JANET M. BOX-STEFFENSMEIER
The Ohio State University
PETER M. RADCLIFFE
University of Minnesota
BRANDON L. BARTELS
The Ohio State University

The Incidence and Timing of PAC Contributions to Incumbent U.S. House Members, 1993–94

In this article, we discuss how donor and recipient characteristics affected the incidence and timing of political action committee (PAC) contributions to incumbent members of the U.S. House of Representatives during the 1993–94 election cycle. We contribute to the campaign finance literature by modeling the timing of contributions, which is important because timing affects the perception of political actors about the competitiveness of elections and the loci of power among members of Congress, interest groups, and between members of Congress and interest groups. Split-population event history models allow us to compare and contrast determinants of whether and *when* contributions are made across various types and sizes of PACs.

Decision making in politics involves the choice of not only what action to take, but also when to take it. We concur with Fenno (1986) that if we are to explain political outcomes, studying when events occur is as important as studying what occurred (1986, 9). Context and sequence are important factors to analyze, and studies of legislative activity have increasingly focused on timing. In the campaign finance literature in particular, there is a consensus that "the timing of financial transactions can be critical to their impact, both to the contributor and to the recipient" (Biersack and Wilcox 1990, 236; Glasser and White 1999; Jacobson 1992).

In this article, we discuss how donor and recipient characteristics affected the incidence and timing of political action committee (PAC) contributions to incumbent members of the U.S. House of Representatives during the 1993–94 election cycle. We contribute to the campaign finance literature by explicitly modeling the timing of contributions, which

is important because timing affects the perception of political actors about the competitiveness of elections and the loci of power among members of Congress, interest groups, and between members of Congress and interest groups. We also offer a methodological contribution by using a split-population duration model, which relaxes the assumption that every PAC-incumbent dyad will exchange a contribution, to estimate the effects of candidate and PAC characteristics on both the incidence and timing of contributions. We compare and contrast the determinants of whether and when contributions are made within an election cycle across various types and sizes of PACs.

In Section 1, we review existing work on the timing decisions of PACs. We also describe the timing considerations of candidates and PACs, which we use to investigate contributions in our dataset. In Section 2, we present the data, measurement, and methods. We present the empirical results in Section 3, making explicit comparisons about the effects of various factors on the incidence and timing of contributions from labor and corporate, small and large PACs. We conclude by discussing the implications of these results.

1. Feeding the Political Money Machine[1]

Candidates want their money early. This fact was repeated time and time again by PAC fund-raisers for congressional candidates and by PAC managers.[2] The importance of early money in political campaigns inspires the names of groups like EMILY's List, whose name is an acronym for "Early Money Is Like Yeast," with the associated slogan, "It helps the dough rise."

Jacobson (1992) emphasizes the importance of the timing of contributions to candidates: "In general, money available early in the campaign is put to much better use than money received later. Early money is seed money for the entire campaign effort; it is needed to organize, plan, and raise more money" (1992, 78–79). We know that receiving early money gives candidates maximum flexibility when making expenditures and leads to later fund-raising success (Biersack, Herrnson, and Wilcox 1993; Krasno, Green, and Cowden 1994). Early money also affects the redistribution of money to other party candidates and, thus, of power in the legislative body (Baker 1989; Gimpel 1996; Gurwitt 1990; Heberlig 2001; Herrnson 1997; Jackson 1988). As Heberlig (2001) writes, "Leadership PACs are formed to take advantage of one's current positions to raise extra contributions to achieve goals of personal ambition and/or party maximization" (19). In addition to studying leadership PACs, scholars have analyzed transfers from

candidates' campaign committees to other candidates' campaigns or to a party committee. These fund transfers are separate from leadership PACs and, in the words of Speaker Hastert's "Battleground 2000" plan, are important determinants of incumbents' committee assignments and their rank within committees in the 107th Congress (Heberlig 2001, 1). The receipt of early money may also affect incumbent vulnerability, or simply the perception of incumbent vulnerability (Box-Steffensmeier 1996; Epstein and Zemsky 1995). The empirical literature is mixed on the extent to which, and under which conditions, challenger deterrence actually occurs.[3] Finally, early expenditures have the greatest impact on the final election outcome (Box-Steffensmeier and Lin 1997; Krasno, Green, and Cowden 1994). For this study, we examined the various candidate characteristics that affected whether or not an incumbent received a contribution and *when* during the election cycle the incumbent received it. Do the same factors that influence whether or not one receives a contribution also influence the receipt of earlier contributions?

There is less work on the timing motivations of PACs. Since candidates desire early money, PACs may perceive an early contribution to be worth more than the same contribution later in the election cycle. As one PAC manager put it, they "give early to all their friends—a $5,000 early contribution equals a $50,000 late contribution."[4] On the other hand, McCarty and Rothenberg (2000) point out that PACs may want to delay contributions to reduce uncertainty. An overall constraint for many PACs is that resources exist for only a limited number of early contributions. The fact that early money may be perceived as worth more than the actual dollar amount may exaggerate the differential impact of some PACs. "Surgically given" contributions may make a big difference to a candidate counting on early contributions to act as "seed money" for later contributions. Thus, small contributors may be able to gain a hallowed place in the hearts of some candidates. Do small PACs give early to capitalize on such an opportunity? Or are the constraints on small PACs too onerous to allow for such a strategic calculation? The overall advantage of better-financed groups may simply be further exaggerated when one considers timing. Can the timing decisions of large PACs be systematically explained? If so, do the same factors that affect whether or not a contribution is given lead to earlier contributions, or is a subset of factors important for timing decisions?

Detailed studies of the allocation decisions of PACs have not been empirically investigated with regard to timing. Our work furthers the literature by focusing on the demands and constraints under which contribution decisions are made. Much of the literature treats PACs as

if they are equals in resources, free of encumbrance by their member donors, and making their selections from a relatively passive group of candidates (but see Biersack, Herrnson, and Wilcox 1994, 1999; Herrnson 2004; McCarty and Rothenberg 2000; and Wilcox 1989). In our empirical investigation, we include indicators of budget constraints, distribution of donors, and candidate demand in addition to the typically considered candidate characteristics (such as leadership positions, committee membership, and ideology) to capture the determinants of if and *when* contributions are made within an election cycle.[5] Our work examines the intersection of donor and recipient characteristics to determine how they affect the incidence and timing of donations. In particular, our work on timing is unique and important in the campaign finance literature.

Timing affects the competitiveness of elections, or at least the perception of competitiveness. Which PACs give early money affects the power and leverage of interest groups, which has implications for the health of a competitive election system and a balanced interest-group system. Scholars have long recognized that interest group factionalism raises a number of important and complicated issues. For example, some scholars lament that highly organized and better-financed single-issue groups have an advantage over more-general groups. Timing affects the location of the loci of power among members of Congress, interest groups, and between members and interest groups.

Determinants of Whether and When Contributions Are Made

We considered four factors that might lead to candidates, specifically incumbents, receiving their money at different times: (1) candidate influence, (2) candidate ideology, (3) candidate need, and (4) PAC geography and resources.

Candidate Influence refers to the control a member of Congress exerts over issues of importance to the group (Grenzke 1988; Grier and Munger 1986, 1991; Hall and Wayman 1990; McCarty and Rothenberg 1996b; Sorauf 1988). We examined the hypotheses that tenure in Congress, a leadership position, or membership on a committee whose jurisdiction includes important interests of the group will increase a member's influence over group interests. We hypothesized that as the incumbent's influence over the group's agenda rises, the likelihood of that incumbent receiving a contribution, as well as receiving it early, will increase.

Candidate Ideology or voting history is an important factor to consider when explaining the incidence and timing of campaign

contributions (Gopoian 1984; Herndon 1982; Poole and Romer 1985; Poole, Romer, and Rosenthal 1987). We measured candidate ideology by assessing the levels of support for the interests of labor unions or corporations. Members who have a history of voting for the group's interest can provide the most valuable information (Austen-Smith 1995; Smith 1984, 1989), are most likely to intervene on the group's behalf, and are likely to have less constituent pressure to vote contrary to the group's interests (Grenzke 1988; Grier and Munger 1986). Given the substantial evidence for the ideological stability of members of Congress over their careers, we suspect a PAC has a better chance of mobilizing a friend than persuading an opponent to change his or her stance (Hall and Wayman 1990; Poole 1997). Thus, we hypothesized that incumbents who are proven friends of organized labor or corporate interests through past voting patterns or party affiliation should receive earlier contributions.

Candidate Need taps into electoral vulnerability (Evans 1988; Gerber and Ansolabehere 1995; Radcliffe 1997). As the incumbent's likelihood of winning reelection drops, the likelihood of he or she receiving a contribution also declines. Tight elections generally involve higher spending and additional fund-raising. Some scholars argue that PACs are risk averse and less interested in contributing to struggling candidates (McCarty and Rothenberg 1996b). Other researchers focus on the group's desire to keep its friends in office and incur the gratitude of members (Grenzke 1988). Regardless, small victory margins suggest to both supporters and opponents that the incumbent may be in trouble. The entry of high-quality challengers, either within the incumbent's party or in the opposing party, also leads to a more-difficult reelection campaign. Finally, those candidates who start the election cycle with small reserves may need to seek out more PAC money to fund their campaigns. As for timing, the greater a candidate's need for PAC funds, the less bargaining strength the candidate will have in negotiating with PACs about when the money is received. Complicating matters is the fact that large PACs may institutionalize rules so that money is controlled by different actors, a scenario suggesting that some PAC managers lack control over the timing of a contribution (Bedlington 1994).

