Stony Brook University

Distributive Benefits and American House Elections: Outcomes and Voter Heterogeneity

A Dissertation Presented

by

Andrew Heath Sidman

to

The Graduate School

in Partial fulfillment of the

Requirements

for the Degree of

Doctor of Philosophy

in

Political Science

Stony Brook University

August 2007

Stony Brook University

The Graduate School

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Abstract of the Dissertation

Distributive Benefits and American House Elections: Outcomes and Voter Heterogeneity

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It is an established truth that incumbents have a large advantage in congressional elections. Conventional wisdom holds that a major source of their advantage is the ability to secure localized benefits while in office for which they can claim credit during the next campaign. Given the breadth of spending on these programs, it is not surprising that a sizable literature has developed addressing questions of who gets benefits, how much they get, and how they affect elections. It is assumed that securing and claiming credit for these benefits adds to incumbency advantage because voters always prefer more to less. However, the literature does not address conditions under which this assumption might not hold for individual voters.

I propose a theory of voting behavior that identifies ideology and political awareness as two individual characteristics that condition the electoral effects of distributive benefits. Conservatives and liberals differ in their preferences for public policy generally. They should also differ in their voting behavior when faced with a change in distributive spending. These effects are observed primarily in voters who are politically aware. Specifically, aware conservatives are less likely to support incumbents who secure a large amount of distributive benefits while aware liberals are more likely to support the same incumbents. This presents an additional opportunity for campaigns to impact the election by drawing attention to levels of distributive spending.

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Acknowledgements

The completion of any dissertation is reflective of the greatest work and sacrifices. This work reflects not only the twenty months that went into its completion, but twenty-two years of schooling including four years of graduate study. Such a feat cannot be accomplished without the limitless help and advice of those we come to count on along this journey. It was not easy finishing graduate school. Many frustrating, highly caffeinated nights were spent working and there were times I questioned whether going through this was worth it. If it were not for the love, support, and confidence of my wife Nicole, I doubt I would be writing these acknowledgements now. Nicole has given me more than I could ever ask for or expect from another person. She is my sanity and my outlet. She keeps me focused when there is work to be done and reminds me that true joy is found not in the office, but out. For this she will always have my unending love and gratitude.

I also have to acknowledge two other very special people, without whom I would not be where I am: my parents, Barbara and Jerold. This is as much their accomplishment as it is mine. Throughout my life, they have encouraged me to follow my dreams and supported me every step of the way. They have always been there to celebrate my successes, shoulder my defeats, and their love has given me limitless potential. Of all the things my parents have done for me, when it came to my education, there was no sacrifice too great, no minute spared, no dollar unspent. They worked very hard so that I could spend my time chasing my goals instead of running from them. There aren't enough words to express how much I love and care for them.

This work also could not be completed without the sage advice of my teachers and peers. First, I thank my advisor Scott Basinger, whose friendship was instrumental in completing this dissertation, finishing school, and navigating the job market. Second, I wish to thank my committee, Jeffrey Segal, Shanna Rose, and René Lindstädt for their valuable comments throughout school and especially on this dissertation. Third, I thank my undergraduate advisor, Jeffrey Cohen, who has remained a valuable friend and insightful colleague. Finally, I thank Helmut Norpoth and Maxwell Mak. Working with them has made graduate school one of the best experiences of my life.

Chapter 1
Introduction

> "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 houses 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, however, conservatives 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 Republicans abandoned their small government principals? At least the masses have bought the

argument. In a poll given November 9 and 10 by Princeton Survey Research Associates International and *Newsweek*, 67% of respondents said Republican handling of spending and the deficit was a major reason for the Democrats' success. Only 8% said it was not a reason at all.

Distributive Benefits, Incumbents, and Elections

The story of the 2006 election leads to the larger discussion of how government spending impacts elections and what kind of spending is important. The type of spending that is the focus of this research is what has been called "distributive spending." Distributive spending, or distributive benefits, constitutes money paid by the Federal Government for domestic programs. A full definition of distributive benefits is given in Chapter 2, but for the purposes of this introduction distributive benefits can be loosely defined as programs meant to benefit a specific set of targets—congressional districts, for example. In a positive light, these are programs that provide needed or desired assistance to an area or a group of constituents. For example, the Airport Improvement Program[1] provides funding to owners and operators of public use airports for the "development of a nationwide system of airports adequate to meet the needs of civil aeronautics" (U.S. General Services Administration 2006). To beneficiaries, this program provides valuable assistance in the maintenance and improvement of the resources needed to facilitate air travel.

