

## **Individual Heterogeneity in the Effects of Distributive Benefits on Voting**

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### **Abstract**

Distributive benefits (e.g. pork barrel projects or earmarks) are widely recognized as an important contributor to incumbency advantage. Obtaining them exists only within the realm of the representative, making it difficult for the electoral challenger to overcome incumbent credit claiming for such benefits. This view of distributive benefits is supported in large part by the assumption that voters always prefer more benefits in their districts to less. This research challenges that assumption and develops a rational choice framework for examining individual preferences for distributive benefits. Unlike previous studies, this work identifies two individual characteristics that affect preferences for distributive spending: ideology and political awareness. These characteristics are found to condition the effect of distributive benefits on voting. Particularly, conservatives become less likely and moderates and liberals more likely to vote for incumbents as both awareness and spending on distributive benefits increase.

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“We were elected to reduce the size of government and enlarge the sphere of free and private initiative. We increased the size of government in the false hope that we could bribe the public into keeping us in office.”

Senator John McCain, in a speech delivered to the Federalist Society, 11/16/06

On Election Day 2006, the Democrats gained 31 seats in the House of Representatives and 6 seats in the Senate, giving them a majority in both chambers of Congress. While such gains for the out-party are common in midterm elections, of particular interest for this research are the explanations given for the change of partisan control. The major story woven throughout the election coverage was that of the War in Iraq. Democrats had a solid issue with which they could energize their base and win over Independents in the electorate. Scandal, too, had dealt a blow to the Republican Party. In the days that followed, conservatives, however, started attributing Republican losses to their abandonment of limited government, particularly in the realm of spending. These sentiments were expressed by Senator McCain, quoted above, and were seen in several columns discussing Republican losses (e.g. George Will’s column in the November 9 *Washington Post* or Pat Toomey’s in the November 10 *National Review Online*). Are these Republican sour grapes or is there something to the argument that abandoning their small government principles played a hand in costing Republicans control of Congress?

The argument calls into question the effects of distributive benefits (i.e., pork barrel or earmarks) on voting and elections. To suggest that there are voters who would knowingly vote against incumbents that bring federal money and projects home to their districts goes against the basic assumptions that underlie the theoretical and empirical research on distributive benefits. In the discussion and analyses that follow, we move away from the simple assumption that voters prefer more spending in their districts to less and find that there are individuals who are less likely to vote for incumbents in districts that receive an increasing amount of distributive

benefits. A rational choice based theory of preferences for distributive benefits is outlined and it is hypothesized that, as political awareness and distributive benefits increase, conservatives will be less likely and moderates and liberals more likely to vote for their House incumbents.

### **The Electoral Effects of Distributive Benefits**

When considering distributive benefits, two important aspects need to be addressed: what they are and why they persist. As a starting point, Lowi (1964) explains that “distributive policies are characterized by the ease with which they can be disaggregated and dispensed unit by small unit, each unit more or less in isolation from other units and from any general rule” (690). More succinctly, distributive benefits are programs that meet the following requirements: (1) they can be targeted at a particular geography or constituency; (2) they can be manipulated politically; and (3) they are paid for by the general public.

The first two requirements are often given as the rationale for excluding redistributive, or entitlement, programs from a measure of distributive benefits (e.g. Alvarez and Saving 1997; Stein and Bickers 1994). The literature often distinguishes between distributive (particularistic) and redistributive (entitlement) spending. Particularistic benefits are excludable in their nature; they can be targeted. Entitlement programs can also be exclusive, but in a different way. Entitlement programs do not distinguish between geographies. A set of requirements is given for qualification and benefits are often determined by formulae. In addition, entitlement programs, once created, are relatively protected from political manipulation. Turning to the third requirement, spending on programs, in general, is paid from the tax receipts of the Federal Government; therefore all of the programs reported in the Catalog of Federal Domestic Assistance, which describes the programs tracked by the Federal Assistance Award Data System (FAADS), meet this requirement. FAADS is the primary source of information on distributive

spending. The database was popularized by Stein and Bickers (1994) and most of the empirical work that followed has made use of their dataset.

It must also be that the beneficiaries of distributive policies and those who bear the burdens of their costs are generally unidentifiable to one another. As Lowi (1964) states, “they are policies in which the indulged and the deprived, the loser and the recipient, need never come into direct contact” (690). This condition has developed under the framework of cost-benefit analysis and partially explains the unchecked growth of distributive programs (Shepsle and Weingast 1981; Weingast, Shepsle, and Johnsen 1981). For any given program, the benefits are relatively concentrated and the costs diffuse, coming from the general tax receipts of the government. Thus for Representative X, the \$5 million spent *in her district*, potentially benefiting her constituents, is being paid for by the 300 million residents of the United States.<sup>1</sup>

The question of “why” with respect to distributive benefits is an old one and one that has produced a long, illustrious line of research. While the rationales for the existence and persistence of distributive benefits are numerous, many of the nuanced theories boil down to

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<sup>1</sup> This research identifies as distributive all programs that are particularistic; entitlement programs will not be considered distributive owing to the lack of geographic excludability and inability of representatives to target their constituents to the detriment of other districts. Furthermore, distributive spending must be domestic. Members of the House represent specific districts located wholly within the boundaries of the United States. Programs that are international in target are therefore excluded. Lastly, distributive benefits are, naturally, programs that make payments to a non-federal entity. Thus spending on the Federal Government (e.g. wages for federal employees) is excluded. The programs must also disburse payments, not collect them.

electoral prosperity. Of Fenno's three goals (1973), it is the only logical alternative. A particular program might be seen by a representative as good policy, but this hardly explains the vast expansion of distributive spending. Likewise, backing a particular program might curry a representative favor with the party, but this would again only explain a few programs. The electoral goal is pleasing in that appeals to common sense—voters should prefer more to less<sup>2</sup>—and leads to the observed result of programmatic growth if we assume the rationality of representatives. Distributive benefits, in this light, are an important source of incumbency advantage in that they give incumbents something to claim credit for when running for reelection (Mayhew 1974). An incumbent gives support to some program or project that will benefit her district and then advertises its existence to constituents. Constituents, who presumably will benefit from it, are led to vote for the incumbent when she runs for reelection. This relationship is indicative of incumbency advantage because the eventual challenger has no such opportunity to claim credit for that which he has not yet done. The electoral goal logic also yields testable expectations. An increase in distributive benefits should cause an increase in the electoral fortunes of incumbents.

Despite the strength of the theoretical work, empirical analyses on the electoral effects of benefits have produced mixed results. Some studies have found strong, positive relationships between distributive benefits and the vote. Alvarez and Saving (1997) find that the amount of new spending has a significant effect at the district level, but only for Democrats. Levitt and Snyder (1997), looking at 1984 to 1990 find spending on “high variation” programs, which encompass particularistic, non-entitlement, distributive spending, significantly increased the Democratic percentage of the two-party congressional vote. Sellers (1997), also looking at 1984

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<sup>2</sup> We address the weakness of this assumption below.

to 1990, finds significance in some years, but not others at the district level. As an indirect effect, Bickers and Stein (1996) find that distributive benefits significantly discourage the emergence of quality challengers in both the primary and general elections in 1990. Previous work has largely failed to find a link between distributive benefits and vote share. Stein and Bickers (1994, 1995), for example, find null effects at the district level. Null findings are also reported by Feldman and Jondrow (1984) who find that the change in federal spending on construction projects did not have a significant effect on the vote share of the incumbent.

A survey of the literature on distributive benefits yields very few empirical analyses that focus on individual constituents. The overwhelming majority of the empirical work on distributive benefits is conducted at the district level. Even the theoretical work has only addressed the preferences of individuals in justification of the prediction that all legislators seek, and to some degree receive, distributive spending for their districts. Given the prediction that representatives want as large a share of the pork barrel as they can secure, it must be that the representative derives a benefit from this spending. Distributive projects are representative of district service that can be credited to the incumbent when she seeks reelection. If it is assumed that representatives seek benefits for their electoral effects, it must also be assumed that voters generally prefer more spending in their districts.

These assumptions about the individual are built into the empirical models that have been presented by those who have looked at voters as opposed to district level outcomes. There are three works that have directly estimated the effect of distributive benefits on individual responses: Stein and Bickers (1994, 1995), which examine the effect of pork barrel spending on favorability towards incumbents and the likelihood of voting for the incumbent in 1988, and Sellers (1997), which also looks at voting behavior in 1988. The basic findings are that

distributive benefits have a positive effect on thermometer ratings (Stein and Bickers 1994, 1995) and the probability of voting for the incumbent (Stein and Bickers 1994, 1995; Sellers 1997). Neither work, however, conditions the effect of benefits on characteristics of the individual. Stein and Bickers (1994, 1995) do include a measure of awareness from the 1988 National Election Study. What is lacking, however, is a conditioning of the effect of benefits by awareness via an interaction between the variables. Sellers (1997) does condition the effect of benefits, but by an incumbent characteristic. Pork barrel spending is interacted with the fiscal ideology, measured by National Taxpayer Union scores, of the representative. The key finding is that voters are less likely to vote for fiscally conservative representatives that secure more distributive spending. Why should conservatism in the representative, but not the voter lead to a decreasing impact of distributive benefits? An entire field of research tells us that it is not just the preferences of the representative, but the congruence between representative and constituent that matters. This is true for the entire range of issues from abortion to tax cuts. The looming question left by prior research is that when preferences vary meaningfully across the spectrum of political issues, why preferences for distributive spending should be exempted. The answer is that they should not. Thus we now turn to the untenable assumption that all voters prefer more distributive benefits in their districts to less.

