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American Politics Research 2010 38: 959
DOI: 10.1177/1532673X10369529

American Politics Research
38(6) 959–985

DOI: 10.1177/1532673X10369529
http://apr.sagepub.com
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Abstract

Distributive politics represents one of the most important and controversial aspects of legislative policymaking. In the U.S. Congress, controversies over distributive politics are most evident in the area of legislative earmarking. In this article, we employ a unique set of data matching earmarks to their legislative sponsors to assess the leading explanations of distributive politics. We find that members of the majority party do considerably better than equally situated members of the minority. Moreover, party leaders target earmarks to those holding pivotal agenda-setting positions and to electorally vulnerable members. These findings have direct implications for both the extensive political science literature on distributive politics and the practical politics of earmarking reform.

Keywords

U.S. Congress, distributive politics, earmarks, pork barrel, party leadership

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The allocation of limited benefits across political constituents represents one of the most important—and perhaps contentious—aspects of democratic governance. Not surprisingly, scholars have devoted considerable attention to understanding what factors shape distributive outcomes in a legislative setting and to explain the success (or lack thereof) of legislators in securing these benefits. Some explanations stress incentives for universalism in distribution (e.g., Weingast, 1979). Others suggest strong partisan effects (e.g., Levitt & Snyder 1995) or an advantage for those legislators in institutional positions to influence the allocation of resources (e.g., Ferejohn, 1974). More recently, scholars have also argued for strategic, interinstitutional effects induced by bicameralism (e.g., Shepsle, Van Houweling, Abrams, & Hanson, 2009).

Much of the literature that has attempted to test these arguments empirically has focused on the U.S. Congress. While this literature has generated important insights, it has been limited by data availability and thorny inferential problems. Because Congress has long shrouded the earmark process behind a veil of secrecy, previous studies have relied on the geographic location of projects to make educated guesses about their congressional patrons.[1] This approach, however, is fraught with difficulty. The location of a project within a U.S. House district, for example, may result from the efforts of the House representative, the two senators from that state, or the efforts of someone else entirely. This problem multiplies if a project crosses district or state boundaries, as many do. In short, backing-out firm conclusions about political power within legislatures from the geographic location of projects suffers from significant inferential problems.

The inability fully to test theories of distributive politics is especially problematic given the foundational nature of distributive theories to the study of legislatures. In this article, we attempt to overcome this problem by examining a unique source of data that provides information on the individual sponsors of legislative earmarks. Recent reforms of the congressional appropriations process require the public disclosure of all spending earmarks and their individual sponsors in both the House and Senate. This change in the rules allows researchers, for the first time, to comprehensively match legislative earmarks with their individual legislative sponsors, that is, with those legislators who explicitly throw their support behind a particular project. Because these data identify the sponsors of each earmark, we can trace how earmarks are allocated at *the individual legislator* level, making it possible to link characteristics of legislators to their success (or lack thereof) in securing these resources.

Theoretical Explanations for the Allocation of Distributive Benefits

Scholars have offered a number of theories to explain the allocation of distributive benefits across legislators. In this section we apply, and in some cases extend, insights from the leading theoretical models of distributive politics to earmark distribution. This will in turn guide our subsequent empirical analysis.

Coalition Size

One influential set of arguments has focused on the *size* of the coalition that receives benefits. This body of work has identified two countervailing tendencies. On the one hand, legislators who seek to maximize their share of distributive benefits face strong incentives to restrict the size of the majority coalition to the minimum required for passage—the logic of Riker's minimum-winning coalitions (Riker, 1962). On the other hand, there are institutional features of the legislative process that temper the pure majoritarian logic and create incentives for forming supermajority coalitions. For example, uncertainty over which of the possible minimum-winning coalitions will form, and fear that an individual will be left out of the winning coalition, can lead to universal coalitions (Shepsle & Weingast, 1981; Weingast, 1979). Similarly, institutional features that endow "left out" members with opportunities for introducing delay or splitting a coalition (such as open amendment rules or a right to prolong debate) create incentives to extend benefits beyond a minimal-winning coalition, especially as legislators become impatient during the bargaining process (Baron & Ferejohn, 1989).

Partisan Targeting and Institutional Power

Formal models that focus on the size of coalitions have largely considered an "environment without parties"—legislators are treated as individuals that bargain directly over benefits. Congress, of course, is characterized by parties, and the division of members into parties may have important implications for distributive politics. Nevertheless, the underlying logic of the party-free models has important implications for distributive politics in the presence of prestructured coalitions. The spirit of Riker's argument suggests that—all things being equal—the majority party would prefer to target these benefits at its own members. However, because minority party members can exercise

some influence in the legislative process (e.g., through procedural maneuvers that create delay), the majority party has an incentive not to push a partisan allocation to its limits but to provide the minority party with some benefits (Binder, 1997). In the particular case of earmarks, incentives for the expansion of the coalition are likely to be reinforced by the threat that the minority party can raise "wasteful spending" as an election issue. As Balla, Lawrence, Maltzman, and Sigelman (2002) have argued, fear of public scrutiny therefore provides an additional reason to "cut in" the minority in order to avoid concentrated blame for wasteful projects. This logic suggests that the earmark process may be characterized by a "modified partisanship." The majority party has reason to favor its own members, but it will extend some benefits to the minority in order to reduce opposition.

Indeed, a number of studies have found moderate evidence for a broad distribution of benefits across all legislators, yet with some bias toward the majority party (Balla et al., 2002; Bickers & Stein, 2000; Carsey & Rundquist, 1999; Crespin & Finocchiaro, 2008; Herron & Theodos, 2004; Levitt & Snyder, 1995). It is worth noting, however, that these studies were forced to rely on the geographic incidence of federal projects rather than actual sponsorship of earmarks. Our analysis below allows us to circumvent this problem and to assess the partisan balance of earmark distribution more directly.

The distribution of earmarks *within* parties poses a problem that is perhaps more interesting than the distribution of earmarks *across* parties. To the extent that benefits like earmarks promote the goal of reelection, each individual member would prefer—all else equal—to secure as many as possible. At the same time, the collective interests of party members may be better served by a more targeted distribution, for example, to protect vulnerable seats. Importantly, even if all members of a party acknowledge the general collective interest in targeting distributive benefits to advance the party's fortunes, doing so represents a serious collective action problem. Each individual member will typically have reason to place his or her own narrow consumption ahead of the general collective interest. Mutual recognition of this problem provides a reason to assign party leaders a key role in determining the distribution of such goods and enforcing that distribution on their members (Cox & McCubbins, 1993; Rohde, 1991). In the context of the earmark process, this argument suggests that members have an interest—acting through party leaders—to create an allocation process that is responsive to the demands of individual legislators while also advancing the party's collective purposes (e.g., gaining or retaining majority status).