There is also another side to distributive benefits. In fact, readers may be more familiar with the terms "pork barreling" or "earmarks." This same federal program could

[1] The Airport Improvement Program, whose Catalog of Federal Domestic Assistance (CFDA) number is 20.106, is administered through the Department of Transportation and authorized through Public Law 103-272.

be considered wasteful spending by those who either rarely or never travel by plane or believe the maintenance and improvement of airports is more the responsibility of their owners than the Federal Government, which has spent an average of $5 billion per Congress on this program since 1983. While this amount may seem small in comparison to other outlays of the Federal Government, one must consider what the intended purpose of the money is. For starters, this program is not intended to provide assistance in airport planning; there is a separate program for that. Nor is it intended to help with the development of *new* airports (again, that would be a separate program). This program benefits only those who own and operate an airport and primarily for the purposes of airport and terminal improvement. Referring to the definition of distributive benefits given above, we can point to the specific targets of this program—districts that contain an airport.

Moving away from specific examples like the Airport Improvement Program, we can begin to examine how federal programs in general serve the interests of members of Congress. I begin with the common assumption that incumbents are primarily electorally minded (Mayhew 1974). That is, despite having desires for more power and good policy (Fenno 1973) incumbents should be first concerned with ensuring their position in office. Given this, the securing of distributive benefits is one of several activities in which incumbents can engage to ensure a larger electoral advantage. Specifically, distributive benefits give incumbents something to claim credit for when running for reelection (Mayhew 1974). Credit claiming is suggestive of a *direct* electoral benefit. An incumbent gives support to some program that will benefit her district, the expansion of an airport for example, and then advertises the existence of this program to constituents.

Claiming credit for the improvement of the airport should lead constituents, who presumably will benefit from it, 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.

There may also be *indirect* electoral benefits associated with distributive spending. Assume that the expansion project was lobbied for by a local affiliate of the AFL-CIO. The project, which will employ members of the union, could garner the incumbent a large donation from the political action committee associated with the union. At the very least, the union may be less inclined to contribute to the challenger. Distributive benefits, therefore, could help accentuate the imbalance between the resources available to the challenger and those available to the incumbent. Thus, even without voters being aware of the benefits accruing to the district, incumbents could still have strong incentives to secure more projects. Discussion of indirect effects also highlights the potential role of interest groups in the realization of benefits derived from distributive spending. Yet the role of interest groups need not be limited to contributions. During the campaign season, the union could endorse the incumbent or even advertise on the incumbent's behalf, letting union members know that the incumbent supported the expansion of the airport. These relationships are depicted in Figure 1.1, which demonstrates how distributive benefits can add to incumbency advantage.

[Figure 1.1 here]

First, note that some of the boxes in Figure 1.1 are solid and some are dashed. The solid boxes represent steps in the cycle that can, and will be, empirically measured. The dashed boxes include my conjectures about the mechanisms through which

incumbents benefit from the existence of federal programs. Starting from the upper-left corner of Figure 1.1, a representative secures distributive benefits for her district. She is then able to claim credit for the existence of these benefits. Following the solid arrow, as explained above, the representative receives a direct electoral benefit from distributive spending: constituents subject to the representative's credit claiming are more inclined to vote for her in the upcoming election. The representative, therefore, is able to win with a higher share of the vote. Following the dashed arrow from credit claiming demonstrates the indirect electoral effects of distributive benefits. Through increased contributions for the representative (or decreased contributions for the challenger), the representative can build a larger monetary advantage before the election. Given the importance of campaign spending to election outcomes (e.g. Jacobson 1978, 1980, 1990, 2001; Green and Krasno 1988, 1990), the incumbent representative is again able to win a safer victory.