### **Preferences for Distributive Benefits**

Where theories of distributive benefits are concerned, the untenable assumption fails to address a fundamental problem for voters, although this problem is central for legislators: the tension between self-interest and collective outcomes. On the one hand, for constituents to receive their own projects, their representatives must agree to fund projects in other districts. The rationale behind this conclusion is that, in order to get their projects funded, representatives

must be collegial and form coalitions that will support each other's distributive needs (Adler 2002; Arnold 1990; Baron and Ferejohn 1989; Ferejohn, Fiorina, and McKelvey 1987; Shepsle and Weingast 1981; Weingast, Shepsle and Johnsen 1981). On the other hand, funding all of these projects leads to inefficient outcomes with respect to the total amount of money spent, an inefficiency driven by the creation of larger-than-necessary coalitions meant to ensure that a given representative is not left without a project.

Voter considerations of distributive benefits can be viewed in a similar manner as scholars consider how legislators face decisions to enact such programs. For both the legislator and the voter, there exists a dichotomy between individual benefits and collective outcomes. Where the legislator is concerned, the distinction is framed best as a specific type of collective action problem: the tragedy of the commons. Each legislator has incentives to secure benefits, yet if all legislators get their projects funded the federal budget becomes grossly inflated increasing the tax burden of everyone. There is a further ideological argument that could be made. Each additional program expands the role of government and the breadth of its spending, which conservatives claim to be against. Returning to the voter, the collective "problem" becomes apparent when we examine the utility of distributive benefits. Consider this simple voter utility function (Equation E.1):

$$[E.1] \quad U_{ij}(\text{Distributive Benefits}_j) = \alpha_{ij} * u_{1ij}(\text{Value of Benefits}_j) + \beta_{ij} * u_{2ij}(\sum \text{Spending on Benefits}_j)$$

For each voter ( $i$ ), the utility of distributive benefits in their district ( $j$ ) is a function of the "value" of those projects and their contribution to overall federal spending (the sum of spending in every  $j$ ). Note also that both factors are weighted by  $\alpha$  and  $\beta$  respectively. These weights are meant to measure how the salience of each factor varies for voters or how much each factor contributes to the total utility of distributive benefits. Consideration of both factors and their

weights marks a strong departure with classical and current theories of distributive benefits, which focus only on the first factor, the utility of the value of the benefits themselves. We do not disagree with the literature in this respect; self-interested individuals regardless of their characteristics should prefer more benefits in their districts to less. Thus,  $u_1$  for all individuals is positive. Discussed below, however, is the utility of benefits as they relate to overall spending and how individuals weight their self-interest respective of collective outcomes.  $\alpha$ ,  $\beta$ ,  $u_1$ , and  $u_2$  are unique to each voter. It is more fruitful, however, to consider how they should vary between groups of voters. The groups focused on here vary by ideological identification, which affects the value of  $u_2$ , and political awareness, which affects the values of  $\alpha$  and  $\beta$ .

Throughout the history of this country, identification along ideological lines has been influenced by the competing values underlying American tradition (McClosky 1958; McClosky and Zaller 1984). The work on core beliefs and values identifies three major orientations: democracy, capitalism / individualism, and egalitarianism. As the ideas of liberalism and conservatism have developed, especially since the 1930s, they have seemed to become more organized around one of these values. Liberalism and “liberal” attitudes place more of an emphasis on egalitarianism—equality both in opportunity and outcomes—whereas conservatism has organized itself more around the value of capitalism (Conover and Feldman 1981; Feldman 1988; McClosky and Zaller 1984).

Organization around values also relates to the historical development of these ideologies. Liberalism, the older of the two, develops in its modern form with the New Deal in the 1930s, although it has undergone a variety of changes since the political unrest of the 1960s and 1970s (Dionne, Jr. 1992). Liberalism embraces state action (Hartz 1955) and, at its heart, the New Deal sought to protect the liberty and economic well-being of citizens through government

intervention (Skocpol 1983; Hoover, et al. 2001). Modern conservatism develops in the 1950s largely in response to the policies of the New Deal. Thus, as New Deal Liberalism concentrated on government intervention to regulate economic and social equality, modern conservatism emphasizes a return to limited government, especially in relation to the economy.

Philosophically, conservatism, as the name suggests, is rooted in some aspect of tradition and resistance to radical change (Rossiter 1982). Insofar as New Deal Liberalism represents a radical change in the nature of the role of government, particularly in the use of government programs, modern conservatism would oppose this growth (Nisbet 1984).

Liberals and conservatives, therefore, are expected to display different preferences for all manner of political outcomes. Their reactions, however, to political information may not directly oppose one another. Liberals, given the focus on equality, may be more inclined to respond to policies meant to create equal economic and social ends, while conservatives, given their development in reaction to the New Deal, may be more interested in the economic outputs of government. Individuals do not respond to the same stimuli. Conover and Feldman (1981) specifically show that individuals base their evaluations of liberals and conservatives—and by extension base their self placement—on responses to different stimuli. Simply, what makes someone want to be liberal does not necessarily make them oppose conservatism.

Opposing, but unequal, reactions have been observed in preferences for spending in many issue domains (Rudolph and Evans 2005) and the social-welfare state specifically (Feldman and Steenbergen 2001; Feldman and Zaller 1992; Skitka and Tetlock 1993). What then should we expect the effects of ideology to be on preferences for distributive benefits? Considering aggregate spending, it is natural to expect liberals to prefer more distributive spending, as it is indicative of an increased role of government, and conservatives to prefer less. Such a

formulation, while overly basic, is related to the findings of Sellers (1997) discussed above. Referring to Function E.1 above, these aggregate level preferences are reflected in  $u_2$ , the utility of benefits as they add to total spending, with values that are positive and negative for liberals and conservatives, respectively. The discussion of unequal reactions is important in that, when considering the effects of distributive benefits, it should not be assumed that the positive value of  $u_2$  for liberals is equal in magnitude to the negative value it has for conservatives. Empirically, the analyses that follow account for this by modeling separate variables for liberal and conservative identification, as opposed to using a unidimensional continuum.

Political awareness can be loosely defined as a disposition towards full political participation. Awareness, or sophistication as many have called it, has a long tradition in the study of mass political attitudes and serves two necessary roles. It is now considered how political awareness affects  $\alpha$  and  $\beta$ , the weights attached to self-interest (in the value of benefits) and collective outcomes (their contribution to total spending).

First, as awareness increases, an individual is more likely to receive political messages (Zaller 1992). That is, awareness can be construed as one's ability to receive and process information of a political nature. The concept of awareness is related to political interest, involvement, and knowledge, all of which contribute to the individual's desire to seek political information and, more importantly, understand the nature of the messages. Through this, awareness can have strong effects on the cognitive evaluations and behavior of individuals. The logic follows that individuals who are unaware should receive few messages regarding the political environment while individuals who are increasingly attentive should be more likely to be exposed to this information. Therefore, aware individuals are also those who are more likely to have their evaluations affected by the changing state of the political world. Relating

awareness to distributive benefits, individuals who are less politically aware arguably have a lower likelihood of exposure to any credit claiming an incumbent may have done or even knowledge of the benefits themselves. As a result, these unaware individuals should be less influenced than their politically aware counterparts by any increase or decrease in the amount of benefits flowing into the district. For those who are completely unaware, the utility of benefits should be nonexistent. Specifically, the values of  $\alpha$  and  $\beta$ , should be zero. Considering  $\alpha$  and  $\beta$  as functions of awareness, the first derivative of  $\alpha$  and  $\beta$  with respect to awareness is positive; that is as awareness increases so do  $\alpha$  and  $\beta$ . The increases, however, are not linear, leading to the second role of awareness.

As awareness increases, individuals are more likely to process political information in a manner consistent with their preexisting political beliefs (or even to hold beliefs at all). Fundamentally, the concept has been defined and measured a number of ways. Some have used correlations among issue positions, suggesting that meaningful constraint between attitudes best measures the concept (e.g. Campbell, et al. 1960; Converse 1964; Nie and Anderson 1974). Others have argued that there are other factors underlying and causing ideological or partisan constraint (Carmines and Stimson 1982; Luskin 1990; Zaller 1992). However it is measured, there is little doubt that the ability to understand and process political information leads to connections between information and political dispositions. Awareness is therefore necessary for individuals to formulate ideologically consistent beliefs both broadly (Campbell, et al. 1960; Converse 1964) and within issue domains (e.g. Carmines and Stimson 1982); ideologically organized thought is also related to higher levels of interest and political information (Luskin 1990). Even more than a simple correlation, it is the politically sophisticated that seem to *rely* more heavily on liberalism and conservatism to structure their beliefs on a wide variety of issue

areas (Converse 1964; Jacoby 1986, 1991). Thus at higher levels of awareness, we posit that the contribution of benefits to overall spending, the factor most influenced by ideology, will contribute more to the total utility of distributive benefits than self-interest in the value of the projects. Above, it was stated that, from the first role of awareness, the first derivatives of  $\alpha$  and  $\beta$  with respect to awareness were positive. From this second role we add that the second derivatives of  $\alpha$  and  $\beta$  with respect to awareness are negative and positive respectively. That is as awareness increases,  $\alpha$  increases at a decreasing rate. The opposite is true of  $\beta$ , which increases at an increasing rate as awareness increases. It leads that there is a point where awareness is sufficiently high and  $\beta$  becomes larger than  $\alpha$ . Put another way, at high levels of awareness, collective concerns eclipse self-interest.

Table 1 summarizes all of these theoretical conjectures regarding the effects of ideology and awareness. The top panel of Table 1 presents hypothetical directions for the value of benefits and their contribution to total government spending by ideology. The middle panel presents changes in the values of  $\alpha$  and  $\beta$  as well as changes in the relationship between the two corresponding to changes in awareness. The bottom panel shows values of the entire utility function, considering both weights and both factors, for various groups by ideology and awareness. Note that distributive benefits have a positive utility for all groups except fully aware conservatives for whom the utility is negative. This can only happen where collective concerns create negative utility (for conservatives) and outweigh self-interest (for the fully aware).