In doing so, party leaders confront a variety of considerations in balancing the individual and collective interests of their party members. Benefits can be used as "selective incentives" to reward members who provide collective benefits for the party, including persuading legislators to vote for legislation that they might not otherwise support (Evans, 2004). To the extent that earmarks enhance the electoral prospects of members who receive them, party leaders can make use of targeted allocations of distributive benefits in order to advance the aggregate electoral goals of the party. Most obviously, they can provide vulnerable members—such as those in competitive districts and/or newly elected freshmen—with extra resources.

The central role for party leadership in the distribution of earmarks is not, of course, a perfect tool for advancing collective party interests. To distribute benefits, and enforce that distribution, party leaders must occupy institutional positions that allow them to do so—most important, by constructing the proposals that are considered and controlling critical agenda-setting positions (Cox & McCubbins, 2005). However, once leaders are endowed with the power to construct proposals, they are also in a position to secure extra earmarks.

These arguments speak to the incentives confronting party leaders in distributing earmarks *within* a party. Naturally, one might expect that leaders of the minority party will be more constrained in their ability to pursue these incentives. The majority—even if it is willing to "cut in" the members of the minority party—may not allow the minority free reign in distributing earmarks among its members but rather direct the allocation itself. Importantly, however, we believe that this is not the case (i.e., that party leaders in the majority *as well as in the minority party* are able to target earmarks to advance the collective interests of their respective parties). We believe so for two reasons. First, the main purpose of extending benefits to the minority is not to "pick off" individual members in order to pass a single piece of legislation (although this certainly happens on occasion); rather, the larger purpose is to prevent minority party obstruction and to limit the potential for the minority party to make "pork barrel" spending an election issue (Balla et al., 2002). These purposes would likely be undermined by *not* providing the minority with discretion in allocating its share of earmarks.[2]

Second, conversations with congressional staff suggest that this is how the process actually unfolds: A total budget for earmarks is set, it is divided among majority and minority party, and party leaders are then given discretion in distributing these resources among their respective members. Members of the spending committees have been forthright about this practice. For example, in

2007, Senator Tom Harkin (D-IA), chairman of the Senate Committee on Appropriations, Subcommittee on Labor, Health and Human Services, and Education, had the following to say about the allocation of earmarks:

> Here's what I do. I handle the Democrats and [Pennsylvania's Arlen Specter, the panel's ranking Republican] handles the Republicans, and he's always done that with me. So I let him vet the Republicans. I don't have time to do all that. He has to take care of all that, not me. (Higa, 2007)

Bicameralism

Finally, scholars have recently highlighted that the potential for strategic considerations arising out of the bicameral nature of Congress can affect distributive politics. Specifically, Shepsle et al. (2009) argue that the staggered nature of Senate elections—with only one third of the chamber up for election in a given cycle—can shape the ebb and flow of earmark allocations. To the extent that voters exhibit a "recency bias" in their electoral decisions (Fiorina, 1981), senators prefer to concentrate distributive benefits in the last years before their reelection bid rather than early in their term. Because all senators face this incentive, it creates the potential for a "log roll" in which benefits are disproportionally allocated to senators confronting immediate reelection (Shepsle et al., 2009). Moreover, Shepsle et al. (2009) argue that the cyclical nature of distribution in the Senate will have implications for the distribution in the House. Specifically, they argue that party leaders in the House, anticipating that senators facing reelection will receive a disproportionate share of earmarks, will adjust earmarks in the House to reduce the distribution to members whose states are going to be favored because they have a senator facing reelection.

There is an additional feature of the U.S. Senate that has received little attention to date but may have an important effect on the ability of senators to secure earmarks: overlapping jurisdictions. Two senators represent the same state. This overlap opens up an intriguing strategic possibility. Senators who expect that their "partner senator" will be successful in securing a particular earmark can attempt to "free ride" on these efforts by simply requesting the same earmark, hoping to claim part of the credit for "bringing home the bacon." If such free riding occurs, senators who are paired with a partner who is likely to be successful in the earmark process will appear more "successful" than those who do not have such partners because they are able to sign on to earmarks that their partners are able to secure. Thus, for the Senate,

we expect that—holding constant the personal characteristics of a senator—senators who are partnered with senators who possess the characteristics we have identified as important in the earmarks process will do better than those who are not.

In summary, the literature on distributive politics in Congress suggests that the distribution of earmarks within the House and the Senate is potentially shaped by coalitional, partisan, institutional power, and bicameral considerations. In the next section, we discuss the data that allows us empirically to assess these explanations.

Earmark Data

The data for our analysis consists of a detailed listing of every earmark attached to appropriations legislation during the first session of the 110th Congress. The data are taken from the committee reports attached to each appropriation bill. Under the new rules passed at the beginning of the 110th Congress, the committee reports accompanying appropriations bills must disclose earmarks and their sponsors. Each listing includes an itemized account of the title of the earmark, the amount to be spent, a brief description of its purpose, the federal agency charged with carrying out the request, and, critically for our interests, the name of the sponsor(s).[3]

Our definition of an earmark follows directly from the current standing rules of the House and Senate. In the House of Representatives the definition is as follows:

> The term "earmark" means a provision or report language included primarily at the request of a Member, Delegate, Resident Commissioner, or Senator providing, authorizing, or recommending a specific amount of discretionary budget authority for a contract, loan, loan guarantee, grant, loan authority, or other expenditure with or to an entity, or targeted to a specific state, locality, or Congressional district, other than through a statutory or administrative-driven or competitive award process. (U.S. House Rule XXI, Clause 9).

The Senate version is identical except they substitute the term "legislative directed spending item" for the phrase "earmark" (U.S. Senate Rule XLIV, para. 5).

It is worth noting that this definition may exclude other projects that fall under the colloquial understanding of "pork barrel" projects. But throughout this article, where we refer to pork projects, we are referring to the explicit

definition of earmarks offered above. This definition may lead to some slight differences with previous studies that have relied on different data sources. Most notably, a number of past empirical studies of earmarks rely on data supplied by the budget watchdog organization Committee Against Government Waste (e.g., Crespin & Finocchiaro, 2008; Shepsle et al., 2009). The Committee Against Government Waste annually culled through congressional committee reports and, using a self-created coding scheme, classified projects as "earmarks." Scholars then took the geographic location of these projects and assumed that the politicians representing those locations were responsible for garnering the project. Now that Congress mandates the release of earmark sponsorship information one can directly link earmarked projects with their legislative sponsors.