Finally, *PAC Geography and Resources* are important factors for determining which candidates receive donations and when (Wright 1985, 1996). Large numbers of PAC members in a candidate's district are expected to influence the group's allocation strategy (Rossotti 1994, 226). Local PAC membership also gives a group greater candidate influence and makes their contribution more effective and legitimate because the group is often involved in the candidate's campaign through volunteers (Denzau and Munger 1986; Grenzke 1989). To maintain

participation, PACs also seek to respond to donor interests (Eismeier and Pollock 1988; Handler and Mulkern 1982; Sorauf 1984), which leads to spending in fund-raising areas. Norms and structures encourage contributions to candidates in the areas where funds are raised, and some PACs have formal rules requiring that money be returned to the original fund-raising areas (Biersack, Herrnson, and Wilcox 1994; Grenzke 1988, 88). Furthermore, some work has suggested that PACs with headquarters in Washington, DC, exhibit a distinctive contribution style because they are involved in more networks (see, for example, Biersack, Herrnson, and Wilcox 1994, 1999; Eismeier and Pollack 1984; and Wilcox 1989). Continuing in that vein, we expected DC PACs to be more likely to contribute to incumbents and to do so earlier.

The PAC's budget size also affects its decisions. Large PACs have more resources available for contributing and are forced by the legal limits on contributions to spread their money around. As PACs grow, there may be declining marginal effects; PACs can run out of acceptable candidates and choose to move some of their money into independent expenditures or other forms of advocacy. Larger PACs have greater flexibility regarding the timing of contributions, whereas small PACs will be constrained by their own budgets. "You have to raise money to spend money" applies equally to candidates making expenditures and PACs making campaign contributions to candidates.[6]

To summarize, four expectations have emerged regarding how the previously discussed candidate and PAC factors affect whether and when contributions are given and received. First, influential incumbents should receive their money earliest. Second, candidates who are ideologically similar to a PAC should also receive their money early. Third, needy candidates will get their money later. Finally, larger budgets and a local PAC membership base should mean earlier contributions for incumbents so that PACs can maximize the "bang for their buck."

Distinguishing between Types of PACs

We examined the contribution behavior of corporate and labor PACs. For theoretical reasons supported by the existing qualitative and quantitative literature, we treated and analyzed labor and corporate PACs separately. Specifically, Sorauf (1988) argues that various factors affect corporate and labor PACs differently. Sorauf expects ideology and partisanship to matter more for labor PACs and an incumbent's institutional assets, such as committee assignments, seniority, and majority party status, to matter more for corporate PACs (see Clawson, Neustadtl, and Scott 1992; Grier and Munger 1991, 1993; Munger 1989;

and Rudolph 1999). Theoretical expectations about the effects of each of the four factors of interest are different for labor and corporate PACs. For example, candidate influence may have a larger effect and candidate need a smaller effect (both may lead to later contributions) for corporate PACs, whereas labor PACs may show a larger effect for geographical constraints, given their contributor bases.

We also find compelling reasons to analyze separately small and large PACs. The literature on campaign finance provides a firm foundation for making this distinction. Smaller PACs are much more constrained in their campaign behavior, having fewer resources and connections (see, for instance, Eismeier and Pollock 1988, McCarty and Rothenberg 2000, and Wilcox 1989). Thus, the effect of PAC geography and resource constraints may be more limiting for small PACs. Relatedly, small PACs may be more likely to consider fewer candidate characteristics when making their allocation decisions. Also, fewer factors should be important in explaining the timing of small PAC contributions because PACs often cannot spend money when they want to do so, simply because it is not yet available. To preserve these differences in the analyses, we examined the factors affecting the incidence and timing of PAC contributions for four PAC types: (1) large corporate PACs, (2) small corporate PACs, (3) large labor PACs, and (4) small labor PACs.

2. Data, Measurement, and Methods

We collected data on the timing of contributions from the Federal Election Commission's 1993–94 Freedom of Information Act data files.[7] The "itemized committee contributions" file contains a record for each contribution made by a PAC during the cycle. We examined all labor and corporate PACs and their contribution behavior toward incumbents in the U.S. House of Representatives in the 1993–94 cycle. To examine the factors leading to a PAC contribution and its timing, we expanded the dataset to contain a record for every pairing of a PAC and an incumbent, whether or not that pair exchanged a contribution.[8] Thus, the unit of analysis in the models is a PAC-incumbent dyad. All corporate and labor PACs were used in creating the dyads. Matching every PAC with every incumbent in the dataset yields a total of N = 58,254 for large corporate, N = 278,502 for small corporate, N = 10,168 for large labor, and N = 36,208 for small labor. In addition to our independent variables, such as the constraints imposed by PAC resources, our models include the typical variables pointed out in the literature as important, specifically, variables capturing voting patterns and electoral

vulnerability (Gopoian 1984; Grenzke 1989; Grier and Munger 1986, 1991; McCarty and Rothenberg 1996a, 1996b; Poole and Romer 1985; Poole, Romer, and Rosenthal 1987).[9]

Measuring Candidate Influence

***Committee Assignments*:** For labor PACs, a dichotomous variable for the *Education and Labor Committee (Education),* which is the major substantive committee for union interests, is coded as 1 if the incumbent was on that committee, and as 0 otherwise. For corporate PACs, a dichotomous variable for the *Energy and Commerce Committee (Energy)*, which has jurisdiction over a wide range of business concerns, is coded as 1 if the incumbent was on that committee, and as 0 otherwise.[10] A dichotomous variable is coded 1 for members serving on any *prestige committees (Prestige):* Appropriations, Budget, Rules, and Ways and Means (see Smith and Deering 1990). Since prestige committees are likely to have input on all substantive legislation, their members may have an easier time raising earlier campaign contributions.

***Seniority*:** The number of years the incumbent has served in Congress.

***Majority Leader*:** A dichotomous variable coded 1 if the incumbent is a member of the majority party leadership.[11]

***Minority Leader*:** A dichotomous variable coded 1 if the incumbent is a member of the minority party leadership.

Measuring Candidate Ideology

Comparative Ratings: For labors PACs, we used *COPE*, an ideological rating ranging from 0 to 100. A score of 100 means perfect agreement with the Committee on Political Education's positions on key votes during the previous congressional session. For corporate PACs, we used *COC*, another ideological rating ranging from 0 to 100. A score of 100 on COC means perfect agreement with the Chamber of Commerce's positions on key votes during the previous congressional session.

***Party*:** A dichotomous variable coded as 1 for Republicans and 0 for Democrats.

Measuring Candidate Need

***Previous Election Margin*:** The percent of the vote the incumbent received in the previous (1992) general election.[12]

***General Election Challenger Quality (Quality)*:** A dichotomous variable coded as 1 if the incumbent faced a high-quality challenger in the general election, and as 0 otherwise. We used the typical definition: A challenger who has held previous political office is considered a high-quality challenger.[13]

***Primary Election Challenger Quality (Primary Quality)*:** A dichotomous variable coded as 1 if the incumbent faced a high-quality challenger in the primary, and as 0 otherwise.

***Beginning Cash-on-Hand*:** The amount of money in the candidate's campaign account at the beginning of the electoral cycle, measured in millions of dollars.

Measuring PAC Geography and Resources

***Union*:** For labor PACs, the percent of the district who belong to the union.

***Home Candidate*:** A dichotomous variable coded as 1 if the candidate is from the state in which the PAC is based, and as 0 otherwise.

***Washington DC PAC*:** A dichotomous variable coded as 1 if the PAC is based in Washington, DC, and as 0 otherwise.

***In-State Contributions*:** Proportion of the PAC's incoming contributions that come from the same state as the candidate.[14]

***Lagged Receipts*:** The PAC's total receipts during the previous (1991–92) election cycle in millions of dollars.[15]

***Lagged Receipts Squared*:** The PAC's total receipts during the previous (1991–92) election cycle in millions of dollars squared.

***Large versus Small PACs*.** We defined a large labor PAC as one that made 100 or more contributions during the cycle. This definition includes the 41 largest labor PACs, 22% of all labor PACs. We define a large corporate PAC as one that made 50 or more contributions during the cycle. Two-hundred and nineteen large corporate PACs constitute 17% of all corporate PACs. McCarty and Rothenberg (1996b) examine large PACs and use the same cutoff for labor PACs that we use here. For corporate PACs, they use a cutoff of 75 contributions, thus only 11% of corporate PACs fall under their definition of large. We found that corporate PACs making between 50 and 75 contributions pooled better with larger PACs than smaller ones.

Having discussed the importance of timing and the four conceptual factors and their measurement, we now turn to a discussion of our methods.