What then can we expect in the next Congress? Coming from a safer victory, the incumbent will feel less vulnerable, which may lead her to not seek distributive benefits as actively as before given her safer electoral position (Stein and Bickers 1994a; Bickers and Stein 1996). It may also be the case that the incumbent, owing some of the electoral victory to the existence of programs, is inclined to continue to push for spending on those programs favored by her constituents and interest groups that gave her support in the past.[2] The path indicative of more spending on distributive benefits is bolder than the path representing less spending because I feel it is more likely that incumbents will continue to push for spending. The reason for this is that distributive benefits are designed so that, except under rare circumstances, the beneficiaries are grateful for the

[2] Arnold phrases it as follows: "Once citizens become addicted to a flow of benefits, legislators cannot bear to be associated with terminating them" (1990, 137).

assistance and losers in the process, the average tax payer, are largely unaware of this specific type of spending (Weingast, Shepsle, and Johnsen 1981).

Distributive Behavior in an Institutional Context

How are representatives actually able to secure distributive benefits? It is important to note that, as a whole, distributive spending, or even the pork barrel, receives very little national attention. There will occasionally be stories about earmarking, more so in recent years, but distributive politics remains one arena in which Congress is usually free to act without much fanfare or public scrutiny. Understanding distributive politics requires some knowledge of how Congress and, for the purposes of this dissertation, the House organizes itself and conducts business. There are three important institutional features that affect how benefits are obtained by representatives: the committee system, the partisan organization of the House, and the collegial relationship of representatives. These theories are addressed in the following chapter to help identify which factors most influence the distribution of distributive spending. It is important to note here, however, that the institutions and very organization of the House determines the rules of the game that members play in securing legislation generally and distributive spending specifically.

Underlying all of these recent theories of congressional action is the belief that members of Congress are "Mayhewian" actors, placing the reelection goal above all others. It is through this belief that we theorize representatives (and senators) will use committee membership, party, and collegial interactions to behave in a manner that will garner support from constituents and other actors that further the reelection goal. I have

further suggested that this is also true in the realm of distributive politics; representatives use all of these institutional characteristics to gain more benefits for their districts, improving their chances of reelection. I consider this in more detail below.

The Disconnect between Elections and Voters

In later chapters, I will make note of the following assumption that underlies most of the work on distributive benefits: voters always favor more to less. In a more detailed formulation, it can be said that, given an amount of federal spending on distributive benefits, citizens of a district should rationally prefer receiving a larger share of the benefits than a smaller share. This assumption helps to explain why all representatives appear to secure at least some distributive benefits for their districts. To be sure, prior research on the electoral effects of distributive benefits usually finds a link between increased spending and the improved electoral performance of the incumbent. This link, however, is not always as strong as theory would dictate (e.g. Stein and Bickers 1994a, 1995). For the aggregate or district level, at which most studies are conducted, this assumption seems plausible; the average voter in a district is likely to prefer more in-district benefits to less. The problem that enters is that districts are not comprised of the average voter. The pervasiveness of gerrymandering has helped create districts that are more homogeneous in terms of the preferences of voters (be they political or otherwise). Thus we are likely to see some districts that contain a fair amount of liberal voters and some that contain a fair amount of conservatives.

The defense of the "more to less" assumption is often based on rationality and cost-benefit analysis, as stated in the opening sentences of this section. The question I

pose is how we can justify the assumption that all voters, regardless of political preferences and particularly preferences for government spending, are equally likely to prefer more spending on distributive benefits to less. It is my argument that this assumption cannot be justified, resulting in the often weak relationships that are found between distributive benefits and election outcomes. I propose that particular characteristics of individual voters condition their responses to distributive benefits. Preferences and specifically ideology should play a large role in voter responses to any political information including information on distributive benefits. Conservatives, for example, who generally prefer smaller government, should be less inclined to vote for incumbents who actively increase the size of the federal budget. Just as important as ideology is political awareness. If the realm of distributive politics is important to an individual, she will need two things on Election Day: awareness of spending on distributive benefits and the ability to formulate an ideologically consistent position with regards to changes in spending. The first is a function of political awareness alone. In fact, for any voter to appropriately reward an incumbent for bringing projects to the district, or conversely working to limit spending by the Federal Government, that voter needs to be aware, on some level, of what the government and specifically her representative is doing. The second requires both awareness and a set of preferences regarding government spending. The voter, once aware of the existence of programs, has to decide whether she is or is not in favor of the government expansion and whether the actions of her representative are consistent or inconsistent with her preferences.