[Table 1 here]

The theoretical expectations for preferences for distributive benefits lead to several hypotheses regarding the effects of distributive benefits on voting as they are conditioned by ideological identification and political awareness.

*Aware Liberal Hypothesis:* As awareness and distributive benefits increase, liberal identifiers are more likely to vote for the incumbent.

*Aware Moderate Hypothesis:* As awareness and distributive benefits increase, moderate identifiers are more likely to vote for the incumbent.

*Aware Conservative Hypothesis:* As awareness and distributive benefits increase, conservative identifiers are less likely to vote for the incumbent.

## **Data and Methods**

The dependent variable is whether an individual votes for or against their incumbent representative in the House, as ascertained from responses to National Election Studies (NES) surveys. It is operationalized here as a dichotomous variable scored 1 if the respondent voted for the incumbent and 0 if the respondent voted against the incumbent. The independent variable of interest is distributive benefits, as previously defined, which is a district level variable. These two details suggest a hierarchical structure in the data, with individuals nested within districts. As a further complication, the data span House elections from 1984 to 2004, which adds a third level of analysis: time. In order to account for unobserved heterogeneity in voting at the district and election year levels, three-level, random intercept models are estimated as detailed below.

### ***Measuring Distributive Benefits, Ideology, and Awareness***

The literature on distributive benefits has produced a great many discussions of how the concept should be measured. Questions arise pertaining to which projects and programs should be included, what the unit of measurement should be, whether to purge programs by their initiation date, and whether the measure should be transformed in any way. Distributive benefits

are measured as the natural log of real<sup>3</sup> spending on new, direct payment, non-entitlement programs in each district. The measure is also mean-centered by electoral cycle prior to analysis.

As discussed above, most studies do not count entitlement programs in a measure of distributive benefits, looking only at particularistic programs and projects. Likewise, a distinction can be made between direct payment and contingent liability programs (Bickers and Stein 2000), which account for insurance and loan programs. The interest here is in the effects of non-entitlement, direct payments, programs that come closest to what would be considered part of the pork barrel. Thus the measure of distributive benefits employed in this research does not include entitlements or contingent liabilities. As for the unit of measurement, there are two schools of thought. On the one hand, Stein and Bickers (1994, 1995) popularized the use of “awards,” or basically a frequency of the number of payments made in a district. On the other, some studies have favored using the amount of the outlays, or actual spending in the district (Alvarez and Saving 1997). We find the rational choice logic that a \$1 million award has a larger effect than a \$1,000 award most convincing. Furthermore, the theoretical approach above requires voters to consider how much their own projects add to the federal budget, thus outlays and not awards are used here. When initiation dates are discussed, the literature is referring to whether a measure of distributive benefits should encompass total federal spending in the district or only spending initiated during the current electoral cycle, so-called “new” spending. Empirical work on the electoral effects of benefits has favored using new spending as the primary measure of distributive benefits (Alvarez and Saving 1997b; Bickers and Stein 1996; Sellers 1997; Stein and Bickers 1994, 1995). Total spending, as argued by Alvarez and Saving (1997), is the summation of activities of previous incumbents or current incumbents in different

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<sup>3</sup> The amount of spending in each electoral cycle is adjusted to be in terms of year 2000 dollars.

political situations. New benefits should, therefore, be more related to the representative's current electoral fortunes. Finally, given that a dollar amount is used, the natural log of the spending is used in the final measure. As with many other types of monetary measures (e.g. candidate spending), we assume that distributive benefits has decreasing marginal effects; moving from \$1,000 to \$2,000 has a larger effect than from \$1,000,000 to \$1,001,000.

Turning to ideology, one possible measure is the ideology scale that most surveys derive from responses. This would mean scaling all individuals on a unidimensional continuum ranging from extremely liberal to extremely conservative. As discussed above, a unidimensional measure ignores the potential differences between conservatives and liberals in their responses to various issues, including distributive benefits. Thus two dichotomous measures of ideology are included: *Liberal* is scored 1 if the respondent identified as either liberal or extremely liberal and *Conservative* is scored 1 if the respondent identified as conservative or extremely conservative.<sup>4</sup>

As a concept, political awareness has been measured in many different ways. One could start with some measure of ideological constraint, as Converse (1964) did. A measure that is easier to construct and also has been shown to adequately measure awareness is raw political knowledge.<sup>5</sup> A good awareness measure based solely on political knowledge, however, would require the scaling of several items. Looking at the NES from 1984 to 2004, one is struck by the paucity of knowledge items in many years. To measure awareness over this span, given the lack

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<sup>4</sup> The ideology measure is in fact a three-category dummy variable with moderates as the excluded category.

<sup>5</sup> There have been also been several articles that critique the "Levels of Conceptualization" measure employed by Campbell et al. (1960) and Converse (1964) on measurement grounds (Cassel 1984; Smith 1980; Sullivan, Piereson, and Marcus 1978).

of knowledge items, we use twenty-five questions gauging three of the factors identified by Zaller (1992, 334) that contribute to awareness: information (knowledge), activity, and interest.

Table 2 lists the questions and the years in which each question was asked.

[Table 2 here]

Having identified a series of items, the next pertinent question is how they should be scaled. For a raw knowledge scale, the case can be made for alpha scaling or even a simple additive scale, which assumes that the items contribute equally to awareness—the more correct responses an individual gives, the more aware they are assumed to be. With a diversity of items like the ones presented in Table 2, the assumption that each “correct” response contributes equally to awareness is far less tenable. Some items may be more indicative of awareness; knowledge items, for example, may be better indicators of awareness than involvement items. Some items may also better differentiate between the aware and unaware. The first property is referred to as an item’s difficulty; the second is the item’s discrimination. Both properties can be estimated for each item using a two parameter item response model. Specifically, all of the items are recoded so that they are dichotomous with responses more indicative of awareness coded as 1. In order to account for election year effects, a separate model is estimated for each year.<sup>6</sup> After the models were estimated, each of the respondents was placed on the latent awareness dimension based on her responses. The final measure used is the placement of respondents on the awareness scale, with the scale bounded at 0 and 1.

### ***Model Specification***

Again, the dependent variable in all models is whether the respondent voted for the House incumbent (scored 1, 0 if the respondent voted against the incumbent). Only respondents

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<sup>6</sup> Estimation results for the item response models are available upon request.

who voted in House races are included. Also, the races must have featured a major party incumbent and a major party challenger. The key independent variable is distributive benefits, measured as the log of real, new spending on direct payment programs (election year-mean centered). Ideology and awareness, as defined above, are expected to condition the effects of distributive benefits. Finally, several other factors are controlled for as seen in Figures 1 and 2.

[Figure 1 here]

Figure 1 clearly distinguishes at which levels variables are being measured. Bold coefficients refer to variables that are interacted with variables at higher levels. For example, the party identification of the respondent ( $\pi_{6j}$ ) is not expected to have an effect on its own. Its effect should be conditioned by the party identification of the incumbent. The interest, therefore, is in  $\beta_{6l}$ , the effect of the party interaction, what can be called party congruence between the representative and the voter. Also, Figure 1 presents the full model or full sample model. This model uses all of the available data and therefore conditions the effects of several variables by the party of the incumbent. To more closely examine partisan differences, two additional models are estimated, which are collectively called the partisan models. These models are estimated on sub-samples of the data: one for districts represented by a Democratic incumbent another for districts with a Republican incumbent. Given the nature of the sub-samples, the partisan models do not include the party of the incumbent or any interaction including the party of the incumbent. In the Republican model, for example,  $\pi_{6j}$  is expected to have a direct effect—the interaction with incumbent party identification is not only redundant, but cannot be estimated because it is perfectly collinear with the respondent's party identification. The interactions in the full model, as well as the remaining interactions in the partisan models, can be seen more clearly in the reduced form models, presented for the full sample model in Figure 2. The reduced form is

created simply by substituting the year and district level coefficient equations into the individual level equation.

[Figure 2 here]

### ***Individual Level Variables***

Five control variables are included and, in most cases, interacted with either the incumbent's or President's party identification to give the results meaning. First, no study of voting behavior is complete without a measure of partisanship (Campbell et al. 1960). Here, the seven-point party identification scale from the NES is used and rescaled so that it ranges from strong Democrat (-3) to strong Republican (3). Given the coding of the dependent variable, party identification is not expected to be significant; neither Republicans nor Democrats should be more likely to vote for the incumbent. It is only when the party of the incumbent is considered that individual level partisanship has a meaning. Party identification is interacted with the party of the incumbent, scored 1 for Republicans and -1 for Democrats. Thus increasing values in the interaction are suggestive of stronger party congruence between the individual and the representative. The interaction is expected to have a strong positive effect on the likelihood of voting for the incumbent. Again, in the partisan models, incumbent party identification is included by virtue of the sub-sample and there is no interaction. In the Democratic model, respondent party identification is expected to have a negative effect; in the Republican model, party identification is expected have a positive effect.

Two demographic variables are included: dummy variables for gender and race. The first is scored 1 if the respondent is female, 0 otherwise. The second is scored 1 if the respondent is black, 0 otherwise. Work on voting behavior has shown evidence of a gender gap, with women more likely to vote for the Democratic candidate (Sapiro 2002). In the full sample, gender is

expected to have no effect until interacted with the incumbent's party, where gender should then have a negative effect (women being less likely to vote for a Republican). It leads that in the Democratic and Republican models, gender on its own should have positive and negative effects respectively. With respect to race, over the last century blacks as a group have become the most consistent in their preference for Democratic candidates (Abramson, Aldrich, and Rohde 2006). The expectations, therefore, are the same as gender.

