statistical models to evaluate the robustness of our findings. One concern about the tabular analysis is that it does not account directly for the fact that we do not have fully independent observations in our dataset that includes multiple observations for each state and each subcommittee. Furthermore, the different levels of appropriations across subcommittees and over time could introduce noise into the data that could lead to misleading inferences. To respond to these concerns we estimated the statistical models presented in Table 6.

The dependent variables in the first two models (columns 1–2 and 3–4) are integer counts of CAGW pork projects for each subcommittee-state-year. In the case of the Senate, this variable ranges from 0 to 74 additions from a single subcommittee to a state in a year.31 The independent variables are the now-familiar electoral cycle categories (with the excluded category being states without a Senate election) and dummy variables for each subcommittee jurisdiction and each fiscal year. The standard errors are estimated with a robust sandwich estimator and clustered for subcommittee-state pairs.

The negative binomial estimates are transformed into incident rate ratios to allow easy interpretation. For example, the coefficient for having an incumbent senator running is 1.18, which indicates that from any given baseline level of appropriations, having a senator running will yield about 118% of the projects that would be allocated to a state having no election. The coefficient of .80 for having a sitting senator retire indicates that a state will receive only 80% of the projects of a state having no Senate election. These effects are easily distinguishable from the null hypothesis (incident rate ratio = irr = of 1.00) and roughly on par with those we found in the tabular analysis.

The count model for the House provides further support for the findings of our tabular analysis. The estimates indicate that a state with a retiring senator will receive about 114% of the projects it would if it had no Senate election. In contrast, a state with a senator standing for reelection is estimated to receive only about 88% as many projects as it would have if it were out of cycle. Only the latter estimate reaches the conventional threshold of statistical significance, but a test of the hypothesis that the two coefficients are identical to each other (i.e., states that have incumbents running receive the same number of appropriations as states with incumbents retiring) can easily be rejected (p < .01).

One possible concern about focusing on the number of projects a state receives is that this could mask differences in the size of the projects. Our theoretical account suggests the possibility that the Senate would not only allocate more projects to states with senators standing for reelection (and less to those with senators retiring) but also that the projects might be larger (smaller) on average. On the other hand, one might be concerned that the differences we identify in the number of projects allocated to states at different points in the Senate electoral cycle are the result of how senators and representatives choose to spread their appropriation dollars across projects rather than differences in the amount of funds allocated to their states. The final two models in Table 6 (columns 5–6 and 7–8) present OLS regressions on the natural log of the average cost of the appropriations that a subcommittee makes to a state in a year.32 The models for the House and Senate do not provide support for either of these hypotheses. Thus, while the number of appropriations projects that states secure in the House and Senate waxes and wanes with the electoral cycle, the size of each individual project does not seem to be influenced by these same forces.

We estimated two additional models (not reported in the table) in order to check the robustness of our findings further. The first model controlled for agenda-setter

31 Based on our estimates we can reject the null hypothesis that conditional variance of the number of CAGW projects for each venue is the same as the conditional mean, causing the standard Poisson count model to estimate artificially small standard errors. Thus, we estimate negative binomial regressions.

32 We used the natural log to model the declining marginal utility of project outlays. It also reduced the influence of a few very large projects and leads to residuals that appear less heteroskedastic. However, we find similar null results if we do not transform the dependent variables. If a state received no appropriation in a particular jurisdiction in a year, the observation is dropped from this dataset.
### Table 6 Models of Added Appropriations in the Senate and House (FY 1995–2004)