For the bulk of our analysis we will focus on the *number* of earmarks (rather than the total monetary value) because many of the benefits of earmarks that legislators are likely to be interested in depend primarily on how many earmarks a legislator can secure rather than the total amount of money in those earmarks. Each individual earmark provides a separate opportunity to claim credit. More earmarks also provide greater opportunities to spread the rewards across different support groups back home (Stein & Bickers, 1995). As Stein and Bickers argue, "Whereas an extremely large project may produce extensive positive externalities in the district, a variety of fiscally modest grant awards provides many different constituencies the opportunity to identify a project that is closely tied to their interests" (p. 122). Finally, focusing on the number of earmarks is consistent with recent literature on the earmark process (Evans, 2004; Shepsle et al., 2009). Nevertheless, we will also present analysis based on the (logged) dollar amount of earmarked projects received by each legislator.

Note that not every appropriations subcommittee included earmarks. Of the 12 appropriations bills, earmarks were included in 8 House bills and 10 Senate bills. Altogether this totaled up to 7,149 earmarks in the House and 6,515 in the Senate. In the House the four Appropriations Subcommittees not reporting earmarks were the Subcommittee on the Legislative Branch, the Subcommittee on State and Foreign Operations, the Subcommittee on Military Construction and Veterans Affairs, and the Subcommittee on Homeland Security. In the Senate the two Appropriations Subcommittees not reporting earmarks were the Subcommittee on the Legislative Branch and the Subcommittee on State and Foreign Operations.

There are some important issues to note with the data. First, because a number of earmarks had multiple sponsors we reshaped the data to create an observation for each earmark sponsor. We then simply counted up the number

of earmarks each representative or senator sponsored. We excluded anyone who received zero earmarks. In each case, these were members who had gone on record to oppose earmarks (nine in the House and three in the Senate).

Second, because our analysis focuses on the earmarks contained in the originating committee reports, one might wonder how many of these proposed earmarks survived into the final version of the bill signed into law (i.e., amended out of the bill on the floor or deleted in conference). Conversations with House staffers indicate that once an earmark is in the committee report it is highly unlikely to be taken out later. This is confirmed by the data. For fiscal year 2008, 99% of the earmarks that originated in either the House or the Senate (in other words, our data set) survived into the final law.[4]

Results

We begin by showing the basic distribution of earmarks secured by members of the House and Senate (Figure 1). Of the 435 House members, all but nine received at least one earmark. And in the upper chamber, 97 senators were given at least one earmark.[5] The average representative garnered 19 earmarks while the average senator received 87. Moreover, there is substantial variation in the number of earmarks members secure. In the House, for instance, the number of earmarks ranges from 1 to 86. In the Senate, the number ranges from 2 to 276. From one perspective the distribution offers some support for universalistic accounts of distributive benefits. Almost everyone received an earmark. Yet from another perspective, the ample variation shows that more than a strict universal allocation of earmarks is taking place.

The House of Representatives

We begin by examining the differences between majority and minority members. Looking at the averages across the two parties, one finds substantial differences. House Democrats averaged 22 earmarks compared with an average of 16 for Republicans ($p < .01$). These findings gibe with previous studies that have found a partisan bias in federal outlays (e.g., Bickers & Stein, 2000; Carsey & Rundquist, 1999; Levitt & Snyder, 1995). Though these results are certainly suggestive of partisan differences they also potentially mask interesting variation within the parties. For this, we turn to a multivariate analysis. Because our dependent variable is a count, an event count model is the most appropriate statistical technique. Because the distribution of earmark counts likely violates assumptions of independence and homogeneity (i.e., securing one earmark makes getting additional earmarks easier to accomplish), we

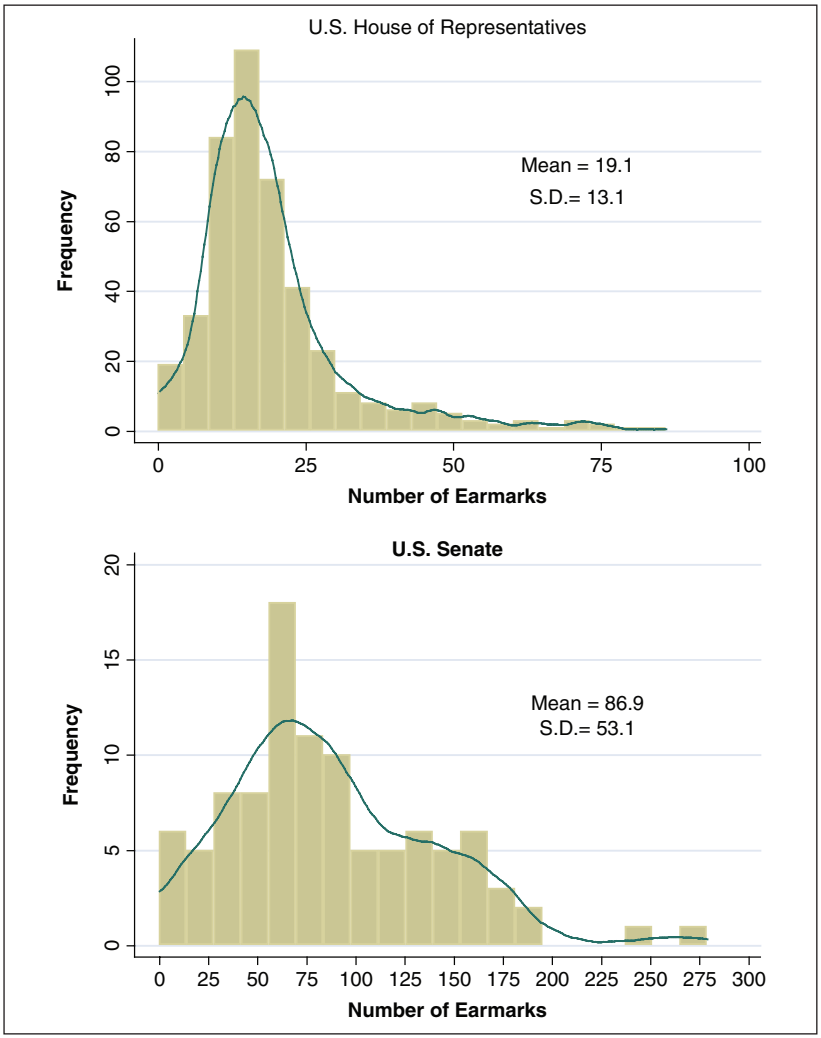

Figure 1. Individual level distribution of earmarks in the House and Senate
Note. This figure presents a histogram and density plot of the number of earmarks received by individual representatives and senators.

estimate the model using a negative binomial rather than Poisson (King, 1989). In all the analyses reported below, the dispersion parameter—measuring the degree to which earmarks beget earmarks—is negative and statistically

different from zero, implying that we can safely reject the null (Poisson) assumption of independence and homogeneity.