Methods

We used a split-population duration model to determine whether or not a contribution was given and the length of time, measured in days, until it was given as a function of candidate influence, candidate ideology, candidate need, and PAC geography and resources. Because our central question focuses on a measure of time, we needed duration models (Beck 1998; Bennett 1999; Box-Steffensmeier and Jones 1997, 2004). Our innovation to the literature is to study both incidence and timing in one model.[16]

Substantive reasons led us to use the split-population duration model as opposed to a standard duration model (for example, semiparametric Cox or a Weibull model). One of the assumptions of standard duration models is that every observation in the data will experience the event of interest, which is sometimes an unreasonable assumption in violation of a particular theory or understanding of the process under examination. In our case, a standard duration model would assume that every incumbent would eventually receive a contribution from every labor and corporate PAC, both large and small. This is obviously an unrealistic assumption to make regarding PAC contributions; there are certain representatives who will not receive contributions from certain types of PACs. For instance, we do not expect labor unions to contribute to Representative Peter Hoestra, who investigated the Teamsters, or to Cass Ballenger, who tried to "reform" the Occupational Safety and Health Adminstration. These legislative activities are so offensive to unions that we would not expect unions to make contributions to these legislators, even if unions thought that contributing to Republicans en masse would help them. Similarly, we would not expect corporate PACs to contribute to members such as George Miller, the leading environmentalist in Congress, or to Pete Stark, a leader on single-payer health care reform. Unlike standard duration models, split-population duration models, also called "cure" models, relax the assumption that all observations will experience the event of interest. In our case, split-population models do not assume that a PAC will eventually give to every candidate. This method splits the data into two subpopulations: cases that will eventually experience the event, and cases that will never experience the event. If, instead, the assumption that all candidate-PAC dyads will exchange a contribu-

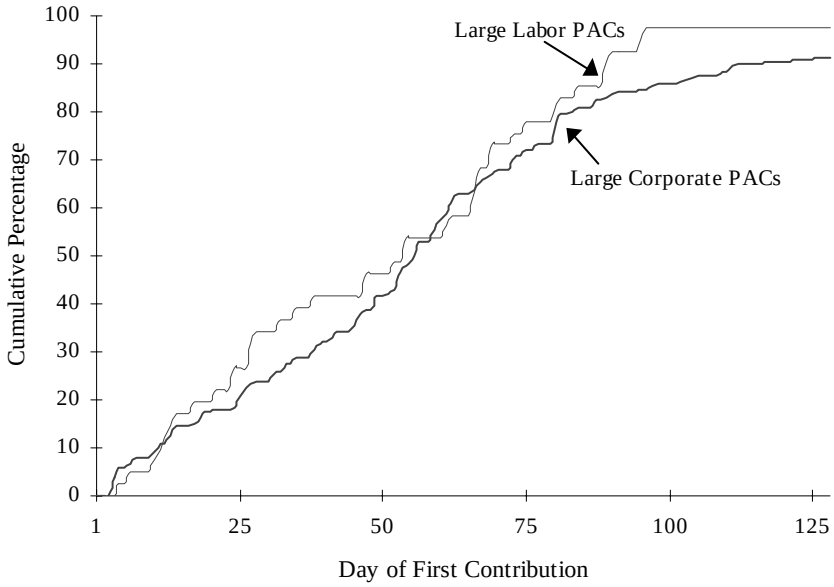
tion was imposed, then the resulting model would be misspecified (see Blossfeld and Rohwer 2002, 274). For these reasons, the choice of a split-population model is critical.

Split-population models estimate via maximum likelihood the proportion of cases that will not experience the event, together with the parameters characterizing the hazard rate for the proportion that will experience the event. The online appendix[17] includes the derivation of the model for standard parametric distributions (see also Schmidt and Witte 1989). The model produces two sets of *simultaneously* estimated coefficients: one set for the incidence of contributions, and another for the timing of contributions. It is important to note that the censoring indicator serves as the dependent variable in the incidence, or "splitting," part of the model. In our analysis, the censoring indicator establishes whether or not a contribution was exchanged for a particular PAC-incumbent pair, so the incidence part of the model estimates the likelihood of a PAC-incumbent pair exchanging a contribution. We modeled the incidence part of the estimation as a logit and the hazard rate as a log-logistic distribution.[18]

Another feature of split-population models is that they allow for differential effects of the independent variables on whether or not the event occurred and its timing. Different covariates can even be included to explain whether and when a contribution occurred. For example, an independent variable may have a positive effect on whether a contribution is made and a negative effect on when it is made. This feature makes the split-population model much more flexible than other duration models. The appeal of the log-likelihood in a split-population model is that observations that never experience the event will contribute information only to part of the function; in other words, the log-likelihood "splits" the two populations (Schmidt and Witte 1988, 1989). Furthermore, estimation of a split parameter, δ (the estimated mean probability of cases experiencing the event), allows us to test whether or not relaxing the assumption that every PAC will give to every candidate is necessary. If it is not, that is, if $\delta = 1$, then the split-population model collapses into a typical duration model. So there is little cost to estimating the split-population model.

Figures 1 and 2 show the timing of first contributions for large and small PACs. We see a sharp contrast between the timing of contributions for large and small PACs (note that the timescales in the two figures differ in range). Almost all large PACs have contributed by the first 100 days of the election cycle, but only about 40% of small PACs have done so. This finding is consistent with interview data, which emphasize the differential availability of funds for small and large

FIGURE 1
Cumulative Percentage of First Contributions for Large PACs

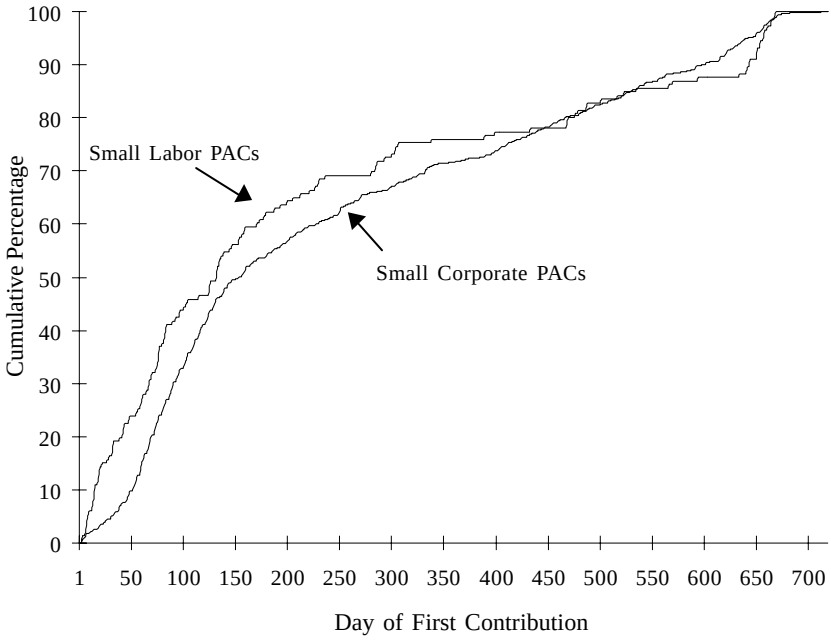


PACs.[19] Roughly a third of large PACs have contributed in the first month of the election cycle, whereas less than 15% of all small PACs have done so. Descriptive statistics also support our rationale for analyzing large and small PACs separately. For corporate PACs, the mean contribution rate is 23.8% for large PACs and only 3.0% for small PACs. For labor PACs, the mean contribution rate is 43.5% for large PACs and 3.5% for small PACs. This evidence indicates that large PACs are, on average, much more likely to contribute to a given candidate than are small PACs.

3. Results: Comparisons and Contrasts

Our empirical investigation shows that the timing of contributions is an important component of campaign finance strategies. Early-money recipients differ in important ways from late-money recipients, and PAC geography and resources serve as substantial constraints that have been overlooked in the literature. In this section, we discuss the fit of the models and present a systematic look at the four factors

FIGURE 2
Cumulative Percentage of First Contributions for Small PACs



central to explaining the incidence and timing of contributions. We then discuss the differences between labor and corporate PAC contribution strategies, as well as between small and large PAC strategies.

Table 1 contains the timing and likelihood results for corporate PACs, and Table 2 contains the results for labor PACs. In Tables 1 and 2, the estimated split should be similar to the observed split for an accurate model. Our models do very well in estimating the actual contribution rate; for example, the rate is estimated as .26 and observed as .24 for large corporate PACs. In all four models (large corporate, small corporate, large labor, and small labor), the assumption that all PACs contribute to all incumbents, which would impose a split equal to 1.00, is clearly rejected. This rejection demonstrates that the split-population model is absolutely essential.[20] Furthermore, the Wald tests show that all models are statistically significant.