<table>
<thead>
<tr>
<th></th>
<th>Number of Projects</th>
<th>Average Cost of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Negative Binomial</strong></td>
<td><strong>Regression on ln (Average Cost)</strong></td>
</tr>
<tr>
<td></td>
<td>Senate</td>
<td>House</td>
</tr>
<tr>
<td></td>
<td>irr</td>
<td>z-ratio</td>
</tr>
<tr>
<td>Incumbent Retiring</td>
<td>0.80</td>
<td>−2.18**</td>
</tr>
<tr>
<td>Incumbent Running</td>
<td>1.18</td>
<td>3.98***</td>
</tr>
<tr>
<td>No Election in Cycle</td>
<td>1.18</td>
<td>3.98***</td>
</tr>
<tr>
<td>Fiscal Year 1995</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>0.71</td>
<td>−3.49</td>
</tr>
<tr>
<td>1997</td>
<td>0.87</td>
<td>−1.34</td>
</tr>
<tr>
<td>1998</td>
<td>1.30</td>
<td>2.46</td>
</tr>
<tr>
<td>1999</td>
<td>1.48</td>
<td>3.52</td>
</tr>
<tr>
<td>2000</td>
<td>3.70</td>
<td>11.64</td>
</tr>
<tr>
<td>2001</td>
<td>4.49</td>
<td>12.91</td>
</tr>
<tr>
<td>2002</td>
<td>3.29</td>
<td>10.69</td>
</tr>
<tr>
<td>2003</td>
<td>3.38</td>
<td>10.74</td>
</tr>
<tr>
<td>2004</td>
<td>3.02</td>
<td>8.61</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0.39</td>
<td>−5.12</td>
</tr>
<tr>
<td>Commerce</td>
<td>0.56</td>
<td>−3.61</td>
</tr>
<tr>
<td>Defense</td>
<td>0.17</td>
<td>−3.91</td>
</tr>
<tr>
<td>Energy</td>
<td>0.31</td>
<td>−6.27</td>
</tr>
<tr>
<td>Interior</td>
<td>0.58</td>
<td>−2.97</td>
</tr>
<tr>
<td>Labor and HHS</td>
<td>0.23</td>
<td>−8.12</td>
</tr>
<tr>
<td>Military Construction</td>
<td>0.29</td>
<td>−8.91</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.78</td>
<td>−1.73</td>
</tr>
<tr>
<td>VA and HUD</td>
<td></td>
<td></td>
</tr>
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<td>Constant</td>
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<td></td>
</tr>
<tr>
<td>n</td>
<td>4300</td>
<td>4300</td>
</tr>
<tr>
<td>log likelihood</td>
<td>−8354</td>
<td>−6848</td>
</tr>
</tbody>
</table>

Note: The dependent variable for the first models is the number of projects added to appropriations bills in the specified chamber in a subcommittee-state-year. The dependent variable for the second models is the natural log of the cost of the average project added. The standard errors are clustered for subcommittee-state pairs.

*p < .10, **p < .05, ***p < .01.

status in each chamber. The Baron-Ferejohn divide-the-dollar approach that we adopted as the basis for our model of the bargaining process implies that players with agenda-setting power gain a disproportionate share of the dollar being divided. In the context of the appropriations process, agenda-setting power rests primarily in the hands of Appropriations Committee members. Among this select group, subcommittee members, and particularly the ranking members of party subcommittee delegations, have even greater agenda prerogatives (Fenno 1973). Thus, accounting for membership in this select group of agenda setters might further reduce the random variation in our results and add precision to our estimates. However, in the parlance of experiments, it can be argued that this variable is “posttreatment” with respect to the exogenous electoral cycle. It is, for example, possible that senators are assigned to important agenda-setter positions in the run-up to a close election just so they can gather more electorally valuable appropriations. If this were the case, then controlling for this 33 At the beginning of the 107th Congress, Senator Tim Johnson (D-SD) was given a seat on the panel because he was believed to be vulnerable in the 2002 election cycle to John Thune, South Dakota’s popular at-large member of Congress. Johnson ultimately defeated Thune by 524 votes after a campaign in which he touted his ability to deliver earmarks to South Dakota from his seat on the
effect in a model would tend to understate the true importance of the cycle. We find that agenda setters receive substantially more appropriations in their chamber than others. Furthermore, the estimates of the cyclical effects remain but are attenuated to some degree in both chambers as the posttreatment analogy would suggest. However, when we estimate models that distinguish different electoral cycle categories by party (dummies for majority senator running, majority senator retiring, minority senator running, minority senator retiring) as well as dummy variables indicating the partisan composition of the Senate delegation, we do not uncover any significant differences in the effects of the Senate electoral cycle on appropriations associated with majority status.

Another potential effect of agenda-setting power is reflected in the prospect that members of the majority party will exploit their numerical advantage, enabling them to take a disproportionate share of the discretionary pie. More directly relevant to our theory is whether the majority directs more resources to its incumbents who are standing for reelection and/or prevents the minority from pursuing this same strategy. The appropriations process is famously nonpartisan, but it is possible that partisan comity has broken down in the increasingly polarized atmosphere in Congress in recent years. Our interviews were informative on this point. The majority and minority staff on Appropriations subcommittees in the Senate to whom we talked all claimed that the majority party did not take an unreasonably large share of appropriations. At the same time, they emphasized how the mechanics of the process are structured through partisan channels: Democratic senators who desire a project make the request to the Democratic delegation on the subcommittee of jurisdiction and similarly for Republicans. The partisan committee delegations, in turn, make decisions about whether to fund these requests independently although the majority has the final say on each one. Thus, while we do not expect a bias toward the majority, the mechanics of the request process allow for the two parties to adopt different internal strategies for appropriating discretionary monies.