At the district and year levels, research has demonstrated that the economy is a strong predictor of election outcomes and candidate evaluations (MacKuen, Erikson, and Stimson 1992; Norpoth 1996). Likewise at the individual level, perceptions and evaluations of the economy are also likely to factor into the voting calculus (Downs 1957; Fiorina 1981). Who, however, receives the credit for good evaluations and the blame for poor evaluations? Previous work largely concludes that it is the party of the President that is most likely going to be rewarded or blamed for economic performance (e.g. Nickelsburg and Norpoth 2000). The measure of economic perceptions used here is the retrospective evaluation of the national economy recoded so that respondents who said the economy, as compared to one year ago, was worse are coded as -1, the same as 0, and better as 1. This variable is interacted with the party identification of both the incumbent and the President as described below.

The final individual level control variable used is the feeling thermometer for the incumbent, derived from the feeling thermometers for the Democratic and Republican House candidates. The feeling thermometer is included because many of the variables that affect the vote may also be related to feelings about the candidates, specifically the incumbent. Not including perceptions of or favorability towards the incumbent could potentially induce bias in the estimated coefficients, thus favorability is controlled for here.

### *District and Election Year Level Variables*

In addition to distributive benefits, in the full sample, incumbent party identification is included because it is interacted with several individual level variables. Two additional district level factors are controlled for. First, we include a dummy variable for challenger experience, scored 1 if the challenger has held an elective office. Large quantities of research have demonstrated that experienced challengers receive a larger share of the district vote and, by extension, individuals are more likely to vote for these challengers (Basinger and Ensley 2007; Bond, Covington and Fleisher 1985; Green and Krasno 1988, 1990; Jacobson 1978, 1990, 2001). We, therefore, expect the presence of an experienced challenger to cause a decrease in the likelihood of voting for the incumbent. Second, the spending gap, measured as the difference between the log of challenger spending and the log of incumbent spending, is also included. Much of the same research cited above has also demonstrated the strong effects of campaign spending, especially the spending of the challenger relative to that of the incumbent. Like challenger experience, it is expected to have a negative effect—increases in the spending gap are indicative of increased challenger spending with respect to incumbent spending leading to a decreased likelihood of voting for the incumbent. Lastly, unobserved effects are modeled in the form of the random intercept at the individual level. Thus, any district level heterogeneity in the response that is not captured by the observed effects is encompassed by the district level error term ( $r_{0jt}$ ).

At the election year level, one variable is included: the party identification of the President. It is coded in the same manner as the party identification of the incumbent. Republican presidents (Reagan, G. H. W. Bush, and G. W. Bush) are coded as 1. Clinton, the only Democratic president in the sample, is coded as -1. On its own, the party of the President is

not expected to have an effect on voting in House elections. It is included, however, because it is interacted with national economic retrospections and incumbent party identification.

Specifically, when the interaction of incumbent and presidential party identification equals 1 (party congruence between incumbent and President), positive economic evaluations should cause an increase in the likelihood of voting for the incumbent. When the interaction is negative (party incongruence between incumbent and President), positive evaluations should cause a decrease in the likelihood of voting for the incumbent. In the partisan models, there is no interaction between presidential and incumbent party. The expectations change so that in the Republican model, the interaction of evaluations and presidential party should have a positive effect. Positive evaluations, coded 1, and a Republican President, coded 1, should prove beneficial for Republican incumbents. The opposite is expected in the Democratic model—the effect of the interaction should be negative. Positive evaluations and a Democratic president, coded -1, lead to an interaction term scored -1. For Democratic incumbents to receive a benefit, the coefficient must also be negative. Finally, as with the district level, unobserved heterogeneity in the response due to election year is measured by the error term  $u_{00r}$ .

## **Results**

[Table 3 here]

Table 3 presents the results for the three models discussed above: the full model and the partisan models, which separately analyze districts with Democrat and Republican incumbents. For the full sample and Republican districts, there is significant unobserved heterogeneity across both districts and years, evidenced by the significance of variance components of each model. For Democratic districts, the only significant unobserved heterogeneity is at the district level. All of the models also perform quite well, correctly predicting over 87% of the cases with

proportion reductions in error over 0.54.<sup>7</sup> Related to model diagnostics like the proportion reduction in error, examining control variables also provides a gauge of model specification. Starting with party identification, clearly congruence between the respondent and the incumbent is a strong predictor of the vote. As expected, the interaction is significant and positive. In the partisan models, party identification, which increases with Republican identification, has a strong negative effect in Democratic districts and a strong positive effect in Republican districts. The predicted effects are also observed for race, but not gender. With regards to identification and behavior, there is often a much stronger link between race, specifically blacks, and identifying as and voting for Democrats. Survey results often display a far larger divergence between whites and blacks in their voting behavior than between men and women (Flanigan and Zingale 2006). In these analyses, it is clear that, even after controlling for party identification, blacks display a much higher likelihood of voting for Democratic incumbents and a much lower likelihood of voting for Republican incumbents. Looking at the last two individual level control variables, consistent with prior research, national economic retrospections do have an effect on voting behavior. Specifically, the effects are conditional on party congruence between the President and the incumbent. Individuals will reward and punish members of the President's party for positive and negative evaluations of the economy respectively. Lastly, favorability towards the incumbent is also a significant predictor of the vote; as favorability increases, individuals become more likely to vote for the incumbent. For the district variables, the presence of an experienced challenger does not have a significant effect on voting behavior. The spending gap, however, is significant and in the expected direction. Increases in challenger spending relative to

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<sup>7</sup> Predictions are based on the probability of a positive outcome assuming the residuals of the district and year intercepts equal zero.

incumbent spending lead voters to be less likely to vote for the incumbent. In this respect, the null finding for experience seems to be explained by the spending gap. Experienced challengers are often able to raise and spend far more than their inexperienced counterparts.

With respect to the estimates of interest, there seems to be strong support for the *Aware Conservative Hypothesis*, which posited that conservatives of high awareness would display a decreasing likelihood of voting for the incumbent as distributive benefits increased. The coefficients, however, do not show a tendency of liberals or moderates increasing in their likelihood of voting for the incumbent as awareness and benefits increase. This is found generally, considering all districts, and specifically in Republican and Democratic districts; the effect of the three-way interaction between conservative identification, awareness, and benefits, is negative and significant in all three models. The three way interaction for liberals and the interaction between awareness and benefits, which is the effect for moderates, are not significant. With interactions, however, one needs to look beyond the simple estimates, therefore conditional significance and predicted probabilities are discussed below.

### ***The Effects of Ideology, Awareness, and Distributive Benefits on Voting***

As mentioned above, the coefficients in Table 3 show support for the *Aware Conservative Hypothesis*, which posited that as political awareness and in-district spending on distributive benefits increase, conservatives would be less likely to vote for the incumbent. To clarify relationships between distributive benefits, ideological identification, political awareness, and the vote, we offer Figures 3 and 4, which present predicted probabilities from the full sample and Democratic and Republican models respectively. Results for each sample (full and sub-samples) are comprised of three panels. The top panel in each presents predicted probabilities for conservatives; the middle panel for moderates; the bottom panel for liberals. Each panel

contains a graph with the predicted probability of voting for the incumbent, as well as 95% confidence intervals, along the vertical axis and spending on distributive benefits along the horizontal axis. For convenience, distributive benefits are converted to their real dollar amount (that is not logged or mean-centered). Also note that the range of distributive benefits on each graph is not its theoretical range, but the sample-specific range. The graphs each contain two curves: one for aware respondents and one for unaware respondents. Specifically, predicted probabilities were generated holding awareness at its maximum and minimum values.

[Figures 3 and 4 here]

Looking first at the full sample, we find support for both the *Aware Conservative* and *Aware Moderate Hypotheses*. The top panel of Figure 3 clearly shows that at low levels of distributive spending, there is little difference between high and low awareness conservatives. However, as distributive spending increases, low awareness conservatives are clearly more likely to vote for the incumbent than high awareness conservatives, whose likelihood of voting for the incumbent plummets at higher levels of spending. For moderates, the effects are quite modest, but at high levels of awareness, there is a definite separation in which high awareness moderates are more likely to vote for the incumbent. Effects are all but null for liberals, where the figure not only shows little movement, but extremely wide confidence intervals.

Figure 4 presents the predicted probabilities for the Democratic and Republican districts. The district results show shades of the full sample results, but yet are distinct. For Democratic incumbents, there is support for the *Aware Conservative* and *Aware Liberal Hypotheses*. As distributive benefits increase in Democratic districts, high awareness conservatives become far less likely to vote for the incumbent and there is less uncertainty in this result as confidence bands become much narrower. Low awareness conservatives also display less uncertainty, but in

the opposite direction becoming more likely to vote for Democratic incumbents in districts with higher levels of distributive spending. High awareness liberals appear very similar in their behavior to low awareness conservatives—there an increasing likelihood of voting for the incumbent as distributive benefits increase and a narrowing of the confidence intervals. Moderates throughout the range of awareness display little change in their voting behavior due to changes in distributive benefits. In Republican districts, just as in the full sample and Democratic incumbent models, there is at least some support for the *Aware Conservative Hypothesis*. There is also support for the *Aware Moderate Hypothesis*. Just as in Figure 3 and the Democratic panel of Figure 4, the Republican panel of Figure 4 shows high awareness conservatives decreasing in their likelihood of voting for the incumbent as distributive benefits increase and low awareness conservatives increasing in that likelihood. Unlike the other models, there is much less certainty in the voting behavior of aware conservatives in Republican districts as there was for the full sample or Democratic districts. It is in Republican districts, however, that the most prominent movement of moderates is displayed. Moderates of high awareness clearly become more likely to vote for the Republican incumbent as distributive benefits increase. For liberals across the awareness scale, as benefits increase, there is a decreasing likelihood of voting for the incumbent. These effects, however, are also marked by extremely wide confidence intervals, casting doubt on their statistical significance.