In the timing part of the split-population model, positive (negative) coefficients are associated with earlier (later) contributions. For the incidence of a contribution, positive (negative) coefficients are associated

TABLE 1
Split-Population Duration Models, 1993–94 Corporate PACs

	Large Corporate PACs						Small Corporate PACs					
	Timing of a Contribution			Likelihood of a Contribution			Timing of a Contribution			Likelihood of a Contribution		
Variable	Coefficient	SE	*p*	Coefficient	SE	*p*	Coefficient	SE	*p*	Coefficient	SE	*p*
Constant	–5.941	0.063	0.000	–2.454	0.082	0.000	–6.606	0.087	0.000	–5.114	0.094	0.000
Candidate Influence												
Energy	0.099	0.025	0.000	0.904	0.034	0.000	0.013	0.036	0.721	0.684	0.038	0.000
Prestige	0.033	0.019	0.084	0.376	0.024	0.000	0.021	0.027	0.452	0.238	0.029	0.000
Seniority	0.019	0.121	0.875	1.190	0.154	0.000	–0.027	0.177	0.881	1.217	0.181	0.000
Majority Leader	0.074	0.031	0.016	0.623	0.041	0.000	0.019	0.046	0.675	0.519	0.047	0.000
Minority Leader	–0.015	0.031	0.633	0.650	0.045	0.000	–0.056	0.045	0.213	0.496	0.050	0.000
Candidate Ideology												
Party (Republican)	–0.019	0.026	0.455	–0.380	0.035	0.000	0.159	0.038	0.000	–0.480	0.041	0.000
COC	0.143	0.051	0.005	1.465	0.067	0.000	–0.429	0.074	0.000	1.655	0.079	0.000
Candidate Need												
Previous Election Margin	–0.025	0.074	0.731	–0.603	0.099	0.000	0.625	0.104	0.000	–0.401	0.112	0.000
Quality	–0.088	0.027	0.001	0.216	0.035	0.000	–0.090	0.040	0.025	0.269	0.043	0.000
Primary Quality	–0.053	0.042	0.211	0.102	0.054	0.060	–0.052	0.056	0.359	0.245	0.061	0.000
Beginning Cash-on-Hand	–0.180	0.039	0.000	–0.043	0.051	0.396	–0.085	0.058	0.145	–0.130	0.061	0.032
PAC Geography and Resources												
Lagged Receipts	0.547	0.049	0.000	1.677	0.078	0.000	3.950	0.442	0.000	16.786	0.523	0.000
Lagged Receipts Squared	–0.092	0.019	0.000	–0.047	0.045	0.295	–9.424	1.411	0.000	–43.455	2.028	0.000
In-State Contributions	0.171	0.049	0.001	0.960	0.088	0.000	–0.088	0.041	0.034	0.454	0.056	0.000
Home Candidate	0.173	0.039	0.000	1.189	0.068	0.000	0.336	0.032	0.000	2.539	0.042	0.000
Washington DC PAC	0.220	0.024	0.000	0.153	0.031	0.000	0.041	0.049	0.405	0.926	0.050	0.000

Large Corporate PACs: N = 58,254; Log likelihood = –12,0067.78; Wald Chi-squared (df = 16) = 659.21, $p < .001$; Sigma = 0.504; Estimated split = 0.258; Observed split = 0.238.
Small Corporate PACs: N = 278,502; Log likelihood = –91,261.29; Wald Chi-squared (df = 16) = 265.19, $p < .001$; Sigma = 0.528; Estimated split = 0.039; Observed split = 0.031.

TABLE 2
Split-Population Duration Models, 1993–94 Labor PACs

	Large Labor PACs						Small Labor PACs					
	Timing of a Contribution			Likelihood of a Contribution			Timing of a Contribution			Likelihood of a Contribution		
Variable	Coefficient	SE	*p*	Coefficient	SE	*p*	Coefficient	SE	*p*	Coefficient	SE	*p*
Constant	–5.718	0.114	0.000	–1.332	0.225	0.000	–6.194	0.224	0.000	–4.433	0.282	0.000
Candidate Influence												
Education	–0.066	0.047	0.158	0.109	0.118	0.356	–0.028	0.076	0.713	0.229	0.105	0.028
Prestige	–0.038	0.030	0.205	0.281	0.064	0.000	–0.022	0.054	0.684	0.033	0.071	0.642
Seniority	–0.266	0.194	0.170	–0.723	0.389	0.063	–0.316	0.379	0.404	0.788	0.470	0.094
Majority Leader	0.201	0.043	0.000	0.448	0.118	0.000	0.101	0.072	0.164	0.460	0.098	0.000
Minority Leader	0.237	0.137	0.083	0.281	0.175	0.109	–0.068	0.226	0.763	0.174	0.295	0.556
Candidate Ideology												
Party (Republican)	0.060	0.060	0.323	–1.798	0.100	0.000	0.197	0.120	0.101	–1.368	0.153	0.000
COPE	0.293	0.109	0.007	3.250	0.201	0.000	0.027	0.198	0.891	1.420	0.271	0.000
Candidate Need												
Previous Electoral Margin	–0.320	0.123	0.009	–2.375	0.265	0.000	–0.373	0.231	0.106	–1.706	0.306	0.000
Quality	–0.016	0.043	0.703	0.236	0.092	0.010	–0.201	0.078	0.010	0.509	0.104	0.000
Primary Quality	–0.038	0.077	0.623	–0.407	0.150	0.007	0.003	0.150	0.983	–0.291	0.181	0.107
Beginning Cash-on-Hand	–0.351	0.072	0.000	–0.411	0.152	0.007	0.034	0.126	0.787	–0.430	0.156	0.006
PAC Geography and Resources												
Lagged Receipts	0.279	0.020	0.000	0.414	0.045	0.000	1.781	0.249	0.000	4.415	0.309	0.000
Lagged Receipts Squared	–0.026	0.002	0.000	–0.033	0.005	0.000	–0.938	0.163	0.000	–1.888	0.217	0.000
Percent Union	0.504	0.226	0.026	3.878	0.497	0.000	0.565	0.413	0.171	3.050	0.542	0.000
In-State Contributions	–0.482	0.191	0.012	0.818	0.465	0.078	0.247	0.133	0.064	0.747	0.203	0.000
Home Candidate	0.242	0.104	0.020	0.299	0.260	0.251	0.068	0.070	0.331	2.256	0.099	0.000
Washington DC PAC	–0.403	0.030	0.000	0.094	0.063	0.139	–0.101	0.057	0.077	1.303	0.079	0.000

Large Labor PACs: N = 10,168; Log likelihood = –33,857.726; Wald Chi-squared (df = 17) = 534.57, p < .001; Sigma = 0.480; Estimated split = 0.472; Observed split = 0.435.
Small Labor PACs: N = 36,208; Log likelihood = –12,902.372; Wald Chi-squared (df = 17) = 77.19, $p < .001$; Sigma = 0.434; Estimated split = 0.042; Observed split = 0.035.

with an increase (decrease) in the likelihood of a contribution. Together with the significance values, the coefficients give a picture of how donor and recipient characteristics intersect to determine the incidence and timing of contributions.

Candidate Influence

Candidate influence plays a powerful role in determining who gets money and when they get it. A small set of candidate influence variables explains the timing of a contribution. Majority party leaders receive their money earlier from large corporate and labor PACs. Being in the majority leadership has no effect on the timing of contributions from small PACs, however. Seniority does not aid an incumbent in receiving early money, the coefficient being insignificant for all four models. Furthermore, committee-related factors only affect the timing of contributions for large corporate PACs. Incumbents on the Energy and Commerce Committee, which is the substantive committee tied closely to corporate interests, are more likely to receive early contributions. Membership on a prestige committee does not affect the timing of contributions.

For both large and small corporate PACs, all of the candidate influence variables exhibit statistically significant influences on the incidence of a contribution. The incidence of contributions to incumbents from large labor PACs can be explained by the prestige of the committee and whether or not the incumbent was part of the Democratic majority leadership in the 1993–94 session. For small labor PACs, the incidence of a contribution is a function of whether or not the incumbent was on the Education and Labor Committee or in the Democratic party leadership.

Candidate Ideology

Candidate ideology influences whether or not an incumbent receives a contribution across all types of PACs. Democratic backbenchers and party leaders profit from their majority status. Small corporate PACs give their money earlier to Republicans, in spite of spreading it around to the Democratic majority.

Not surprisingly, higher COC scores increase the likelihood of contributions from corporate PACs, and higher COPE scores increase the likelihood of contributions from labor PACs. For both large labor and large corporate PACs, incumbents who are more ideologically congruent with the PAC receive earlier contributions. But surprisingly, small corporate PACs are more likely to give money later in the campaign

to those with higher COC scores. Judging from the relative coefficient magnitudes for the likelihood of a contribution, we conclude that corporate PACs place greater emphasis on ideology, as the coefficient for the COC rating scale is far larger than that of the coefficient for the dichotomous party variable. This same pattern emerges for large labor PACs, but not for small labor PACs.

Candidate Need

Our investigation shows that candidate need is also important in determining who gets money from all types of PACs. First, for corporate PACs, candidate need is an important factor influencing the timing of contributions. Incumbents elected by narrower margins in the previous election or facing quality challengers in the general election are more likely to receive contributions from corporate PACs. The evidence suggests, however, that although corporate PACs are more likely to contribute to incumbents who are more vulnerable, these PACs reduce risk by contributing money *later* in the campaign to incumbents who either face quality challengers in the general election or, in the case of small corporate PACs, were in close races in the previous election. Concerning financial need, incumbents with higher stores of beginning cash-on-hand are less likely to receive contributions from small corporate PACs, but no more likely to receive contributions from large corporate PACs. Furthermore, increasing levels of beginning cash-on-hand lead to incumbents receiving contributions later in the campaign from large corporate PACs.