Our key independent variables tap the institutional and electoral factors we suspect predict earmark allocations. To test the hypothesis that members occupying critical agenda setting, or gatekeeping, positions receive a disproportionate share of earmarks we include dummy variables signifying members of the House Committee on Appropriations and majority party leaders. The latter category comprises the Speaker of the House (Nancy Pelosi, D-CA) and the majority leader (Steny Hoyer, D-MD).

Our next expectation is that party leaders will strategically allocate earmarks to enhance their chances at maintaining (or retaking) majority control. In particular, we expect party leaders to pour earmarks into districts that faced potentially difficult elections in 2008. The prime targets for such a strategy are members from highly competitive districts and freshmen (who have yet to build up a personal vote). To test this we include dummy variables for freshmen status and for members from marginal districts. Following standard definitions in the literature, "marginality" is defined as a member who won their preceding election with less than 55% of the two-party vote. In addition, we control for two additional effects. The first is seniority, which is measured as the number of years served in the chamber. We might expect that more senior members, who have "learned the ropes" and have made connections in the legislature, are better able to play the earmarks game than their more junior colleagues. Second, we control for a potential effect hypothesized by Shepsle et al. (2009). In the Senate, those senators who are facing reelection may do better in the earmarks process than those who are not.[6] As a result, Shepsle et al. contend that members of the House may anticipate the "election boost" provided by the Senate to a particular state and therefore cut the allocations to House members whose states are going to benefit from it. To test for this possibility, we include a variable that indicates whether the representative comes from a state in which one of the senators is up for reelection. Finally, because we suspect that the substantive impact of these institutional and electoral forces may vary across parties, we interact the variables of interest with a party dummy variable to generate separate estimates for the majority party (the Democrats) and the minority party (the Republicans).

The results are presented in Table 1. Turning first to the variables tapping institutional power, the coefficients for majority status, membership on the Appropriations Committee, and party leadership are all significant and in the expected direction. Of course, the estimation of these nonlinear coefficients, combined with numerous interactions, does not lend itself to easy interpretation. To see the magnitude of these effects more clearly, we converted them

Table 1. Earmark Allocations in the House of Representatives

Dependent Variable = Number of Earmarks	
Independent Variables	Coefficient Estimates
Majority Party	0.253* (0.103)
Majority Leader	1.310* (0.147)
Seniority	0.0194* (0.009)
Seniority × Majority Party	0.004 (0.011)
Appropriations Committee Member	1.035* (0.087)
Appropriations Committee Member × Majority Party	–0.174 (0.107)
Freshman	–0.354* (0.138)
Freshman × Majority Party	0.597* (0.159)
Marginal Seat	0.447* (0.082)
Marginal Seat × Majority Party	–0.281* (0.118)
Senate seat up for election in state	–0.013 (0.065)
Democratic Senate seat up for election	0.025 (0.080)
Constant	2.392* (0.089)
N	427
Log-likelihood	–1411.8228

Note. Maximum likelihood estimates with a negative binomial distribution. Standard errors in parentheses.
*$p < .05$.

into the predicted number of earmarks, illustrated in Figure 2.[7] Setting seniority at its mean, and setting the marginal district and freshman dummies to zero, we find striking differences within and across parties. Democrats on the Appropriations Committee members averaged 45 earmarks compared with 16 for Democratic rank-and-file. Republicans on the Appropriations Committee averaged 35 earmarks, and nonappropriation Republicans averaged only 12. Both the differences within and across the parties are statistically significant.

Moreover, party leaders win big in the earmark process. The predicted number of earmarks for leadership status is 61. Clearly those serving in an agenda-setting position receive a disproportionate share of the earmark largesse. This is dramatically illustrated by considering a list of the top 20 earmark recipients. Of these top "earners," all either served on the Appropriations Committee or held a leadership position. Indeed, heading the list is Majority Leader Steny Hoyer (D-MD) with 86 earmarks. Two complementary reasons explain the extraordinary success of party leaders and appropriations members. First, if any appropriation bill, loaded with earmarks, is to pass it needs to clear the veto gates held by the Appropriations Committee and party leaders. As a result these legislators will have to be necessary participants of any

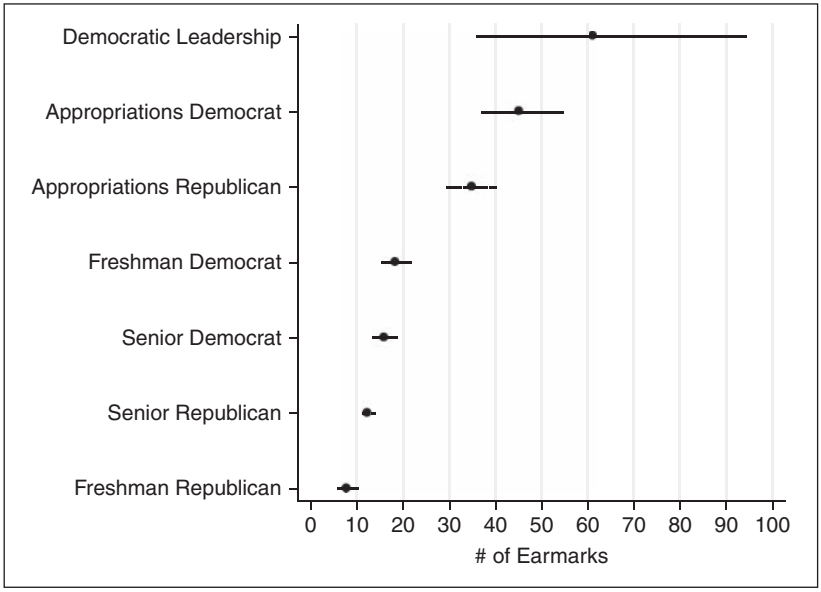

Figure 2. Impact of institutional position on predicted earmarks in House
Note. This figure presents the mean expected number of earmarks along with 95% confidence intervals. Solid lines are Democrats and dashed lines Republicans. The predictions were generated with CLARIFY. For nonfreshmen, seniority was set at its mean value (6.9 years).

winning coalition. This puts them in a position to collect tolls, or rents, in exchange for letting the bill travel through their jurisdiction (Cox, 2010; Ferejohn, 1974). Second, these "bonus" earmarks can be viewed as payments for providing services that improve the collective welfare of their party (Cox, 2010). One of these welfare-enhancing services, we argue, is to strategically allocate earmarks in a way that aids the collective goal of winning (or maintaining) majority status.