However, when we estimate models that distinguish different electoral cycle categories by party (dummies for majority senator running, majority senator retiring, minority senator running, minority senator retiring) as well as dummy variables indicating the partisan composition of the Senate delegation, we do not uncover any significant differences in the effects of the Senate electoral cycle on appropriations associated with majority status.

Perhaps this is because of the longstanding norm of bipartisanship in appropriations that many subcommittee staff mentioned during our interviews, but the bipartisanship also seems to serve a practical purpose. For example, a House staffer described how Tom DeLay directed the committee to zero out any earmarks for Rep. Stephanie Herseth (SD-AL) after she narrowly won a special election. Instead, Republican and Democratic staff on the committee conspired with Herseth to rename projects in the bill to remove any obvious district affiliation. Staff said they took actions like this because they recognized the need for minority support to pass bills. The story in the Senate, where rules favor the minority, was similar. As one Republican staffer said, "It takes UC [unanimous consent] to go to the bathroom around here." His implication was that cooperation with the minority was required to pass his bill. Similarly, one minority staffer speculated that it is because the minority would "bring the whole committee. Thune later won election to the Senate by defeating Senate Democratic Leader Tom Daschle. (Kane, Paul. "Senate Democrats Take Care of Vulnerable Incumbents. Johnson, Landrieu Snag Seats on Appropriations to Help Bring Home the Bacon Over Next Two Years." Roll Call, January 15, 2001.)

Interestingly, we find some evidence that each chamber counteracts the favorable bias in the other chamber for its agenda setters. Thus, states with Senate agenda setters suffer in the House process and vice versa.

It is also worth noting that opportunities for partisan agenda manipulation are limited when the standard procedures for considering appropriations bills are followed. Typically, appropriations bills are considered under an open rule in the House (Legislative Branch appropriations are the only exception) and, in accordance with Senate rules, are open to amendment in the Senate. They routinely receive substantial numbers of amendments in both chambers. For example, between FY1997 and FY2006, 80% of the Senate appropriations bills were voted on individually on the floor, and 92% of these bills were amended. Our interview data suggest that it is common for earmarks to be added as part of a "manager's amendment" offered by the chair and ranking member as part of an effort to build floor support for the bill. Members can attempt to remove an earmark by offering an amendment to strike it—but this is a rare and unsuccessful practice. It should also be noted that points of order in the Senate can also be raised against nongermane amendments and amendments that are "legislative" in nature. Recently, the 110th Congress adopted new rules requiring public disclosure of earmarks and, in the Senate, permitting points of order against earmarks made in conference. These new rules were not in effect during the time period of our dataset. The only major exception to these typical procedures for floor consideration occurs when bills are wrapped into an omnibus appropriations conference report and never receive a stand-alone vote on the floor of one or both chambers. In these atypical circumstances there might be more opportunity for partisan maneuverings relative to bills passed by more standard procedures.

See Crespin and Finocchiaro (2008) for an analysis that suggests the majority party does enjoy a disproportionate share of the dollar value of CAGW appropriations. We find some support for this claim. However, one difficulty with assessing this claim is that the effect of being the majority party is identified in our model by the fact that the Republican party held the Senate majority from 1995 to 2000, lost it to the Democratic party in 2001–2002, and regained it in the 2002 election. One could reach firmer conclusions either way if there were more reversals of the partisanship of majority status. One potential explanation for a majority bias in the size but not in the number of appropriations is offered by Balla et al. (2002). They argue that the majority allocates a substantial share of appropriations to the minority to protect itself from criticism, but reserves particularly valuable projects for members of the majority party.
goddamn thing down” if the majority did not allow them to offer help to their members at election time.

In sum, the findings of our tabular analysis are strengthened by statistical models that control for heterogeneity across subcommittee jurisdictions and across time and for other institutional factors.

**Conclusion**

Our analysis provides strong support for our theoretical claim that the Senate electoral cycle shapes the appropriations process. We leverage the exogenous electoral cycle to conclude that the Senate allocates substantially more CAGW projects and dollars to states in congresses when they have an incumbent senator standing for re-election compared to congresses when they do not have a senator standing for reelection. The Senate also allocates noticeably fewer projects (and dollars) to states that have a sitting incumbent who is retiring at the end of a congress. These combined effects mean that a state can expect appropriations for almost 45% fewer projects if its incumbent senator retires than if the senator were to run.