The results indicate that labor PACs do not back away from embattled incumbents. Poor showings in the previous election and high-quality challengers in the general election serve to increase the likelihood of an incumbent receiving a contribution in the 1993–94 cycle. But for small labor PACs, incumbents facing quality challengers are more likely to receive contributions later in the campaign. For large labor PACs, increasing vulnerability leads to earlier contributions. Krasno, Green, and Cowden (1994) have observed that incumbents are able to react to challenger spending by increasing their own. Labor PACs seem willing to make these tools available to their supporters in response to a general-election challenger. Also, Herrnson (2004) characterizes labor PACs as sensitive to financial and electoral needs. Decreasing levels of beginning cash-on-hand increase the likelihood of an incumbent receiving a contribution from both large and small labor PACs. Furthermore, large labor PACs are more likely to give early to incumbents with lower levels of beginning cash-on-hand.

PAC Geography and Resources

Our work clearly shows the importance of PAC resources. PACs with larger budgets are able to make more contributions and to give them earlier in the cycle. With the exception of large corporate PACs, evidence exists of a declining marginal rate of return, as squared receipts are statistically significant and bear the opposite sign. The geography of the PACs plays a powerful role if the incumbent is from the state in which the PAC is based. Candidates are more likely to receive money earlier in the campaign from large and small corporate PACs and large labor PACs based in their home state relative to the reference group.[21] The findings for PACs based in Washington, DC, are mixed. Large and small corporate PACs and small labor PACs based in Washington, DC, are more likely to contribute to incumbents relative to the reference group. There is no timing effect for small corporate PACs, but the evidence shows that large corporate DC PACs are more likely to contribute earlier to incumbents than their non-DC, non–home state counterparts. The evidence from labor PACs shows the opposite timing effect: DC labor PACs are more likely to contribute to incumbents *later* in the campaign (but only with a marginally significant effect for small labor PACs) relative to the reference group.

In general, the larger the share of a PAC's fund-raising in a state, the more likely PACs are to make contributions in that state. This variable produces mixed findings with regard to timing. For small labor and large corporate PACs, increasing fund-raising in the state leads to earlier contributions to incumbents in that state (but note that the effect is only marginally significant for small labor PACs). For large labor and small corporate PACs, increasing fund-raising in the state leads to *later* contributions to incumbents in the state. Substantial evidence suggests that PACs contribute where they have members. The share of a PAC's fund-raising in a state is a more-useful measure of geography for corporate PACs than for large labor PACs with established payroll deduction systems because labor PACs rely substantially less on large contributions. The percentage of district residents belonging to a labor union is a strong predictor of the likelihood of labor contributions, and incumbents with more union constituents are also more likely to receive earlier contributions from large labor PACs.

Summary

Comparing the incidence and timing parts of the models, we see that more variables help explain the incidence of PAC contribution strategies than contribution timing. For example, a seat on a prestige

committee affects the likelihood of a corporate contribution, but not its timing. Factors associated with candidate influence, ideology, and need all exhibit a more-significant influence on the incidence rather than the timing of a contribution. In contrast, variables tapping PAC geography and resources are overwhelmingly central to both the likelihood *and* timing of a contribution and are the predominant explanatory factors for the timing of contributions. Thus, although many studies have focused solely on candidate characteristics in the study of campaign contributions (for example, Biersack, Herrnson, and Wilcox 1993; Krasno, Green, and Cowden 1994), our study builds upon other works (for instance, Wilcox 1989) by underscoring the substantial impact of PAC characteristics on both the incidence and timing of contributions.

Our results also highlight significant differences between the corporate and labor PAC models, which is not surprising if we consider the literature's emphasis on the different motivations of these two PAC types (see, for example, Clawson, Neustadtl, and Scott 1992; Grier and Munger 1991, 1993; Munger 1989; Rudolph 1999; and Sorauf 1988). In particular, the evidence shows that district-competitiveness factors exhibit more-significant effects on the timing of contributions from corporate PACs than on those from labor PACs. Overall, we see that fewer covariates affect labor PAC decision making than affect corporate PAC decision making. PAC geography and resources, neglected considerations in the previous literature, play a central role in the allocation decisions of both types of PACs. Indeed, resources and geography dominate the timing models for labor PACs and are the sole factors explaining timing for small labor PACs, whereas additional candidate covariates are important to corporate PACs. Thus, our findings reinforce the necessity of separately analyzing corporate and labor PAC contribution behavior.

Comparing large and small PACs, we find that the factors affecting the likelihood of contribution are similar. There is more variation, however, between the timing parts of the models based on PAC size. Small labor PACs are particularly constrained by geography and resources when considering when to give. Also, large corporate PACs are more likely to give earlier contributions to incumbents with higher COC scores, but small corporate PACs are more likely to give later to those with higher COC scores. Also, candidate influence factors, especially for corporate PACs, are more significant in explaining timing for large PACs than for small ones. Building upon the work of Eismeier and Pollock (1988), Wilcox (1989), and McCarty and Rothenberg (2000), we show clear differences between large and small PACs regarding the effects of the variables of interest on the timing of contributions.

Further Interpretation:
Predicted Probabilities and Hazard Rates

We compared a baseline incumbent to four alternative cases that vary candidate influence, candidate ideology, candidate need, and PAC geography and resources. The baseline case was created with all the dichotomous variables set to 0 and all the continuous variables set to their mean, except for the ideology scores, which were set to the middle of the range at 50.

The first alternative case, "Candidate Influence," represents an otherwise typical incumbent who has 20 years of seniority (one standard deviation above the mean) and is part of the majority party leadership. The second alternative case, "Candidate Ideology," represents an otherwise typical incumbent whose COC or COPE score for corporate and labor PACs, respectively, is 75 rather than the baseline of 50. "Candidate Need" is the third alternative case and represents an otherwise typical incumbent who represents a marginal district (elected with one standard deviation below the mean for previous vote) and faces a quality challenger in the general election. "PAC Geography and Resources" is the last alternative case, representing an otherwise typical incumbent who receives a contribution from a PAC in his or her home state, which provided 10% (one standard deviation above the mean) of the relevant PAC's traceable contributions and, for labor PAC contributions, also represented a district containing a larger percentage of labor union members (one standard deviation above its mean) among its residents.

The top portion of Table 3 provides estimates of the probability of receiving a contribution for each of the four alternative cases from each type of PAC. PAC geography and resources are important influences on whether or not a contribution is received, yielding the largest impact for various types of PACs: a .440, .226, and .194 chance of receiving a contribution from large corporate, small corporate, and small labor PACs, respectively. Influential incumbents also fare well overall, and candidate influence is the second-most important factor for large and small corporate PACs and the third-most important for small labor PACs. The needy incumbent finishes last for large and small corporate PACs, third for large labor, and second for small labor. The highest probability of receiving a contribution in Table 3 is from large labor PACs, at .645, which is for incumbents who are more ideologically similar to labor interests. The difference between large and small PACs is immediately apparent in Table 3. The probability of receiving a contribution from a large PAC varies between .18 and .65; for small PACs, that probability lies between .02 and .23.

TABLE 3
Further Interpretation

Predicted Probability of a Contribution

Type of PAC	Baseline	Candidate Influence	Candidate Ideology	Candidate Need	PAC Geography and Resources
Large Corporate	0.184	0.318	0.246	0.231	0.440
Small Corporate	0.022	0.040	0.033	0.030	0.226
Large Labor	0.446	0.543	0.645	0.576	0.606
Small Labor	0.018	0.031	0.026	0.037	0.194

Note: Entries are predicted probabilities of a PAC-incumbent pair exchanging a contribution for the given covariate profile.

Percent Change in Hazard Rate on the Day of Maximum Baseline Hazard

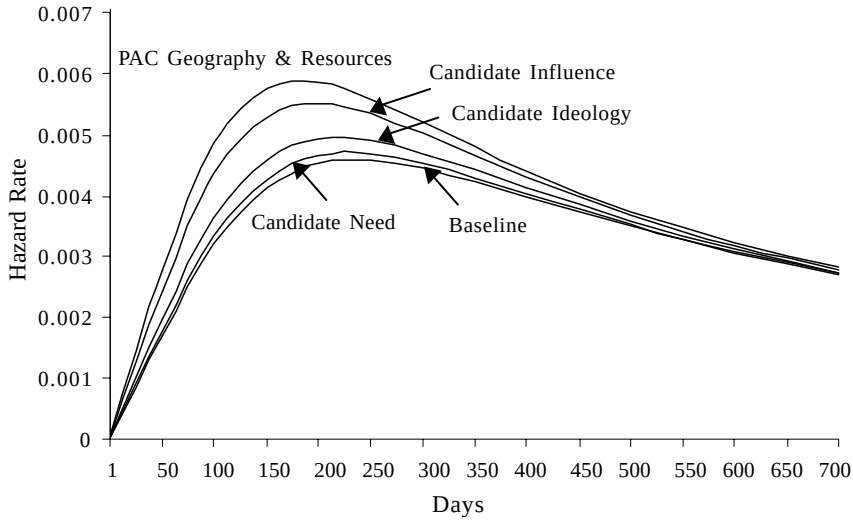
Type of PAC	Day of Highest Baseline Hazard Rate	Candidate Influence	Candidate Ideology	Candidate Need	PAC Geography and Resources
Large Corporate	313	7.6%	3.6%	–8.5%	18.2%
Small Corporate	497	1.7%	–10.6%	–16.1%	32.4%
Large Labor	235	17.5%	7.3%	2.2%	23.7%
Small Labor	568	7.4%	0.7%	–15.9%	12.9%

Note: Entries are percent changes from the baseline hazard rate for the given covariate profile when *t* (the analysis time) is fixed to the day at which the baseline hazard for the particular PAC type is at its maximum.