Structure of the Dissertation

The remainder of this dissertation will proceed as follows. The first part, consisting of the next two chapters, examines the electoral effects of distributive benefits with a traditional focus, the district level. Chapter 2 takes a detailed look at distributive benefits. I discuss in great detail how distributive benefits should be defined as a concept and work through the various complications that arise when operationalizing benefits. Theoretical arguments for how benefits are expected to be distributed are presented. Finally, I assess these expectations empirically, examining which incumbents and districts receive more benefits. Chapter 3 builds off of the framework developed in Chapter 2. In Chapter 3, I discuss the previous work on the electoral effects of distributive benefits at the district level and highlight the potential endogeneity between benefits, challenger strength, campaign spending, and election outcomes. A system of equations is estimated to determine the direct and indirect effects of distributive benefits on the vote share of incumbents. To foreshadow some of the results, I conclude by noting the inability of district level analyses to explain why Republican incumbents benefit less from distributive spending than Democrats. I suggest that the reason for this finding, as well as the weakness of findings in previous work, is due to heterogeneity at the individual level.

The second part of this dissertation, which includes Chapters 4, 5, and 6, addresses the electoral effects of distributive benefits at the individual level. Chapter 4 describes a theory of individual level behavior as it relates to distributive benefits. Great emphasis is placed on ideology and political awareness as factors that condition individual responses to political information, including information on distributive

spending. I further speculate about the roles played by campaigns, the media, and interest groups in disseminating this information. The expectations derived from this theory are tested in Chapter 5, which uses random intercept designs to model heterogeneity at the individual and district levels. Specifically, the analyses in this chapter are meant to examine the extent to which ideology and political awareness condition the effects of distributive benefits. Chapter 6, written with Scott Basinger, analyzes these relationships in greater detail for the 2002 House elections. In this chapter, we move away from the assumption that the highly aware are the most likely to have knowledge of distributive spending. We look at campaign advertisements to ascertain the relationship between political messages and distributive spending. The final chapter of the dissertation discusses the implications of the findings and poses questions for the future.