Indeed, when we turn to the marginal district and freshman variables we find clear evidence of strategic targeting of earmarks. Both coefficients are positive and significant. To discern the effects of these variables we have plotted the predicted number of earmarks across different categories of rank and file members in Figure 3. Turning first to whether someone is from a marginal district (i.e., won with less than 55% of the two-party vote), we find evidence that these electorally vulnerable members were targeted with earmarks. Among Democratic freshmen, electorally vulnerable members averaged 22 earmarks while safe members averaged 16. For senior Democrats,

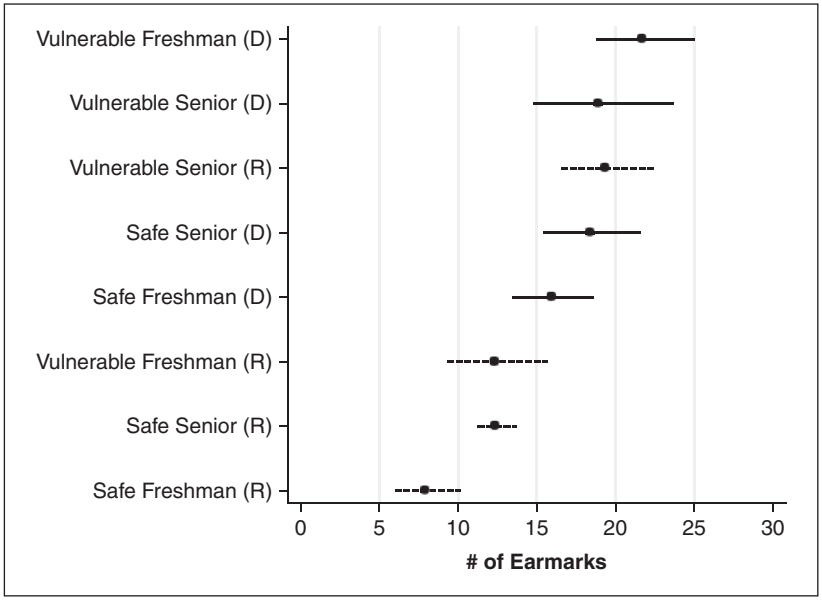

Figure 3. Impact of electoral position on predicted earmarks in House
Note. This figure presents the mean expected number of earmarks along with 95% confidence intervals. Solid lines are Democrats and dashed lines Republicans. The predictions were generated with CLARIFY. For nonfreshmen, seniority was set at its mean value (6.9 years).

electoral vulnerability was less significant: Vulnerable members garnered approximately 19 earmarks compared to 18 for those with safe seats. On the Republican side, vulnerable freshmen landed an average of 12 earmarks compared to 8 for those who were not vulnerable. Safe senior Republicans averaged 12 earmarks while electorally vulnerable senior Republicans pulled in an average of 19. Thus, both within and across parties we find significant differences in earmarks related to electoral marginality: Those who occupy vulnerable seats are likely to receive a significant boost in earmarks.

The predicted number of earmarks allocated to freshmen is particularly interesting. Needing earmarks to establish a personal vote, one might suspect that leaders will direct earmarks to new members. This is confirmed in Table 1, although only for the majority party. Figure 3 reveals further subtlety. Among vulnerable Democratic members, freshmen gained a predicted number of 22 earmarks compared to 19 for vulnerable seniors - a slight boost. Among safe Democrats and among Republicans, however, freshman status conferred no advantage. Of the 43 Democratic freshmen, 30 come from

districts taken away from Republicans. Of the 13 Republican freshmen, on the other hand, 11 inherited a district previously held by Republicans—in other words, Democrats faced much greater pressure to secure the districts held by their freshmen, and this is reflected in the distribution.

We also find that seniority is positively related to earmarks, although the magnitude of the effect is not especially large. Each term in the House increases the number of earmarks by a little over half an earmark. The coefficient indicating that a representative resided in a state where one of the senators is seeking reelection was not anywhere near significant. This is contrary to the expectation provided in Shepsle et al. (2009), which argues that the House counterbalances the inequalities produced by staggered elections in the Senate.

Overall, these numbers reveal a strongly partisan driven process in which party leaders, broadly conceived, reserve the bulk of earmarks for themselves and distribute the rest in a thoroughly strategic manner. The recipients of "extra" earmarks are those members residing in districts that will determine the difference between majority and minority status.

The Senate

As in the case of the House, there is some prima facie evidence that majority party status has a significant impact on the distribution of earmarks in the Senate. On average, majority party senators secure just over 100 earmarks, compared with just under 78 for members of the minority party ($p < .03$). To see whether these differences are robust to potential confounding factors, and to investigate our hypotheses about the distribution of earmarks *within* each party, we once again turn to a negative binomial analysis of the total number of earmarks secured by a senator. The basic estimation strategy is the same as in our analysis of the House. However, to evaluate the additional expectations derived from the institutional differences between the Senate and the House, we introduce several additional variables.

First, we include a variable indicating senators whose seat is up for election in the current cycle. To capture the potential impact of "free riding," made possible by overlapping jurisdictions, we include dummy variables that indicate whether a senator is partnered with a senator from the majority party, whether he or she is partnered with a senator whose seat is up for election, and whether he or she is partnered with a senator who serves on the Senate Committee on Appropriations. As in the case of our House analysis, we interact with all the substantively interesting independent variables with majority party, since we do not have strong, a priori reasons to believe that the substantive impact of

Table 2. Earmark Allocations in the Senate

Dependent Variable = Number of Earmarks	
Independent Variables	Coefficient Estimates
Majority Party	0.879* (0.206)
Majority Leader	0.866* (0.186)
Seniority	0.027* (0.005)
Seniority × Majority Party	–0.022* (0.007)
Appropriations Committee Member	0.528* (0.137)
Appropriations Committee Member × Majority Party	–0.118 (0.190)
Freshman	–1.004* (0.124)
Freshman × Majority Party	0.880* (0.235)
Senate seat up for election in state	0.321* (0.121)
Democratic Senate seat up for election	–0.136 (0.186)
Majority Party Partner Senator	0.373* (0.108)
Majority Party Partner Senator × Majority Party	–0.311 (0.181)
Partner seat up for election	0.366* (0.119)
Partner seat up for election × Majority Party	–0.075 (0.202)
State Population (in millions)	0.029* (0.007)
Constant	3.154* (0.141)
N	97
Log-likelihood	–480.924

Note. Maximum likelihood estimates with a negative binomial distribution. Standard errors in parentheses.
*$p < .05$.

each covariate will be the same across the majority and the minority party. Finally, we introduce an additional control variable. Unlike congressional districts, states vary in their population size. Since the number of earmark projects is likely to be sensitive to the population size of a state, we include a measure of state population. Not surprisingly, we find that senators from larger states do better in securing earmarks than senators from smaller states.