We also plotted the baseline hazard rates for the alternative cases, and we will include this figure in the ICPSR data archive. To summarize, these hazard plots show clear evidence of the differential timing effects for large versus small PACs. The hazard rate for the large PACs peaks and then declines late in the first year, while the small PACs peak later in the second year with a smaller decline.

The bottom portion of Table 3 illustrates the effects of the four profiles on the hazard rate. Since the log-logistic duration model is parameterized as an accelerated failure time formulation, the percent change in the hazard rate varies across different covariate profiles. Thus, we chose a particular time point in the analysis for each model and calculated the percent change in the hazard rate from the baseline. The time point we chose was the day at which the baseline hazard rate for each type of PAC reached its maximum. For instance, the baseline hazard reached its maximum for large corporate PACs on day 313. Each cell entry for large corporate PACs equals the percent change in the hazard rate for a particular covariate profile from the baseline hazard when *t* is fixed at 313.

FIGURE 3
Hazard Rate Comparisons for Large Labor PACs



PAC geography and resources appear to be the most important influences on the change in the hazard rate. Incumbents who are from the same home state as a PAC and who received a larger-than-average share of contributions from the home state (when we hold all other factors constant) possess a higher chance of receiving a contribution early. Candidate influence is also an important factor for large and small labor PACs, indicating that incumbent influence considerations play a larger role in the timing of contributions for labor PACs than they do for corporate PACs. Table 3 highlights the strong substantive effect of candidate need on the timing of contributions. For both small corporate and small labor PACs, when we hold other variables constant, vulnerability and strong competition decrease the hazard of receiving a contribution with considerable magnitude compared to the other factors.

Beyond the effects of these factors, there is more diversity across the types of PACs regarding the *size* of the effect of the factors on timing than there is on the *probability* of receiving a contribution. Figure 3 shows the relative effect of the four factors for large labor PACs. (This graphical presentation provides more than a one-day snapshot of the timing of contributions.) Being an incumbent from the same state in which the PAC is based, as well as receiving a larger-than-average proportion of contributions from the home state, leads to one receiving

the earliest contributions. All four of the factors lead to earlier contributions than the baseline category; the effects of candidate need and candidate ideology are practically indistinguishable, however, and do not show dramatic differences compared to the baseline. The figure for small corporate PACs shows a dramatic effect for PAC geography and resources. The small labor PACs figure shows the most separation among the four factors midway through the cycle; the large corporate PACs figure shows separation earlier in the cycle.

Conclusions

Some aspects of the timing of contributions fit with commonly held conceptions of allocation strategy. Many characteristics that increase the likelihood of a contribution also lead to earlier contributions. For example, being an influential incumbent increases the likelihood of one receiving a contribution and receiving it earlier. But interesting differential effects exist between the determinants of who receives a contribution and when they receive it. That is, there are opposite signs on the incidence-versus-timing coefficients for some independent variables. For example, needy incumbents facing high-quality challengers are more likely to receive contributions from corporate PACs but to receive them later. Also, candidate need is a more-potent influence on *when* to contribute than it is on the actual decision to contribute.

Political scientists in general, and campaign finance scholars in particular, have recently begun to correct the paucity of studies on timing in decision making. Our study of the timing of PAC contributions helps further this research agenda by considering the intersection of incumbent candidate characteristics and PAC contribution strategies. The timing of contributions affects who is powerful in the institution since legislators receiving large sums of early money often redistribute it to other party candidates and expect something in return, such as a choice committee assignment (Heberlig 2001). If incumbents do not have early money, then they cannot participate in reallocation. Early money may be perceived as being worth more, so further distortions of power among interest groups may occur. Thus, assessing the factors that determine the timing of contributions is interesting and important for a completer understanding of the campaign process.

Our study sheds light on who is getting, and who is giving, money and when. Using the appropriate methodological tool, the split-population duration model, we generated estimates of the effects of four factors on the incidence and timing of contributions for both corporate and labor PACs, large and small. Many of the variables associated with the

four factors exhibited significant influences on the incidence of contributions for all PAC types. For timing, however, one factor in particular—PAC geography and resources—serves as the primary determinant of when PACs contribute. In particular, for all PAC types, large-budget PACs are more likely to contribute early, and, for three out of the four PAC types, PAC-incumbent pairs from the same state are more likely, relative to the reference group, to exchange a contribution early in the election cycle. Furthermore, for large PACs, increasing ideological congruence between the PAC and the incumbent increases the likelihood of that incumbent receiving money early. A couple of candidate need and influence factors are also influential in determining the timing of contributions for various models.

Janet M. Box-Steffensmeier is the Vernal Riffe Professor of Political Science and Professor of Sociology and Director of the Program in Statistics and Methodology (PRISM) at The Ohio State University, 2140 Derby Hall, 154 North Oval Mall, Columbus, Ohio 43210-1373. Peter M. Radcliffe is a Senior Analyst with the College of Liberal Arts, University of Minnesota, Twin Cities Campus, 101 Pleasant Street S.E., Minneapolis, Minnesota 55455-0432. Brandon L. Bartels is a Ph.D. candidate in political science, The Ohio State University, 2140 Derby Hall, 154 North Oval Mall, Columbus, Ohio 43210-1373.

NOTES

We thank Larry Baum, Frank Baumgartner, Paul Beck, Bill Bianco, Bob Biersack, Jon Bond, Suzanna DeBoef, Jim Eisenstein, Tim Groseclose, Eric Heberlig, Paul Herrnson, Marie Hojancki, Susan Meyer, Jason Mycoff, Eric Plutzer, Herb Weisberg, Clyde Wilcox, Jack Wright, and Chris Zorn for helpful discussions and comments; Valeria Sinclair-Chapman and Jason Pigg for data collection assistance; Tobin Grant and Andy Farrell for research assistance; Laura Arnold, Scott Meinke, and Jack Wright for assistance in arranging interviews; and numerous PAC directors and political fundraisers (who wish to remain anonymous) for interviews. We are also grateful to Professors Martin Forster and Andrew Jones of the University of York for assisting us with the Stata program used to estimate the models. Box-Steffensmeier thanks the Center for Labor Research for funding. The data and files to replicate the analyses will be available from the Publication-related Archive at the Inter-university Consortium for Political and Social Research under the authors' names and study and also from the authors' website upon publication.

1. The section title is taken from Glasser and White 1999. Glasser and White highlight the drive of candidates to increase their campaign coffers prior to the Federal Election Commission (FEC) filing deadlines with the expectation of scaring off potential challengers.

2. Confidential interviews with one of the authors, July 1999 and November 2001.

3. Milyo and Groseclose (1999) find that the war chests of wealthy candidates do not deter challengers. More generally, Goodliffe (2001) does not find that war chests have a deterrence effect. Goodliffe's work focuses on questions of endogeneity. The definitions, measurement, and methodologies used to examine the effect of war chests vary among authors; see Ansolabehere and Snyder 2000, McCarty and Rothenberg 2000, Milyo 1998, and Squire 1991. Mycoff's work (2002) moves to reconcile the findings by clarifying monetary definitions used in campaign finance.

4. Confidential interviews with one of the authors, July 1999.

5. Informative studies by Eismeier and Pollock (1986) and Wilcox (1989) have examined PAC contribution strategies *across* election cycles.

6. Confidential interviews with the author, July 1999.

7. We have found no research claiming that PACs behaved differently during the 1993–94 cycle or that they changed strategies late in the cycle. There was no appreciable jump in PAC contributions or the number of PACs. Incumbents did not have difficulty raising funds either. Our data on the incumbent's reliance on PAC funds is consistent across other elections prior and subsequent to the 1994 election.

8. Studying all PACs and candidates is critical to prevent selection bias. Since some pairs never exchange a contribution, we censored observations for these pairs. We also excluded from analysis the 16 incumbents who expressly refused PAC contributions in the 1994 election; these incumbents' decision was idiosyncratic and thus beyond what we could hope to model.

Biersack, Herrnson, and Wilcox (1994) highlight the diversity of PACs and the problems that arise by looking at only the largest PACs, as the literature typically does. We expect timing differences to be based on the size of the PAC. McCarty and Rothenberg's (1996b, 2000) bargaining model discusses the pattern of contributions expected over the course of the election cycle. Their model considers pre- and post-primary contributions.

9. We focus on incumbents because they are the candidates who receive early funds. Mycoff (2002) explains that the handful of challengers who do receive early contributions are in districts where the partisan balance of voters is close. Including voting pattern information necessarily excludes challengers, open-seat candidates, and first-year legislators from the analysis, but it maximizes consistency with the previous literature.