Most intriguing of these results is that the behavior of each ideological group at various levels of awareness is context dependent. This becomes clear when the partisan sub-samples are compared. Depending on the partisan context (i.e. the partisanship of the incumbent), one can find support for all three hypotheses relating benefits, ideology, awareness, and the vote. Given a high level of awareness, Democratic incumbents whose districts have received an increasing

amount of distributive benefits will likely be rewarded by liberal voters. These incumbents, however, should not expect to make friends out of conservatives, who show a very low probability of voting for the incumbent as benefits increase. This result, while novel to the study of distributive benefits, appeals to common sense. Incumbents already enjoy a relatively high level of support from the electorate. Even high awareness conservatives will vote for Democratic incumbents under certain conditions. Contributing too much to increasing the federal budget, however, gives aware conservatives all the justification they need to abandon the incumbent in support of the Republican challenger. Interestingly enough, the opposite behavior is displayed by low awareness conservatives. Conforming to expectations regarding preferences for distributive benefits, low awareness conservatives appear compelled by self-interest to support the incumbent who brings projects home to the district.

In Republican districts, where increases in distributive spending are concerned, the emphasis is shifted to moderates and, to a large extent, conservatives. Unlike in Democratic districts, moderates in Republican districts show a clear sign of supporting the incumbent (and their self-interest) as awareness and distributive benefits increase. Conservatives follow the same pattern as in Democratic districts. At high levels of awareness, they are less likely to vote for the incumbent. At lower levels of awareness, they are more likely to vote for the incumbent. In Republican districts, however, there is more uncertainty, reflected by the wider confidence intervals, in the behavior of conservatives. Remember, the dependent variable is whether the respondent voted for or against the incumbent. To observe highly aware, conservative voters voting against Republican incumbents in favor of Democratic challengers sets a stringent threshold. Yet, there is support for the hypothesis that, as awareness and distributive benefits increase, conservatives become less likely to vote for Republican incumbents.

## Conclusion

At the outset, we began with a quote from John McCain citing Republican abandonment of small government principles as a primary reason for Democrats gaining majorities in both the House and the Senate. This research supports that view. More so than another other group we identify, it is politically aware conservatives that appear most acutely in tune with distributive spending. It is this group that is willing to vote against incumbents, both Democrat and Republican, who too vastly increase in-district benefits. Note also the strength of this effect; it is a fairly high bar to set to require sophisticated conservatives to vote *against* Republican incumbents in favor of Democratic challengers. When distributive spending is too high, however, it is a bar aware conservatives are willing to clear. Future research will do well to further investigate how ideology, awareness, and distributive benefits relate to other forms of voting behavior. In particular, it may also be the case that distributive benefits have effects on turnout. While the link between increasing benefits and decreasing likelihood of voting for the incumbent was more tenuous for aware conservatives in Republican districts, it may be the case that these conservatives, rather than vote for the Democratic challenger, simply do not vote at all.

Returning to this research, it is also a vast improvement over previous examinations in several respects. First, the preceding discussion develops a more nuanced and accurate view of the electorate with respect to distributive benefits. We move away from the assumption underlying much of the work on the electoral effects of distributive benefits, that voters always prefer more distributive spending in their districts to less, and develop a framework by which preferences for distributive benefits can be ascertained. Specifically, two individual characteristics are identified, ideology and political awareness, that affect preferences for benefits and condition the effect of benefits on voting. This theoretical approach need not be

limited to studying distributive benefits, but can also be applied to other issue areas that have the potential to pit self-interest against collective outcomes.

Second, this research expands the scope of previous studies of the effects of distributive benefits on voting, which have been limited to analyzing one election. Making use of more recent methodological developments like hierarchical modeling, we are able to appropriately estimate the effect of distributive benefits on the vote choices of individuals across elections from 1984 to 2004. Finally, as our results demonstrate, distributive benefits may not be as indispensable to incumbency advantage as traditionally assumed. Certainly there are groups that reward representatives for their distributive efforts (low awareness conservatives, for example). Yet, it cannot be ignored that distributive benefits are not the electoral cure-all. At the very least, incumbents may need to be more careful about how much is spent in their districts, how much they claim credit for, and to which constituents credit claiming attempts are directed.

In the future, Republican representatives may be better served to heed the advice of Stein and Bickers (1994), who observe that Republican identifiers seem less aware of distributive spending. They posit that Republican voters are less likely supporters of increased government spending. Republican incumbents, therefore, are more careful about their credit claiming so as not to alienate their core supporters. Likewise, Democratic incumbents would do well to know that distributive benefits are not winning over their potential conservative opponents. While it takes a sizable increase in distributive spending to get aware conservatives to vote against Republicans, their more natural allies, aware conservatives turn against their Democratic incumbents far faster. In sum, distributive benefits remain a useful tool for incumbents to gain electoral advantages. As this research shows, distributive benefits are a tool requiring temperance in its use.

## References

- Abramson, Paul R., John H. Aldrich, and David W. Rohde. 2006. *Change and Continuity in the 2004 Elections*. Washington, D.C.: CQ Press.
- Adler, E. Scott. 2002. *Why Congressional Reforms Fail: Reelection and the House Committee System*. Chicago: University of Chicago Press.
- Alvarez, R. Michael and Jason L. Saving. 1997b. "Deficits, Democrats, and Distributive Benefits: Congressional Elections and the Pork Barrel in the 1980s." *Political Research Quarterly* 50: 809-831.
- Arnold, R. Douglas. 1990. *The Logic of Congressional Action*. New Haven: Yale University Press.
- Baron, David P. and John A. Ferejohn. 1989. "Bargaining in Legislatures." *American Political Science Review* 83: 1181-1206.
- Basinger, Scott J. and Michael J. Ensley. 2007. "Candidates, Campaigns, or Partisan Conditions? Reevaluating Strategic-Politicians Theory." *Legislative Studies Quarterly* 32: 361-394.
- Bickers, Kenneth N. and Robert M. Stein. 1996. "The Electoral Dynamics of the Federal Pork Barrel." *American Journal of Political Science* 40: 1300-1326.
- Bickers, Kenneth N. and Robert M. Stein. 2000. "The Congressional Pork Barrel in a Republican Era." *Journal of Politics* 62: 1070-1086.
- Bond, Jon R., Cary Covington, and Richard Fleisher. 1985. "Explaining Challenger Quality in Congressional Elections." *Journal of Politics* 47: 510-529.
- Campbell, Angus, Philip E. Converse, Warren E. Miller, and Donald E. Stokes. 1960. *The American Voter*. Chicago: University of Chicago Press.
- Carmines, Edward G. and James A. Stimson. 1982. "Racial Issues and the Structure of Mass Belief Systems." *Journal of Politics* 44: 2-20.
- Cassel, Carol A. 1984. "Issues in Measurement: the 'Levels of Conceptualization' Index of Ideological Sophistication." *American Journal of Political Science* 28: 418-429.
- Conover, Pamela J. and Stanley Feldman. 1981. "The Origins and Meaning of Liberal / Conservative Self-Identification." *American Journal of Political Science* 25: 617-645.
- Converse, Philip E. 1964. "The Nature of Belief Systems in Mass Publics." In David Apter, ed. *Ideology and Discontent*. Free Press.
- Dionne, Jr., E. J. 1992. *Why Americans Hate Politics*. New York: Simon and Schuster.

- Downs, Anthony. 1957. *An Economic Theory of Democracy (Paperback, 1997)*. Boston: Addison-Wesley.
- Feldman, Paul and James Jondrow. 1984. "Congressional Elections and Local Federal Spending." *American Journal of Political Science* 28: 147-164.
- Feldman, Stanley. 1988. "Structure and Consistency in Public Opinion: the Role of Core Beliefs and Values." *American Journal of Political Science* 32: 416-440.
- Feldman, Stanley and Marco R. Steenbergen. 2001. "The Humanitarian Foundation of Public Support for Social Welfare." *American Journal of Political Science* 45: 658-677.
- Feldman, Stanley and John Zaller. 1992. "The Political Culture of Ambivalence: Ideological Responses to the Welfare State." *American Journal of Political Science* 36: 268-307.
- Fenno, Richard F., Jr. 1973. *Congressmen in Committees*. Boston: Little, Brown and Company.
- Ferejohn, John, Morris Fiorina, and Richard D. McKelvey. 1987. "Sophisticated Voting and Agenda Independence in the Distributive Politics Setting." *American Journal of Political Science* 31: 169-193.
- Fiorina, Morris. 1981. *Retrospective Voting in American National Elections*. New Haven: Yale University Press.
- Flanigan, William H. and Nancy H. Zingale. 2006. *Political Behavior of the American Electorate*. 11<sup>th</sup> ed. Washington, D.C.: CQ Press.
- Green, Donald P. and Jonathan S. 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 P. and Jonathan S. Krasno. 1990. "Rebuttal to Jacobson's 'New Evidence for Old Arguments.'" *American Journal of Political Science* 34: 363-372.
- Hartz, Louis. 1955. *The Liberal Tradition in America: An Interpretation of American Political Thought since the Revolution*. New York: Harcourt Brace.
- Hoover, Kenneth R., John Miles, Vernon Johnson, and Sara Weir. 2001. *Ideology and Political Life*, 3rd ed. Belmont, CA: Wadsworth Publishing.
- Jacobson, Gary C. 1978. "The Effects of Campaign Spending in Congressional Elections." *American Political Science Review* 72: 469-491.
- Jacobson, Gary C. 1990. "The Effects of Campaign Spending in House Elections: New Evidence for Old Arguments." *American Journal of Political Science* 34: 334-362.