The results are presented in Table 2. It is easiest to discuss our findings by considering the four broad categories of effects we expect in turn: partisanship, institutional position within the chamber, electoral considerations, and free riding. The substantive impact of majority party status is best illustrated by considering the predicted number of earmarks for "typical" senators. For example, a Democrat with mean seniority from a safe district, who does not serve as a party leader or on the Appropriations Committee, is predicted to receive roughly 69 earmarks. In contrast, a similarly situated Republican senator is predicted to receive only 40 earmarks.[8] Indeed, while the top two

"earmarks getters" in the Senate were Republicans (Arlen Specter, R-PA, and Thad Cochran, R-MS), 7 of the top 10 were Democrats, and among the 50 most successful senators in securing earmarks, only 16 came from the minority party. Clearly, at the individual senator level, partisan affiliation has a substantial impact.

We now turn to the impact of institutional position within the chamber. The analysis indicates that the majority leader—Harry Reid (D-NV)—receives a substantial share of earmarks. Looking directly at the data, the 156 earmarks Reid secured in the bills we analyze put him more than one standard deviation above the mean number of earmarks for the Senate. Similarly, being a member of the Senate Appropriations Committee has a significant and positive impact on the number of earmarks received for members of the majority and the minority party. To illustrate the substantive size of this effect, once again consider the predicted number of earmarks, illustrated in Figure 4. A senior Democrat on the Appropriations Committee is expected to secure around 103 earmarks—a significant increase over the 69 earmarks predicted for a senior Democrat who does not serve on the Appropriations Committee. A senior Republican on the Appropriations Committee is predicted to receive 67 earmarks, also a considerable boost from the 40 earmarks predicted for non-Appropriations Republicans. The advantage bestowed by membership of the Appropriations Committee is also evident in the raw data. The five senators heading the Senate earmark list all serve on the Appropriations Committee. In short, we find clear support for the institutional position hypothesis in the Senate.

Beginning with the effects of seniority, the impact of the covariates becomes more subtle. As in the case of the House, seniority has a positive effect on the number of earmarks a senator is predicted to secure. However, unlike in the House, where this effect exists independent of party, in the Senate, senior status only has a statistically significant effect for members of the minority party (i.e., Republicans). For Democrats, the coefficient estimate (the combined effect of the seniority variable and the interaction term) is indistinguishable from zero. This finding extends to the remainder of the factors we are going to discuss: The impact of each covariate is significant and in the expected direction for the minority party (Republicans) but insignificant (although generally in the expected direction) for the majority party.

First, consider the covariates that are intended to capture the electoral incentives confronting party leaders and senators. In line with the "electoral cycle logic" laid out by Shepsle et al. (2009), we find that minority party senators whose seats are up for election in 2008 are able to secure a greater number of earmarks than senators who must not face the voters in the current

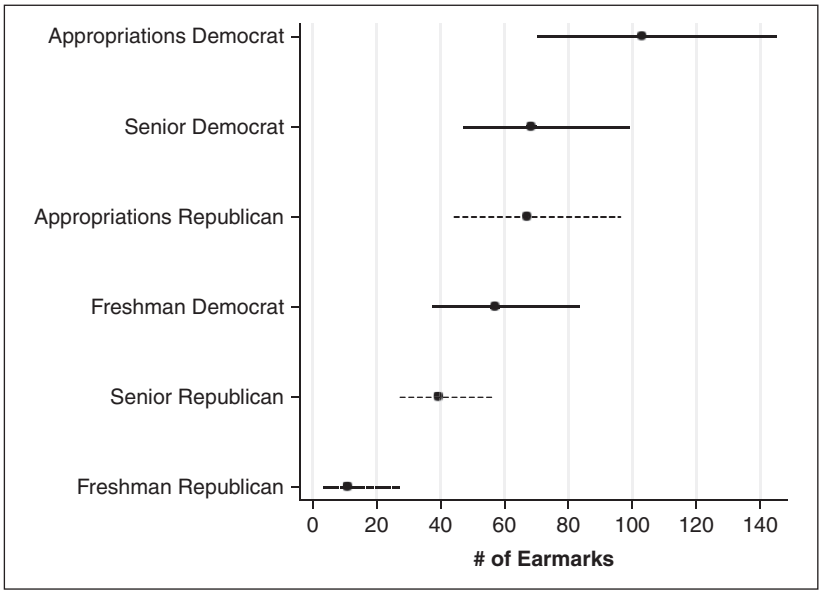

Figure 4. Impact of institutional position on predicted earmarks in Senate
Note. This figure presents the mean expected number of earmarks along with 95% confidence intervals. Solid lines are Democrats and dashed lines Republicans. The predictions were generated with CLARIFY. Seniority was set at its mean value (14.5 years).

cycle. A Republican senator of mean seniority who faces reelection in 2008 is predicted to receive approximately 53 earmarks. In contrast, a Republican who is not facing reelection is predicted to receive only 40 earmarks.

Unlike in the House, we do not find that a close previous election or freshman status leads to greater success in securing earmarks. In fact, for Republicans, freshmen are predicted to receive *fewer* earmarks than their senior Republican colleagues, a finding that is statistically significant. (The lone Republican freshman—Bob Corker [R-TN] —secured only 15 earmarks, compared with an average of 79 for all other Republicans). One interpretation of these findings might be that the kinds of factors that indicate electoral vulnerability (and therefore motivate party leaders to supply these members with additional earmark resources) vary across the Senate and the House. The fact that senators have 6 years before they must face the voters again may very well make the last election result and freshman status less relevant as criteria in doling out earmarks than in the House, where freshmen have only 2 years to raise their profile, and the last election result is sufficiently

recent to be a good indicator of future trends. Instead, it appears that in the Senate, electoral considerations focus primarily on those senators whose "time is up," at least within the minority party. This finding is consistent with the results reported by Shepsle et al. (2009), who demonstrate significant impacts of the electoral cycle on earmark allocations at the state level.

Perhaps our most subtle, and interesting, expectations about the dynamics of the earmark process in the Senate focus on the potential for "free riding" among senators. Does the overlapping jurisdiction of the Senate enable senators whose partners are likely to be successful in the earmark race to reap additional earmarks? Although not uniform, the evidence strongly suggests that it does, at least for members of the minority party. Senators who are partnered with a majority party senator are more successful in securing earmarks than those who are partnered with a member of the minority party. Similarly, those senators whose partner's seat is up for election garner more earmarks than those whose partners are not up for reelection. These effects are highly statistically significant for senators from the minority party (Republicans), but they do not approach statistical significance for members of the majority party. For the minority party, the impact is sizable, as illustrated in Figure 5. For example, a Republican of mean seniority who is partnered with another Republican is expected to receive about 40 earmarks. Simply being partnered with a member of the majority party increases expected earmarks to 57. Similarly, having a partner senator whose seat is up for election increases the expected number of earmarks from 40 to 56. Both these results suggest that "free riding" on the success of the partner senator is an important aspect of doing well in the earmark race.[9]

In summary, the results for the Senate are largely in line with our expectations, and the dynamics of the earmark process in the House, although some subtle differences emerge. As in the House, there is a strong partisan bias in earmark allocations, with members of the minority party being at a considerable disadvantage. Members in an institutional position to influence the distribution of earmarks—especially if they serve on the Appropriations Committee—also do well in the allocation process. For Republicans electoral considerations are important although they play out differently than in the House. Instead of concentrating earmarks on senators who won a close election, or are new to the chamber, earmarks are targeted at senators whose seat is up for election in the current cycle.