10. See Grier and Munger 1986 (354) for further details about choosing relevant committees.

11. Majority Leader is coded as 1 if the member was Speaker, majority leader, caucus chair or vice chair, majority whip, floor whip, ex officio whip, chief deputy whip, or assistant deputy whip for the majority party, and as 0 otherwise. Minority Leaders is coded as 1 if the member was minority leader, conference chair, vice chair or secretary, minority whip, chief deputy whip, deputy whip, or assistant deputy whip for the minority party, and as 0 otherwise.

12. This variable ranges from 0.502 to 1.00 because only incumbents, who are winners, are in the dataset. If our variable ranged from 0 to 1.00, then we would expect a curvilinear relationship between competitiveness of the election and contributions.

13. We used the challenger-quality measure developed by Jacobson and Kernell (1981). Alternative measures have been developed by Bond, Covington, and Fleischer (1985), Krasno and Green (1988), Canon (1990), Herrnson (2001, 2004), and Maisel, Stone, and Maestas (2001). Maisel, Stone, and Maestas (2001) have a more-nuanced and theoretically grounded measure that does not equate service in the New Hampshire House of Representatives (or similiar large, amateur bodies) with service in the California Senate or as mayor of New York. In addition, their measure does not suffer from the fact that since Republicans typically have a "shorter bench" of potential candidates, they have been finding many of their best candidates elsewhere. Maisel, Stone, and Maestas's measure is provided by political elites in a random sample of 200 congressional districts in response to a survey those authors sent out. Unfortunately, their data start in the 1997–98 cycle and cannot be used for our analysis. Jacobson (1990, 1992) still argues that the dichotomous measure captures the main components of challenger quality quite well. Furthermore, in a study that compares various measures of challenger quality, Bond and Fleischer (1991; see also Bond, Fleischer, and Talbert 1997) provide further justification for use of the dichotomous measure. The current measure seems sufficient as a control for the likelihood that a candidate will have the knowledge, experience, contacts, etc. to know what timing of contributions is optimal and to be in a position to get it.

14. See Grenzke 1988 for a discussion of measuring in-state sources of PAC receipts.

15. We use lagged receipts instead of current receipts for two reasons. First, lagged receipts avoid simultaneity biases, and, second, contributions made early in the cycle are frequently drawn from the previous cycle's excess funds.

16. The theories regarding the timing of contributions and the value of early money emphasize the importance of the time until the first contribution for each PAC-candidate pair in the election cycle, rather than focusing on the primary and general election periods. Interviews with PAC managers reveal that they do not focus on these separate periods either (confidential interviews with the author, July 1999 and November 2001). We know from the incumbent's "long campaign" perspective that even early in the cycle they are likewise focused on the whole campaign, not just the primary (Box-Steffensmeier and Franklin 1995; Franklin 1993). Our work discusses early money in the context of the entire two-year election cycle because this framework best fits our understanding of how the process is perceived.

Clearly the contribution amount is important information. Ideally, we would study the existence/nonexistence, timing, and amount of a contribution simultaneously, but current methods are underdeveloped. Radcliffe (1998) argues that contribution size contains only limited information: "[C]ontribution amounts may be determined by the preponderance of fixed-price fund-raising dinners, designed to avoid jealousy and retribution from less-favored candidates, or simply a function of PAC resources. In this case, the amount of the contribution contains no information" (1998, 108). Furthermore, observational studies suggest that decisions about whether or not to contribute and how much to contribute are often made separately: "Once a decision is made to support a candidate, the size of the contribution is determined" (Bedlington 1994, 106). Given the documented differences between the characteristics that lead to contributions and those that affect the amounts of contributions, we are confident about estimating our model of contributions and their timing separately from the amount.

17. The appendix can be accessed online via <http://psweb.sbs.ohio-state.edu/grads/bartels/pacs.htm>.

18. Researchers have attempted to develop split-population models using semiparametric approaches, but these attempts have been hampered by problems of identification (see Sy and Taylor 2000). Blossfeld and Rohwer (1995) and Hosmer and Lemeshow (1999) recommend selecting a distribution based on observed patterns of the data as well as likelihood and robustness criteria. This study uses the log-logistic distribution. We used likelihood ratio tests to determine overall model significance and found that all of the parametric models we estimated were statistically significant.

19. Confidential interviews with the author, July 1999 and November 2001. Biersack, Herrnson, and Wilcox (1994) point out that large PACs serve as cue givers and therefore act prior to the receiver.

20. Lumping large and small PACs together results in an inaccurate contribution rate, which is not surprising when we consider the difference in their hazard rates through the election cycle. Large and small PACs operate in different financial worlds governed by different rules and strategies (Eismeier and Pollock 1988).

21. In our analysis, PACs are based in the candidate's home state, in Washington, DC, or neither. The reference group is "neither."

REFERENCES

Ansolabehere, Stephen D., and James Snyder. 2000. "Campaign War Chests and Congressional Elections." *Business and Politics* 2: 9–34.

Austen-Smith, David. 1995. "Campaign Contributions and Access." *American Political Science Review* 89: 566–81.

Baker, Ross K. 1989. *The New Fat Cats: Members of Congress as Political Benefactors*. New York: Priority.

Beck, Nathaniel. 1998. "Modeling Space and Time: The Event History Approach." In *Research Strategies in the Social Sciences*, ed. E. Scarbrough and E. Tanenbaum. Oxford: Oxford University Press.

Bedlington, Anne H. 1994. "The National Association of Realtors PAC: Rules or Rationality?" In *Risky Business? PAC Decisionmaking in Congressional Elections*, ed. Robert Biersack, Paul S. Herrnson, and Clyde Wilcox. Armonk, NY: M.E. Sharpe.

Bennett, D. Scott. 1999. "Parametric Models, Duration Dependence, and Time-Varying Data Revisited." *American Journal of Political Science* 43: 256–70.

Biersack, Robert, and Clyde Wilcox. 1990. "Financing National Campaigns: A Research Agenda." *American Politics Quarterly* 18: 215–41.

Biersack, Robert, Paul S. Herrnson, and Clyde Wilcox. 1993. "Seeds for Success: Early Money in Congressional Elections." *Legislative Studies Quarterly* 18: 535–51.

Biersack, Robert, Paul S. Herrnson, and Clyde Wilcox, eds. 1994. *Risky Business? PAC Decisionmaking in Congressional Elections*. Armonk, NY: M.E. Sharpe.

Biersack, Robert, Paul S. Herrnson, and Clyde Wilcox. 1999. *After the Revolution: PACs and Lobbies in the Republican Congress*. Boston: Allyn and Bacon.

Blossfeld, Hans-Peter, and Gotz Rohwer. 2002. *Techniques of Event History Modeling: New Approaches to Causal Analysis*, 2d ed. Mahwah, NJ: Lawrence Erlbaum Associates.

Bond, Jon R., and Richard Fleischer. 1991. "Explaining Candidate Quality in Open Seat Races, 1976–1988." Presented at the annual meeting of the Southern Political Science Association, Tampa, FL.

Bond, Jon R., Cary Covington, and Richard Fleischer. 1985. "Explaining Challenger Quality in Congressional Elections." *Journal of Politics* 47: 510–29.

Box-Steffensmeier, Janet M. 1996. "A Dynamic Analysis of the Role of War Chests in Campaign Strategy." *American Journal of Political Science* 40: 352–71.

Box-Steffensmeier, Janet M., and Charles H. Franklin. 1995. "The Long Campaign: Senate Elections in 1992." In *Democracy's Feast: Elections in America*, ed. Herbert F. Weisberg. Chatham, NJ: Chatham House.

Box-Steffensmeier, Janet M., and Bradford Jones. 1997. "Time Is of the Essence: Event History Models in Political Science." *American Journal of Political Science* 41: 336–83.

Box-Steffensmeier, Janet M., and Bradford Jones. 2004. *Event History Modeling: A Guide for Social Scientists*. New York: Cambridge University Press.

Box-Steffensmeier, Janet M., and Tse-Min Lin. 1997. "A Dynamic Model of Campaign Spending in Congressional Elections." *Political Analysis* 6: 37–66.

Box-Steffensmeier, Janet M., and Christopher J.W. Zorn. 2003. "Split-Population Duration Models in Political Research." The Ohio State University. Manuscript.

Clawson, Dan, Alan Neustadtl, and Denise Scott. 1992. *Money Talks: Corporate PACs and Political Influence*. New York: Basic Books.

Denzau, Arthur, and Michael Munger. 1986. "Legislators and Interest Groups: How Unorganized Interests Get Represented." *American Political Science Review* 80: 89–106.

Eismeier, Theodore, and Phillip Pollock III. 1984. "Political Action Committees: Varieties of Organization and Strategy." In *Money and Politics in the United States*, ed. Michael Malbin. Chatham, NJ: Chatham House.

Eismeier, Theodore, and Phillip Pollock III. 1986. "Strategy and Choice in Congressional Elections: The Role of Political Action Committees." *American Journal of Political Science* 30: 197–213.

Eismeier, Theodore, and Phillip Pollock III. 1988. *Business, Money, and the Rise of Corporate PACs in American Elections*. New York: Quorum.

Epstein, David, and Peter Zemsky. 1995. "Money Talks: A Signaling Approach to Campaign Finance." *American Political Science Review* 89: 295–308.