The *Countercyclical Response* hypothesis also receives support from our analysis which suggests that overall, and in nearly every jurisdiction considered separately, the House corrects for Senate cyclical bias appropriating fewer projects to states that have senators standing for re-election and more to those with senators retiring. In sum, we find that the House blunts the Senate bias, reducing it by nearly two-thirds.

One might suspect that these cyclical patterns simply result from senators being more active in seeking appropriations in election years and their counterparts in the House taking note of this. Our interviews suggest that the story is more complicated. Subcommittee staff relate that senators actively push for earmarked pork barrel projects *all the time* because the marginal cost of doing so is quite small with the existing staff apparatus and a routinized request process. It may seem more plausible that the depressed level of appropriations associated with retirement is due to senators less aggressively pursuing them. While this might be the case, our interviews suggested that their offices still formally processed and regularly pursued requests even after their retirement decisions.37

Most appropriations committee staff volunteered that they differentiate whose projects will get support on the basis of who is, to use the staffers’ term of art, “in cycle,” and we believe their choices and those of their principals are key to establishing the patterns we find. One Senate subcommittee staff director, for example, reported that the staffs of senators who are out of cycle will often complain about not receiving a marginal earmark, but will typically accept the explanation that their requests were denied in order to prioritize those “in cycle.” He explained that there were some Senate offices that were well known for nevertheless elevating their complaints to the “member-to-member” (i.e., senator to ranking Senate subcommittee member) level. In his jurisdiction, the subcommittee staff tried to anticipate which Senate offices would take this route and “shorted” them even further in the initial markup so the ranking member would have something to offer when the inevitable complaint came. Overall, this process makes requesting appropriations earmarks easy, putting the onus on the subcommittees and their staffs of evaluating the relative policy and political merits of member requests. This conveniently allows senators, continuously throughout their terms, to claim credit publicly for going to bat for home-state constituents, while actually delivering at the right time—in the run-up to election.

Put together, our theoretical and empirical analyses suggest that the chamber-specific appropriations processes have marked biases that echo across the Capitol. The interplay between the electoral motive of legislators and the *whynot* preferences of voters pulls Senate appropriations away from the smooth flow that members of the House would prefer. Yet our theoretical model suggests that the bicameral structure of the legislature blunts these chamber-specific tendencies, and our empirical analysis provides support for this.

From a modeling perspective, we introduce the concept of *contested credit claiming* to a model with simple, and admittedly heavy-handed, assumptions. We anticipate that it will prove important as we move toward examining more complex theoretical settings. The empirical payoffs from our preliminary efforts to elaborate this concept suggest that it potentially provides a broad and fruitful line of research.

Our study is of course restricted to the most mal- leable of appropriations—those for earmarks and other relatively minor discretionary programs. One reason to care about these small-beer spending measures is that

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37 Staff on each Appropriations subcommittee routinely survey members early in the process, encouraging them to submit project requests in a timely manner. In the House, the committee has instituted an automated process with a web form that representatives’ offices complete online. In both chambers, members typically submit a substantially longer list of requests than can be funded. This allows them to inform their constituents and other interested parties that they have made formal requests. However, the subcommittees require the offices to prioritize their serious requests. These prioritizations are closely guarded secrets.
they have been exploding over the past decade, as seen in our data and in other indicators. One of these indicators that we encountered face-to-face is the number of former appropriations staff (a few of whom we interviewed) who now make a healthy living in a cottage industry that hardly existed 15 years ago—lobbying for earmarks. Although most of the money the government spends is not yet within the reach of those who seek earmarks, they are managing to claim a growing share of programmatic, discretionary spending. To hear the more veteran Appropriations staffers tell it, the part of the sky they hold up is now falling.

But there is a more general message here. Our findings provide an example of why the strategic interaction that characterizes bicameralism has important consequences that would not be evident if one focused only on aggregate outcomes or the actions of one chamber in isolation. By analyzing aggregate outcomes, one would miss the fact that the staggered terms of the Senate push toward different policies than the simultaneous terms of the House. Likewise, an exclusive focus on appropriations by the Senate would lead one to conclude incorrectly that Congress as a whole distributes appropriations earmarks in a cyclical and inefficient manner. This would overlook the fact that bicameralism compensates for much of the bias caused by the Senate electoral cycle. These findings are of more general interest. They should prove valuable in understanding congressional politics in substantive areas outside of appropriations politics. They should also help shed light on bicameral politics in other settings, e.g., American state legislatures. Finally, they demonstrate the promise of using a combination of theoretical and empirical approaches to study how different institutions, with different time horizons and bargaining tools, interact in the production of public policy.

References