The Senate results point to a number of interesting implications. First, the results presented here—based on individual-level data—provide little support for the argument found in recent work by Shepsle et al. (2009). The argument that the House backloads earmarks to compensate for the staggered

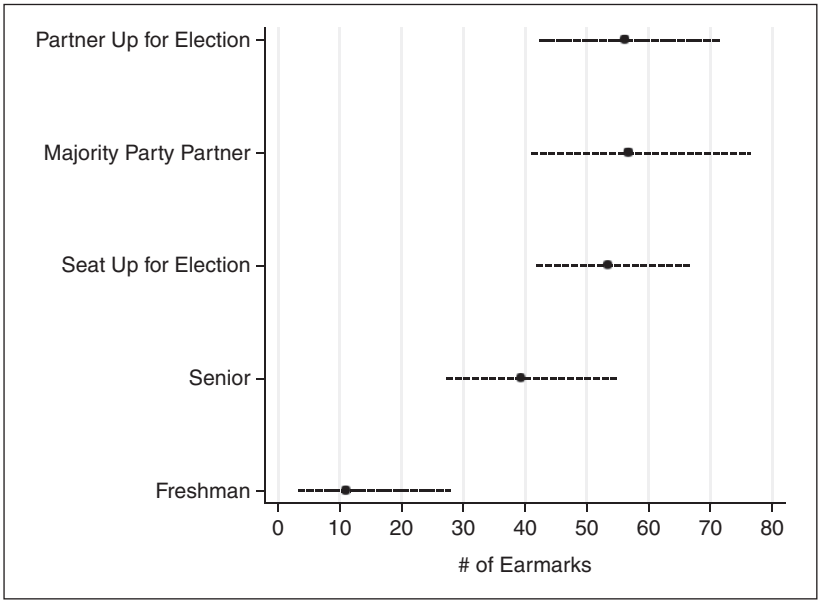

Figure 5. Impact of elections and partner effects on predicted earmarks in Senate (minority party)

Note. This figure presents the mean expected number of earmarks along with 95% confidence intervals. Solid lines are Democrats and dashed lines Republicans. The predictions were generated with CLARIFY. Seniority was set at its mean value (14.5 years).

Senate electoral cycle is not supported at the level of individual sponsorship data. These discrepant findings can most likely be traced back to the data. Shepsle et al. relied on the geographic location of projects to infer legislative allocation patterns. Inferring evidence about individual power and credit-claiming allocations from geographic location data, however, can lead to severe mismeasurement; especially in the United States, where each citizen has three federal representatives in the Congress: their U.S. House representative and their two senators. Earmarked projects can be the result of effort by one or more of these actors and even in some cases the result of actors in other jurisdictions.

Second, the results illustrate fascinating institutional difference between the House and the Senate. Most notably overlapping jurisdictions of the Senate introduce an extra dynamic not found in House districts. The data strongly suggest that senators of the minority party benefit by being partnered with a

senator who is likely to be successful in the earmarks process. Senators partnered with "stronger" partners can hitch a ride by proposing the same earmarks as their partner. Whether this is done through explicit coordination or if the "weaker" partner hitches a ride with an unwilling partner cannot be readily discerned from the data. Nevertheless, the results reveal an important new twist on dual representation in the Senate (Schiller, 2000).

Earmarked Dollars

Because every earmark provides a separate opportunity for "credit taking," we have focused on the number of earmarks as the dependent variable so far. But, of course, earmarked projects vary in size. Larger projects may provide greater credit-claiming opportunities than smaller projects. Thus, it may be worthwhile to examine the magnitude of earmarks, which can be measured by the total dollar amount of a project. In considering total dollar amounts, earmarks that are sponsored by multiple members pose a special problem. The data we have available provide the total amount expended for the earmark. But for earmarks that have multiple sponsors from multiple jurisdictions this amount will be distributed *across* jurisdictions. The impact of the earmark for any individual district—for example, in terms of jobs created, goods and services provided, and so on—is a function of the portion going to the district. Absent data on the precise allocations of earmarked dollars to each particular jurisdiction, we deal with this difficulty by dividing the total amount of the earmark among its sponsors—the most neutral method of accounting. For example, if an earmark worth $10 million dollars had five sponsors, each sponsor was credited with receiving $2 million dollars. Finally, to account for outliers, the dollar amount is logged.

The results, estimated via ordinary least squares, are presented in Tables 3 and 4. For the most part the pattern remains similar to that found when examining the number of earmarks. The results for the House are reported in Table 3. First, institutional position clearly matters. Both leaders and members of the Appropriations Committee do very well. Second, the results support an electoral targeting of earmarks. The coefficients for electorally vulnerable members and freshman are significant. One apparent difference between these results and the count-based results is that the stand-alone Democratic variable is not significant. However, because of the interactive variables in the model, it is important to remember that this coefficient provides the effect of partisanship for a very specific kind of legislator: A representative who is not on the Appropriations Committee, is not vulnerable, is not a leader, and is not a freshman.

Table 3. Dollar Amount of Earmarked Projects in the U.S. House

Dependent Variable = Dollars (Logged)	
Independent Variables	Coefficient Estimates
Majority Party	0.0793 (0.226)
Majority Leader	2.065* (0.148)
Seniority	0.029 (0.020)
Seniority × Majority Party	0.010 (0.024)
Appropriations Committee Member	1.287* (0.151)
Appropriations Committee Member × Majority Party	–0.196 (0.200)
Freshman	–0.310* (0.145)
Freshman × Majority Party	0.629* (0.202)
Marginal Seat	0.386* (0.118)
Marginal Seat × Majority Party	–0.164 (0.166)
Senate seat up for election in state	–0.003 (0.127)
Democratic Senate seat up for election	0.002 (0.166)
Constant	15.69* (0.185)
N	427
R^2	0.287

Note. Ordinary least squares regression estimates. Standard errors in parentheses.
*$p < .05$.