Evans, Diana. 1988. "Oil PACs and Aggressive Contribution Strategies." *Journal of Politics* 50: 1047–56.

Fenno, Richard F. Jr. 1986. "Observation, Context, and Sequence in the Study of Politics." *American Political Science Review* 80: 3–15.

Franklin, Charles H. 1993. "Senate Incumbent Visibility over the Election Cycle." *Legislative Studies Quarterly* 18: 271–90.

Gerber, Alan, and Stephen Ansolabehere. 1995. "The Marginal Returns to Spending: A Microeconomic Analysis." Presented at the annual meeting of the Midwest Political Science Association, Chicago.

Gimpel, James G. 1996. *Fulfilling the Contract*. Boston: Allyn and Bacon.

Glasser, Susan B., and Ben White. 1999. "Feeding the Political Money Machine." *Washington Post*. Sunday, June 26, 1999. Page A01.

Goodliffe, Jay. 2001. "The Effect of War Chests on Challenger Entry in U.S. House Elections." *American Journal of Political Science* 45: 830–44.

Gopoian, J. David. 1984. "What Makes PACs Tick? An Analysis of the Allocation Patterns of Economic Interest Groups." *American Journal of Political Science* 28: 259–81.

Green, Donald Philip, and Jonathan Krasno. 1988. "Salvation for the Spendthrift Incumbent: Reestimating the Effects of Campaign Spending in House Elections." *American Journal of Political Science* 32: 884–907.

Green, Donald Philip, and Jonathan Krasno. 1990. "Rebuttal to Jacobson's 'New Evidence for Old Arguments'." *American Journal of Political Science* 34: 363–72.

Grenzke, Janet M. 1988. "Comparing Contributions to U.S. House Members from Outside Their Districts." *Legislative Studies Quarterly* 13: 83–103.

Grenzke, Janet M. 1989. "PACs and the Congressional Supermarket: The Currency Is Complex." *American Journal of Political Science* 33: 1–24.

Grier, Kevin, and Michael Munger. 1986. "The Impact of Legislator Attributes on Interest Group Campaign Contributions." *Journal of Labor Research* 7: 349–61.

Grier, Kevin, and Michael Munger. 1991. "Committee Assignments, Constituent Preferences, and Campaign Contributions to House Incumbents." *Economic Inquiry* 29: 24–43.

Grier, Kevin, and Michael Munger. 1993. "Comparing Interest Group PAC Contributions to House and Senate Incumbents, 1980–1986." *Journal of Politics* 55: 615–53.

Gurwitt, Rob. 1990. "How to Succeed at Running a Legislature: Pack a Mighty Wallet." *Governing* 3: 26–31.

Hall, Richard, and Frank Wayman. 1990. "Buying Time: Moneyed Interest and the Mobilization of Bias in Congressional Committees." *American Political Science Review* 84: 797–820.

Handler, Edward, and John R. Mulkern. 1982. *Business in Politics.* Lexington, MA: Lexington.

Heberlig, Eric S. 2001. "Congressional Fundraising and Committee Ambition." Presented at the annual meeting of the American Political Science Association, San Francisco.

Herndon, James F. 1982. "Access, Record, and Competition as Influences on Interest Group Contributions to Congressional Campaigns." *Journal of Politics* 44: 996–1019.

Herrnson, Paul S. 1997. "Money and Motives: Spending in House Elections." In *Congress Reconsidered*, 6th ed., ed. Lawrence C. Dodd and Bruce I. Oppenheimer. Washington, DC: CQ Press.

Herrnson, Paul S., ed. 2001. *Playing Hardball: Campaigning for the U.S. Congress*. Upper Saddle River, NJ: Prentice Hall.

Herrnson, Paul S. 2004. *Congressional Elections*, 4th ed. Washington, DC: CQ Press.

Hosmer, David W. Jr., and Stanley Lemeshow. 1999. *Applied Survival Analysis*. New York: Wiley.

Jackson, Brooks. 1988. *Honest Graft*. New York: Knopf.

Jacobson, Gary C. 1990. "The Effects of Campaign Spending in House Elections: New Evidence for Old Arguments." *American Journal of Political Science* 34: 334–62.

Jacobson, Gary C. 1992. *Money in Congressional Elections*, 3d ed. New York: HarperCollins.

Jacobson, Gary C., and Samuel Kernell. 1981. *Strategy and Choice and Congressional Elections*. New Haven, CT: Yale University Press.

Krasno, Jonathan S., and Donald Philip Green. 1988. "Preempting Quality Challengers in House Elections." *Journal of Politics* 50: 920–36.

Krasno, Jonathan S., Donald Philip Green, and Jonathan A. Cowden. 1994. "The Dynamics of Campaign Fundraising in House." *Journal of Politics* 56: 459–74.

Maisel, Louis S., Walter Stone, and Cherie Maestas. 2001. "Quality Challengers to Congressional Incumbents: Can Better Candidates Be Found?" In *Playing Hardball*, ed. Paul S. Herrnson. New York: Prentice Hill.

McCarty, Nolan, and Lawrence S. Rothenberg. 1996a. "Commitment and the Campaign Contribution Contract." *American Journal of Political Science* 40: 872–904.

McCarty, Nolan, and Lawrence S. Rothenberg. 1996b. "The Time to Give: PAC Motivations and Electoral Timing." University of Rochester. Typescript.

McCarty, Nolan, and Lawrence S. Rothenberg. 2000. "The Time to Give: PAC Motivations and Electoral Timing." *Political Analysis* 8: 239–59.

Milyo, Jeff, and Timothy Groseclose. 1999. "The Electoral Effects of Incumbent Wealth." *Journal of Law and Economics* 42: 699–722.

Munger, Michael. 1989. "A Simple Test of the Thesis that Committee Assignments Shape the Pattern of Corporate PAC Contributions." *Public Choice* 62: 181–86.

Mycoff, Jason. 2002. *The Effect of Momentum on Congressional Fundraising and Electoral Outcomes*. Ph.D. diss. Ohio State University.

Poole, Keith. 1997. "Changing Minds? Not in Congress!" University of Houston. Typescript.

Poole, Keith, and Thomas Romer. 1985. "Patterns of PAC Contributions to the 1980 Campaigns for the U.S. House." *Public Choice* 47: 63–111.

Poole, Keith, Thomas Romer, and Howard Rosenthal. 1987. "The Revealed Preferences of Political Action Committees." *American Economic Review* 77: 298–320.

Radcliffe, Peter M. 1997. "Brother, Can You Spare a Dime? Candidate Need and PAC Contributions." Presented at the annual meeting of the American Political Science Association, Washington, DC.

Radcliffe, Peter M. 1998. *Now How Much Would You Pay? Contributions, Timing, and Theories of Access.* Ph.D. diss. Ohio State University.

Rossotti, Jack E. 1994. "How the Little People Choose: PAC Decisionmaking in the PHH Group, Inc., and the National Air Traffic Controllers' Association." In *Risky Business? PAC Decisionmaking in Congressional Elections*, ed. Robert Biersack, Paul S. Herrnson, and Clyde Wilcox. Armonk, NY: M.E. Sharpe.

Ruldolph, Thomas J. 1999. "Corporate and Labor PAC Contributions in House Elections: Measuring the Effects of Majority Party Status." *Journal of Politics* 61: 195–206.

Schmidt, Peter, and Ann Dryden Witte. 1988. *Predicting Recidivism Using Survival Models*. New York: Springer-Verlag.

Schmidt, Peter, and Ann Dryden Witte. 1989. "Predicting Criminal Recidivism Using Split Population Survival Time Models." *Journal of Econometrics* 40: 141–59.

Smith, Richard A. 1984. "Advocacy, Interpretation, and Influence in the U.S. Congress." *American Political Science Review* 78: 44–63.

Smith, Richard A. 1989. "Interpretation, Pressure, and the Stability of Interest Group Influence in the U.S. Congress." Presented at the annual meeting of the American Political Science Association, Atlanta.

Smith, Steven, and Christopher Deering. 1990. *Committees in Congress*, 2d ed. Washington, DC: CQ Press.

Sorauf, Frank J. 1984. "Who's in Charge? Accountability in Political Action Committees." *Political Science Quarterly* 99: 591–614.

Sorauf, Frank J. 1988. *Money in American Elections*. Boston: Scott, Foresman.

Squire, Peverill. 1989. "Competition and Uncontested Seats in U.S. House Elections." *Legislative Studies Quarterly* 14: 281–95.

Squire, Peverill. 1991. "Preemptive Fund-raising and Challenger Profile in Senate Elections." *Journal of Politics* 53: 1150–64.

Sy, Judy P., and Jeremy M.G. Taylor. 2000. "Estimation in a Cox Proportional Hazards Cure Model." *Biometrics* 56: 237–43.

Wilcox, Clyde. 1989. "Organizational Variables and the Contribution Behavior of Large PACs: A Longitudinal Analysis." *Political Behavior* 11: 157–73.

Wright, John R. 1985. "PACs, Contributions, and Roll Calls: An Organizational Perspective." *American Political Science Review* 79: 400–14.

Wright, John R. 1996. *Interest Groups and Congress: Lobbying, Contributions, and Influence*. Needham Heights, MA: Allyn and Bacon.