- Jacobson, Gary C. 2001. *The Politics of Congressional Elections*. 5th ed. New York: Addison-Wesley.
- Jacoby, William G. 1986. "Levels of Conceptualization and Reliance on the Liberal-Conservative Continuum." *Journal of Politics* 48: 423-431.
- Jacoby, William G. 1991. "Ideological Identification and Issue Attitudes." *American Journal of Political Science* 35: 178-205.
- Levitt, Steven D. and James M. Snyder, Jr. 1997. "The Impact of Federal Spending on House Election Outcomes." *Journal of Political Economy* 105: 30-53.
- Lowi, Theodore J. 1964. "American Business, Public Policy, Case-Studies, and Political Theory." *World Politics* 16: 677-715.
- Luskin, Robert C. 1990. "Explaining Political Sophistication." *Political Behavior* 12: 331-361.
- MacKuen, Michael B., Robert S. Erikson, and James A. Stimson. 1992. "Peasants or Bankers? The American Electorate and the U.S. Economy." *American Political Science Review* 86: 597-611.
- Mayhew, David R. 1974. *Congress: The Electoral Connection*. New Haven: Yale University Press.
- McClosky, Herbert. 1958. "Conservatism and Personality." *American Political Science Review* 52: 27-45.
- McClosky, Herbert and John Zaller. 1984. *The American Ethos: Public Attitudes towards Capitalism and Democracy*. Cambridge: Harvard University Press.
- Nickelsburg, Michael and Helmut Norpoth. 2000. "Commander-in-Chief or Chief Economist? The President in the Eye of the Public." *Electoral Studies* 19: 313-332.
- Nie, Norman H. and Kristi Andersen. 1974. "Mass Belief Systems Revisited: Political Change and Attitude Structure." *Journal of Politics* 36: 540-591.
- Nisbet, Robert. 1984. "Uneasy Cousins." In George W. Carey, ed. *Freedom and Virtue: the Conservative/Libertarian Debate*. Lanham, MD: University Press of America.
- Norpoth, Helmut. 1996. "Presidents and the Prospective Voter." *Journal of Politics* 58: 776-792.
- Rossiter, Clinton. 1982. *Conservatism in America*. Cambridge: Harvard University Press.
- Rudolph, Thomas J. and Jillian Evans. "Political Trust, Ideology, and Public Support for Government Spending." *American Journal of Political Science* 49: 660-672.

- Sapiro, Virginia. 2002. "It's the Context, Situation, and Question, Stupid: The Gender Basis of Public Opinion." In Barbara Norrander and Clyde Wilcox, eds. *Understanding Public Opinion*. 2nd ed. Washington, D.C.: CQ Press.
- Sellers, Patrick J. 1997. "Fiscal Consistency and Federal District Spending in Congressional Elections." *American Journal of Political Science* 41: 1024-1041.
- Shepsle, Kenneth A. and Barry R. Weingast. 1981. "Political Preferences for the Pork Barrel: A Generalization." *American Journal of Political Science* 25: 96-111.
- Skitka, Linda J. and Philip E. Tetlock. 1993. "Providing Public Assistance: Cognitive and Motivational Processes Underlying Liberal and Conservative Policy Preferences." *Journal of Personality and Social Psychology* 65: 1205-1223.
- Skocpol, Theda. 1983. "The Legacies of New Deal Liberalism." In Douglas MacLean and Claudia Mills, eds. *Liberalism Reconsidered*. Totowa, NJ: Rowman and Allanheld.
- Smith, Eric R. A. N. 1980. "The Levels of Conceptualization: False Measures of Ideological Sophistication." *American Political Science Review* 74: 685-696.
- Stein, Robert M. and Kenneth N. Bickers. 1994. "Congressional Elections and the Pork Barrel." *Journal of Politics* 56: 377-399.
- Stein, Robert M. and Kenneth N. Bickers. 1995. *Perpetuating the Pork Barrel: Policy Subsystems and American Democracy*. Cambridge: Cambridge University Press.
- Sullivan, John L., James E. Piereson, and George E. Marcus. 1978. "Ideological Constraint in the Mass Public: A Methodological Critique." *American Journal of Political Science* 22: 233-249.
- Toomey, Pat. "Why We Lost." *National Review Online* 10 Nov. 2006. 20 Nov. 2006. <<http://article.nationalreview.com/?q=YWE4OGYxNWI3NGRiYTYwYjliYTNmNTZlNTdmOWU0ODA=>>.
- Weingast, Barry R., Kenneth A. Shepsle, and Christopher Johnsen. 1981. "The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics." *Journal of Political Economy* 89: 642-664.
- Will, George F. "A Loss's Silver Lining." *Washington Post* 9 Nov. 2006, final ed.: A29.
- Zaller, John R. 1992. *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.

*Prob. (Vote for Inc. = 1) = Log( $\phi_{ijt} / 1 - \phi_{ijt}$ ) =  $\eta_{ijt}$*

*Individual Level*

$$\begin{aligned} \eta_{ijt} = & \boldsymbol{\pi}_{0jt} + \boldsymbol{\pi}_{1jt} \text{ Liberal}_{ijt} + \boldsymbol{\pi}_{2jt} \text{ Conservative}_{ijt} + \boldsymbol{\pi}_{3jt} \text{ Awareness}_{ijt} \\ & + \boldsymbol{\pi}_{4jt} (\text{Liberal}_{ijt} \times \text{Awareness}_{ijt}) + \boldsymbol{\pi}_{5jt} (\text{Conservative}_{ijt} \times \text{Awareness}_{ijt}) \\ & + \boldsymbol{\pi}_{6jt} \text{ Resp. Party ID}_{ijt} + \boldsymbol{\pi}_{7jt} \text{ Female}_{ijt} + \boldsymbol{\pi}_{8jt} \text{ Black}_{ijt} \\ & + \boldsymbol{\pi}_{9jt} \text{ National Economic Retrospections}_{ijt} + \boldsymbol{\pi}_{10jt} \text{ Inc. Feeling Therm.}_{ijt} + e_{ijt} \end{aligned}$$

*District-Year Level*

$$\begin{aligned} \pi_{0jt} = & \boldsymbol{\beta}_{00t} + \beta_{01t} \text{ Distributive Benefits}_{jt} + \boldsymbol{\beta}_{02t} \text{ Inc. Party ID}_{jt} \\ & + \beta_{03t} \text{ Challenger Experience}_{jt} + \beta_{04t} \text{ Spending Gap}_{jt} + r_{0jt} \\ \pi_{njt} = & \beta_{k0t} + \beta_{k1t} \text{ Distributive Benefits}_{jt} ; \text{ for } n = \{1, 2, 3, 4, 5\} \\ \pi_{mjt} = & \beta_{m0t} + \beta_{m1t} \text{ Inc. Party ID}_{jt} ; \text{ for } m = \{6, 7, 8\} \\ \pi_{9jt} = & \boldsymbol{\beta}_{90t} + \boldsymbol{\beta}_{91t} \text{ Inc. Party ID}_{jt} \\ \pi_{10jt} = & \beta_{100t} \end{aligned}$$

*Election Year Level*

$$\begin{aligned} \beta_{00t} = & \gamma_{000} + \gamma_{001} \text{ Pres. Party ID}_t + u_{00t} \\ \beta_{02t} = & \gamma_{020} + \gamma_{021} \text{ Pres. Party ID}_t \\ \beta_{9kt} = & \gamma_{9k0} + \gamma_{9k1} \text{ Pres. Party ID}_t ; \text{ for } k = \{0, 1\} \\ \beta_{nkt} = & \gamma_{nk0} ; \text{ for all other } \beta \text{ not listed above} \end{aligned}$$