The Senate results tell a similar story. The coefficient for leaders and members of the Appropriations Committee is significant. Moreover, senators up for reelection receive more money. Having a partner in the majority party also matters. As with the House, the stand-alone coefficient on majority status is not significant. But, again as with the House, this coefficient picks up a small subset of Democrats—those not on the Appropriations Committee, not a leader, not up for reelection, and lacking a Democratic partner. In other words, the allocation of earmarked dollars follows a similar pattern to the raw number of projects.

Conclusion

Students of legislative politics have long been concerned with how distributive goods are allocated among members. Theoretically, scholars have argued that distributive politics generates incentives for minimum-winning coalitions (Riker, 1962). These tendencies, however, can be tempered. Uncertainty over whether a legislator will be included in the winning coalition can induce a preference for universal coalitions (Weingast, 1979). Substantially impatient legislators (i.e., those facing electoral risk) can also lead to universal coalitions

Table 4. Dollar Amount of Earmarked Projects in the U.S. Senate

Dependent Variable = Dollars (Logged)	
Independent Variables	Coefficient Estimates
Majority Party	0.514 (0.506)
Majority Leader	1.839* (0.507)
Seniority	0.031* (0.012)
Seniority × Majority Party	–0.019 (0.015)
Appropriations Committee Member	0.809* (0.239)
Appropriations Committee Member × Majority Party	0.337 (0.457)
Freshman	0.164 (0.245)
Freshman × Majority Party	–0.497 (0.605)
Senate seat up for election in state	0.584* (0.231)
Democratic Senate seat up for election	–0.853 (0.566)
Majority Party Partner Senator	0.402 (0.195)
Majority Party Partner Senator × Majority Party	–0.307 (0.447)
Partner Seat Up for Election	0.355 (0.255)
Partner Seat Up for Election × Majority Party	0.284 (0.485)
State population in millions	0.053* (0.014)
Constant	16.76* (0.272)
N	97
R^2	0.3758

Note. Ordinary least squares regression estimates. Standard errors in parentheses.
*$p < .05$.

(Baron & Ferejohn, 1989). Research in the American context has also pointed to the importance of individual credit-claiming. Members of Congress hunt for opportunities "to peel off pieces of government accomplishment for which [they] can believably generate a sense of responsibility" (Mayhew, 1974, p. 53). The end result is universalism. Everyone gets a share of the logroll and an opportunity to claim credit.

Empirically, while the distribution of earmarks appears to follow a norm of universalism in the sense that virtually all members secure some projects, there is wide variation in the number of projects that members bring to their district. In this article, we have found that this variation is explained, at least in part, by the need for parties to resolve a fundamental tension between the individual desire of legislators for earmarks and the collective interests of the party in advancing its electoral fortunes. In other words, while the discovery of a partisan bias in distributive goods has been noted in past studies (e.g., Bickers & Stein, 2000; Carsey & Rundquist, 1999; Levitt & Snyder, 1995), we extend these findings by showing that intraparty dynamics are just as important, if not central, in shaping the allotment of pork-barrel projects.

Party leaders target benefits where the marginal "payoff" for the party is likely to be great: in vulnerable districts. In the House this means that freshmen and members from marginal districts receive more earmarks than rank and file members. In the Senate, the electoral targets are those senators who are up for reelection. At the same time, the institutional arrangements that make such targeting possible also allow party leaders to reap a disproportional share of the benefits for themselves.

In addition to these intraparty differences, we also find clear evidence of the tendency of the majority party to restrict—within limits—distributive benefits. In both chambers, majority party members receive more earmarks than their equally situated minority counterparts. This finding holds even in the supposedly less partisan Senate. Finally—and perhaps most intriguingly—we find that the overlapping jurisdictions of the Senate have an important impact on distributive politics. Senators who are paired with either a member of the majority or someone up for reelection also do well in the earmark game.

Although the findings indicate that members of the majority party receive, on average, more earmarks than the minority, it remains a possibility that this reflects differences between Democrats and Republicans—not differences in majority status. The Democrats, because of different ideological predispositions toward government spending, may demand more earmarks, on average, than Republicans. Absent longitudinal data that straddles a change in majority status one cannot answer this issue definitively. But the results presented here are in keeping with a number of past studies that find congressional districts represented by majority members tend to receive more federal outlays (Balla et al., 2002; Bickers & Stein, 2000; Levitt & Snyder, 1995).

Our approach suggests a number of additional empirical questions worth pursuing. One of our most intriguing findings is that parties systematically target earmarks at vulnerable members in an effort to enhance the party's electoral fortunes. This naturally raises the question of whether earmarks indeed boost vote margins or deter quality challengers from running. The second set of questions concerns interbranch relations. For example, how do the targeted projects requested by the President in his budget fit into this argument? How do House members and senators resolve the problem of claiming credit when their jurisdictions overlap? Empirically analyzing these questions promises to shed new and important light onto distributive politics.

Authors' Note

An earlier version of this article was presented at the Duke University Social Science Research Institute.

Acknowledgment

John Aldrich, Michael Brady, Nathan Monroe, and Brendan Nyhan provided helpful comments and suggestions.

Declaration of Conflicting Interests

The author(s) declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The author(s) received no financial support for the research and/or authorship of this article.

Notes

1. Notable exceptions are Evans (2004, chap. 6) and Lee (2003). But both examine a narrow subset of earmarks. At the state level, Herron and Theodos (2004) examined the allocation of "member initiative grants" across Illinois General Assembly districts.
2. A close analogy would be the committee assignment process.
3. The data on earmarks were generously compiled and made available by the nonpartisan *Taxpayers for Common Sense.* To ensure the reliability of the data, we spot-checked the actual committee reports against the information provided by the *Taxpayers for Common Sense* and found no differences.
4. Excluding these earmarks has no effect on the results.
5. Those not receiving any projects include the well-known "earmark opponents" Senator John McCain (R-AZ) and Representative Jeff Flake (R-AZ).
6. We develop this argument in more detail in the next section.
7. Predicted earmarks were generated using the CLARIFY software (Tomz, Wittenberg, & King, 2003).
8. As for our House analysis, the predicted number of earmarks was calculated using the CLARIFY software (Tomz, Wittenberg, & King, 2003).
9. In a separate analysis, we also looked for evidence of a similar dynamic among senators who are partnered with a member of the Appropriations Committee. The results were far from significant. One possible explanation for this result might be that free riding is most attractive when a senator can make a *credible* claim that he or she should share the credit for securing an earmark. Where a senator is partnered with a member of the Appropriations Committee, this may be a significant hurdle, given the influence of Appropriations members over the earmark process. In consequence, senators whose partners serve on the Appropriations Committee may simply look for other avenues to raise their profile (Schiller, 2000).

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