**Figure 1.**  
**Multilevel Model of Voting Behavior**

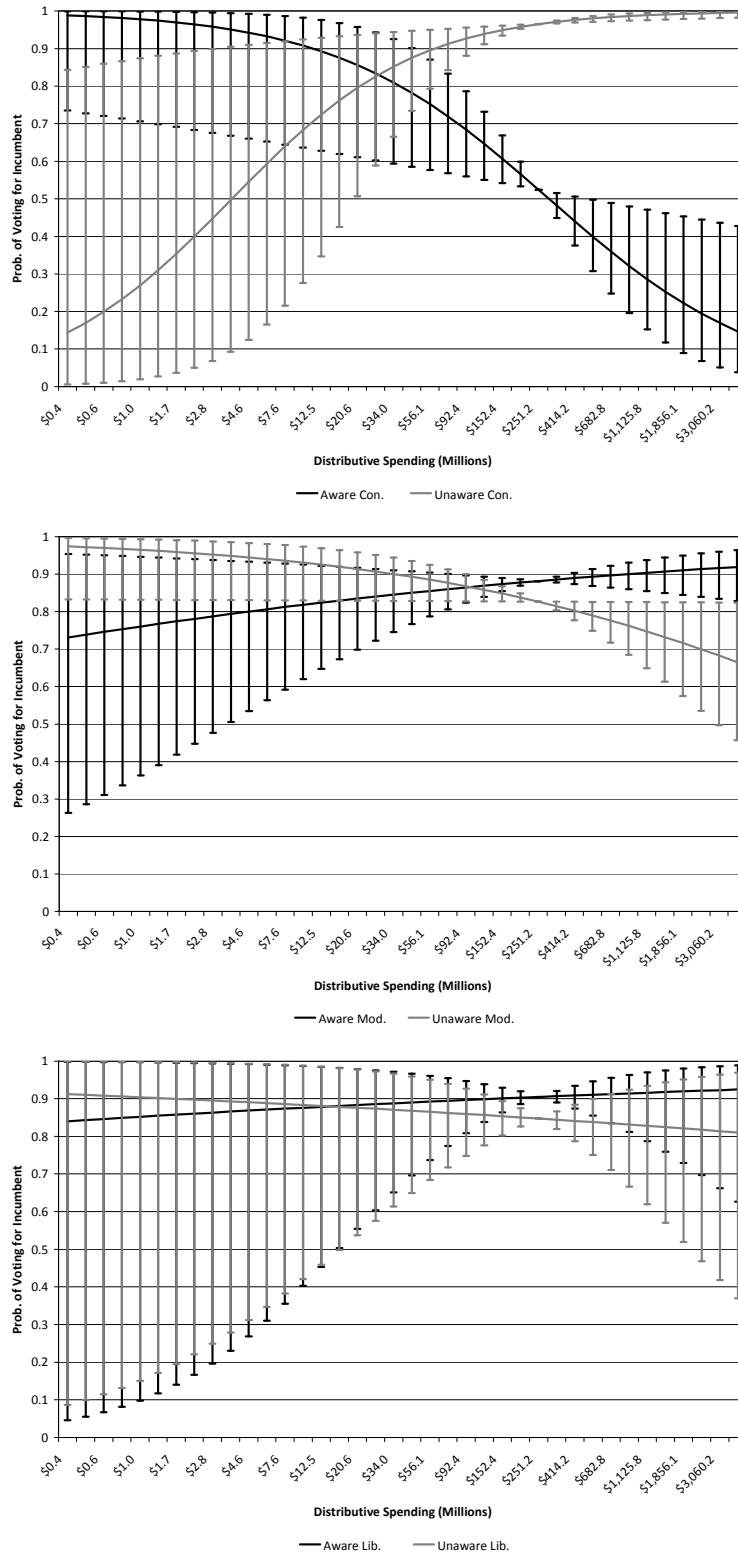
Note: Bold coefficients identify variables that are interacted at higher levels. For the Partisan Models, coefficients  $\gamma_{020}$ ,  $\gamma_{021}$ ,  $\gamma_{610}$ ,  $\gamma_{710}$ ,  $\gamma_{810}$ ,  $\gamma_{910}$  (all of the effects that include the incumbent's party identification) are constrained to zero.

$Prob. (Vote\ for\ Inc. = 1) = \text{Log}(\varphi_{ijt} / 1 - \varphi_{ijt}) = \eta_{ijt}$

$$\begin{aligned} \eta_{ijt} = & \gamma_{000} + \gamma_{001} \textit{Pres. Party ID}_t + \gamma_{010} \textit{Distributive Benefits}_{jt} + \gamma_{020} \textit{Inc. Party ID}_{jt} \\ & + \gamma_{021} (\textit{Pres. PID}_t \times \textit{Inc. PID}_{jt}) + \gamma_{030} \textit{Challenger Exp}_{jt} + \gamma_{040} \textit{Spending Gap}_{jt} \\ & + \gamma_{100} \textit{Liberal}_{ijt} + \gamma_{110} (\textit{Liberal}_{ijt} \times \textit{Distributive Benefits}_{jt}) \\ & + \gamma_{200} \textit{Conservative}_{ijt} + \gamma_{210} (\textit{Conservative}_{ijt} \times \textit{Dist Benefits}_{jt}) \\ & + \gamma_{300} \textit{Awareness}_{ijt} + \gamma_{310} (\textit{Awareness}_{ijt} \times \textit{Dist Benefits}_{jt}) \\ & + \gamma_{400} (\textit{Liberal}_{ijt} \times \textit{Awareness}_{ijt}) + \gamma_{410} (\textit{Liberal}_{ijt} \times \textit{Awareness}_{ijt} \times \textit{Dist Benefits}_{jt}) \\ & + \gamma_{500} (\textit{Conservative}_{ijt} \times \textit{Awareness}_{ijt}) + \gamma_{510} (\textit{Conservative}_{ijt} \times \textit{Awareness}_{ijt} \times \textit{Dist Benefits}_{jt}) \\ & + \gamma_{600} \textit{Resp. PID}_{ijt} + \gamma_{610} (\textit{Resp. PID}_{ijt} \times \textit{Inc. PID}_{jt}) \\ & + \gamma_{700} \textit{Female}_{ijt} + \gamma_{710} (\textit{Female}_{ijt} \times \textit{Inc. PID}_{jt}) + \gamma_{800} \textit{Black}_{ijt} + \gamma_{810} (\textit{Black}_{ijt} \times \textit{Inc. PID}_{jt}) \\ & + \gamma_{900} \textit{National Economic Retrospections}_{ijt} + \gamma_{901} (\textit{Pres. PID}_t \times \textit{Nat Econ Retro}_{ijt}) \\ & + \gamma_{910} (\textit{Inc. PID}_t \times \textit{Nat Econ Retro}_{ijt}) + \gamma_{911} (\textit{Pres. PID}_t \times \textit{Inc. PID}_{jt} \times \textit{Nat Econ Retro}_{ijt}) \\ & + \gamma_{1000} \textit{Inc. Feeling Therm.}_{ijt} + [u_{00t} + r_{0jt} + e_{ijt}] \end{aligned}$$

**Figure 2.**  
**Reduced Form Model**

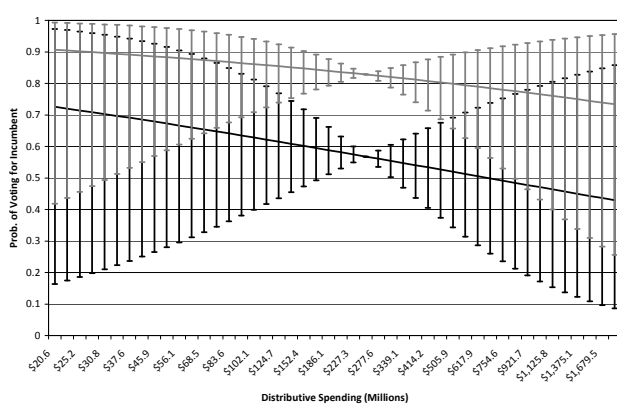
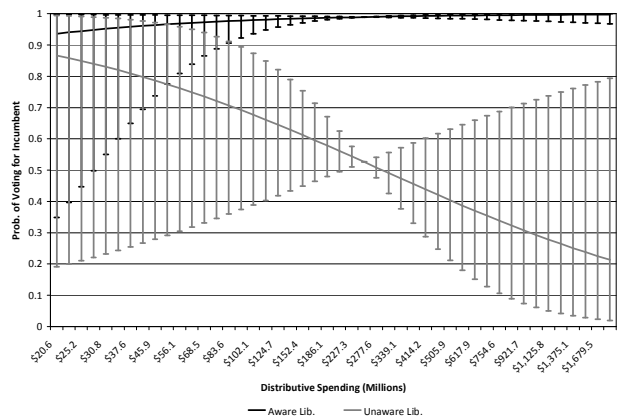
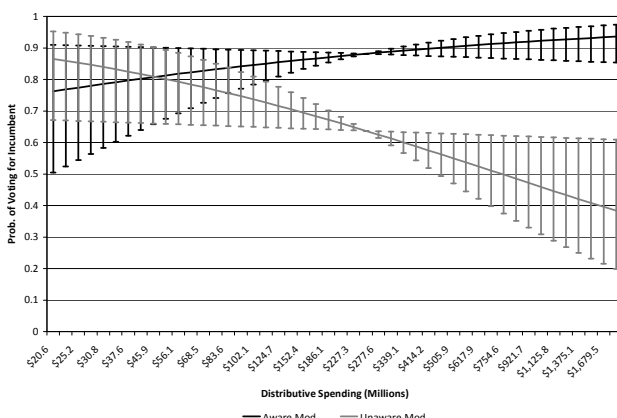
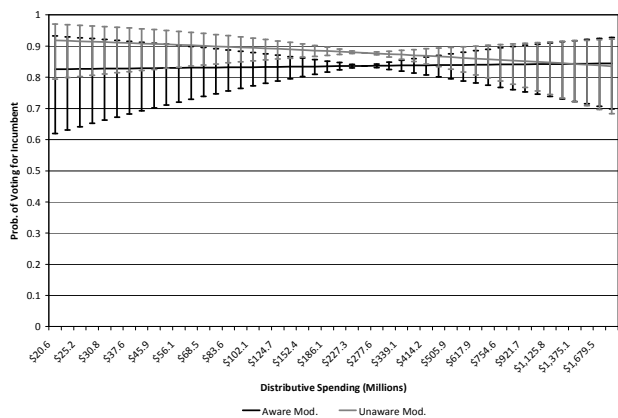
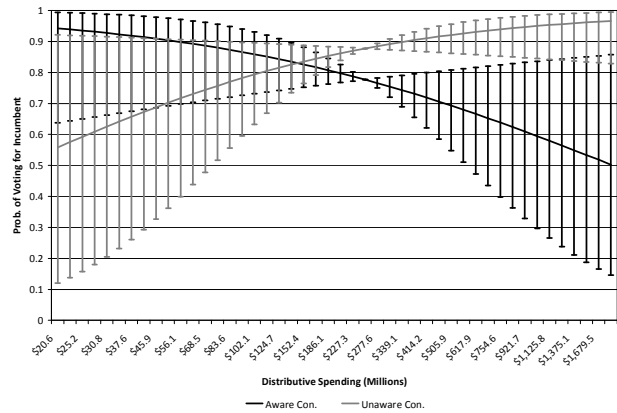
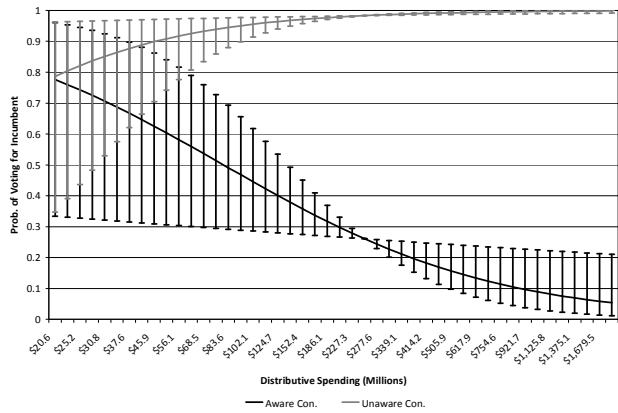
Note: Bold type here denotes the coefficients and interactions of interest with respect to the theoretical discussion above.  $\gamma_{310}$ , the effect of the interaction between awareness and distributive benefits, is expected to be positive. This would mean that, as awareness and benefits increased, moderates would be more likely to vote for the incumbent.  $\gamma_{410}$  is also expected to be positive, whereas the sum of  $\gamma_{410}$  and  $\gamma_{310}$  is the effect of the interaction between awareness and benefits for liberals.  $\gamma_{510}$  is expected to be negative and larger than  $\gamma_{310}$ , whereas the sum of  $\gamma_{510}$  and  $\gamma_{310}$  is the effect of the interaction between awareness and benefits for conservatives.



**Figure 3.**

**Predicted Probabilities of Voting for the Incumbent (Full Sample)**

Note: For Figures 3 and 4, ideology varies between panels and awareness varies within panels. For ease of interpretation, distributive spending is converted to its real dollar amount. Each probability curve includes 95% confidence bands.



***Democratic Incumbents***

***Republican Incumbents***

**Figure 4.**  
**Predicted Probabilities of Voting for the Incumbent (Partisan Models)**

**Table 1.**  
**Hypothetical Values for Voter Utility Function E.1 Varying Ideology and Political Awareness**

<i>Ideology</i>	<i>Value of Distributive Benefits</i>	<i>Contribution to Total Spending</i>	
Liberal	+	+	
Moderate	+	0	
Conservative	+	-	

<i>Political Awareness</i>	<i>Value of <math>\alpha</math></i>	<i>Value of <math>\beta</math></i>	<i>Relationship between <math>\alpha</math> and <math>\beta</math> (see below)</i>
Fully Aware	$\alpha > 0$	$\beta > 0$	$\beta \geq \alpha$
Moderately Aware	$\alpha > 0$	$\beta > 0$	$\alpha > \beta$
Completely Unaware	0	0	$\alpha = \beta$

<i>Ideology &amp; Awareness</i>	<i>Value of Voter Utility Function</i>
Mod. Aware Liberal	+
Fully Aware Liberal	+
Mod. Aware Moderate	+
Fully Aware Moderate	+
Mod. Aware Conservative	+
Fully Aware Conservative	-

**Relationship between Alpha and Beta as Awareness Increases**

The graph illustrates how the values of  $\alpha$  and  $\beta$  change with increasing awareness. The  $\alpha$  line is a straight line starting from the origin. The  $\beta$  line is a curve that starts below the  $\alpha$  line at low awareness levels, crosses the  $\alpha$  line at a moderate awareness level, and continues to rise above the  $\alpha$  line as awareness increases further.

**Table 2.**  
**Political Awareness Items from the National Election Studies**

<i>Item</i>	<i>Question</i>	<i>Years Included</i>
<i>Political Knowledge: Identification and Factual Knowledge</i>		
1	Can identify at least one House candidate	1984 – 2000
2	Which party had the most seats in the House before the election	1984 – 2004
3	Which party had the most seats in the Senate before the election	1984 – 2000, 2004
4	Name Recognition: Vice President	1986 – 2000, 2004
5	Name Recognition: Speaker of the House	1986 – 2000, 2004
6	Name Recognition: Senate Majority Leader or Prominent Senator	1986 – 1990
7	Name Recognition: Chief Justice of the Supreme Court	1986 – 2000, 2004
8	Name Recognition: Foreign Leader (usually Prime Minister of the UK)	1986 – 2000, 2004
9	Name Recognition: Foreign Leader (usually President of the USSR / Russia)	1986 – 1994
10	Other Knowledge Item	1988 – 1994
<i>Political Knowledge: Ideological / Issue Placement</i>		
11	Placement: Republican Party more conservative than Democratic Party	1984 – 2004
12	Placement: Republican Party prefers less spending than Democratic Party	1984 – 2000 – 2004
13	Placement: President on ideological scale; Republicans right of center, Democrats left of center	1984 – 2000, 2004
<i>Interest and Exposure to Information</i>		
14	Were you interested in the campaigns	1984 – 2004
15	Did you pay attention to campaign news in the newspaper	1984 – 1992, 1996, 2000, 2004
16	Did you pay attention to campaign news on television	1984 – 1992, 2000 – 2004
17	Were you contacted by one of the parties	1984 – 2004
18	How many days this week did you watch news on television	1984 – 2004
19	How many days this week did you read a daily newspaper	1984 – 2004
<i>Involvement</i>		
20	Are you a member of an organized group	1984, 1996, 2000 – 2004
21	Did you try to influence anyone's vote	1984 – 1992, 1996 – 2004
22	Do you talk to family or friends about politics	1984 – 2004
23	Have you participated in a protest in the last year	2000 – 2004
24	Have you worked with other people on a community issue in the past year	1996, 2000 – 2004
25	Did you go to any meetings, etc. in support of a particular candidate	1984 – 2004

**Table 3.**  
**Results for the Multilevel Model (1984 – 2004)**

<i>Variable</i>	<i>Exp.</i>	<i>Full Sample</i>		<i>Dem. Incumbents</i>		<i>Rep. Incumbents</i>	
		<i>Coef.</i>	<i>SE</i>	<i>Coef.</i>	<i>SE</i>	<i>Coef.</i>	<i>SE</i>
<i>Individual Level Controls</i>							
Respondent Party ID	<b>0/-/+</b>	0.030	0.023	-0.515**	0.030	0.550**	0.034
x Inc. Party ID	<b>+/.</b>	0.584**	0.021				
Female	<b>0/+/-</b>	-0.054	0.080	-0.033	0.107	-0.021	0.122
x Inc. Party ID	<b>-/.</b>	-0.042	0.079				
Black	<b>0/+/-</b>	-0.064	0.190	0.615**	0.239	-0.727**	0.296
x Inc. Party ID	<b>-/.</b>	-0.650**	0.190				
National Econ. Retro.	<b>0/0/0</b>	0.005	0.059	-0.063	0.079	0.101	0.087
x Pres. Party ID	<b>0/-/+</b>	0.065	0.059	-0.120	0.080	0.261**	0.088
x Inc. Party ID	<b>0/.</b>	0.077	0.058				
x Pres. ID x Inc. PID	<b>+/.</b>	0.207**	0.058				
Feeling Thermometer	<b>+/+/+</b>	0.068**	0.002	0.068**	0.003	0.066**	0.004
<i>District &amp; Year Level Controls</i>							
Incumbent Party ID	<b>0/.</b>	0.164**	0.066				
x Pres. Party ID	<b>0/.</b>	-0.046	0.049				
Challenger Experience	<b>-/-</b>	-0.008	0.107	0.181	0.144	-0.263	0.167
Spending Gap	<b>-/-</b>	-0.176**	0.030	-0.180**	0.043	-0.174**	0.044
President Party ID	<b>0/0/0</b>	-0.013	0.064	0.031	0.067	-0.049	0.097
<i>Pork, Ideology &amp; Awareness</i>							
Distributive Benefits	<b>+/+/+</b>	-0.319	0.221	-0.177	0.306	-0.519	0.320
Awareness	<b>0/0/0</b>	0.445	0.626	-0.345	0.820	1.443	0.955
x Dist. Benefits	<b>+/+/+</b>	0.474	0.401	0.207	0.553	0.855	0.582
Liberal	<b>0/+/-</b>	0.151	1.042	-1.871	1.649	1.010	1.757
x Dist. Benefits	<b>+/+/+</b>	0.223	0.617	-0.529	1.032	0.418	0.900
x Awareness	<b>0/+/-</b>	0.092	1.793	4.794	3.023	-2.742	2.966
x Aware x Dist. Benefits	<b>+/+/+</b>	-0.287	1.069	1.246	1.835	-1.033	1.549
Conservative	<b>0/-/+</b>	1.761**	0.741	2.074**	1.018	1.406	1.214
x Dist. Benefits	<b>+/+/+</b>	1.105**	0.465	1.275**	0.650	1.213*	0.730
x Awareness	<b>0/-/+</b>	-3.674**	1.311	-4.748**	1.836	-2.164	2.149
x Aware x Dist. Benefits	<b>-/-</b>	-1.935**	0.822	-2.220*	1.163	-2.167*	1.306
Intercept		-3.566**	0.383	-3.306**	0.508	-3.876**	0.576
<i>Variance Components</i>							
$\beta_{00t}$ (Level 2)		0.187**	1,705.2	0.200**	970.6	0.244**	674.8
$\gamma_{000}$ (Level 3)		0.017**	20.2	0.001	12.0	0.033**	18.7
Individuals (N) & Districts (J)		6,907	1,645	3,969	931	2,938	714
PCP & PRE		0.874	0.552	0.872	0.542	0.879	0.573

\* p < 0.1; \*\* p < 0.05

Note: The expectations column contains the expected directions of each coefficient. The first expectation is for the full sample, the second for Democratic incumbents, and the third for Republican incumbents. Periods indicate coefficients that are not estimated in the Democrat and Republican models.