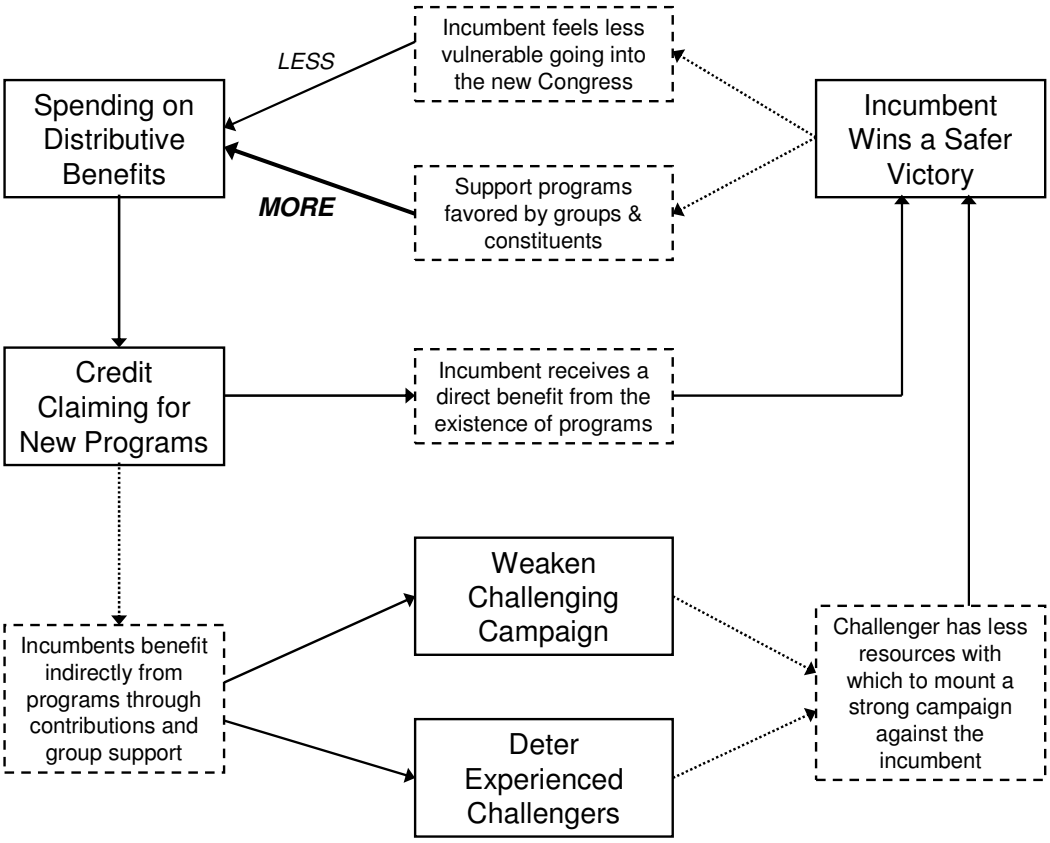

Figure 1.1
The Incumbency Advantage Cycle

Chapter 2
The Distribution of Distributive Benefits

Distributive benefits and especially the pork barrel have become the bedrock of American politics. They are ever-present and their persistence is only equaled by their persistent growth. Since 1993, the federal government has spent an average of $1.6 trillion per year on direct domestic expenditures and obligations (U.S. Department of Commerce 2005). In 2004, this amount was $3.2 trillion, including $1.0 trillion in loans and insurance programs (liabilities). To put this number in perspective, for 2004, direct expenditures accounted for twenty-nine percent of the real gross domestic product of the United States; the programs generally considered distributive benefits accounted for eighteen percent of GDP. Furthermore, the percentage of direct domestic expenditures encompassed by distributive benefits has been steadily increasing since 1993. Since total spending has also increased every year since 1993, it is clear that distributive benefits have grown faster than the other types of direct domestic spending (salaries and wages, direct loans, insurance, etc.). As a testament to the longevity of distributive politics, Wilson (1986) examines river and harbor pork barrel projects dated as early as 1889.

Not surprisingly, the distributive phenomenon has given rise to an extensive body of literature on the subject. There is a small body of work, discussed in the next chapter, that empirically examines the electoral effects of distributive benefits. The bulk of the literature, however, is devoted to explaining the presence and growth of distributive benefits in the political system, both theoretically and empirically. This breadth of research had lead to a variety of opinions regarding how distributive benefits should be

defined, how they should be measured, and how we expect them to be distributed. This chapter will streamline all of these discussions. First, I tackle the definitional issue. Next, I discuss different measurement strategies for distributive benefits and derive a measure appropriate to assessing the effects of benefits on elections. Given this measure, expectations for the distribution of benefits are drawn from the literature. Finally, these expectations are empirically tested. There is great importance to devoting a separate chapter to the measurement and distribution of benefits. As I will discuss in Chapter 3, one of the issues in the examination of electoral effects is how to measure distributive benefits correctly. Measurement issues are one possible source for the often weak and contradictory effects reported at the district level. Thus a lengthy discussion of what distributive benefits are and how they should be operationalized is warranted here.

Distributive Benefits Defined

A usual starting point for the definition of distributive benefits comes from the work of Theodore Lowi. In his typology of government policy, he 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" (1964, 690). The distinctions that are paramount in the forthcoming analyses are geographic. Specifically, distributive benefits in this analysis are those that can be targeted for particular geographic units, congressional districts. Such benefits can also be referred to as "particularistic" and include what is commonly called pork barrel spending.

As a second condition, it must be that the beneficiaries of distributive policies and those who bear the burdens of their costs are generally unidentifiable to one another. As Lowi states, "they are policies in which the indulged and the deprived, the loser and the recipient, need never come into direct contact" (1964, 690). This condition has developed under the framework of cost-benefit analysis and partially explains the unchecked growth of distributive programs. 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 690,000 constituents, is being paid for by the 300 million residents of the United States.

As a basic definition, 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;
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. Stein and Bickers 1994; Alvarez and Saving 1997b). Taking a step back, the literature often distinguishes between distributive (particularistic) and redistributive (entitlement) spending, although the terms themselves do not comport well with common sense. Redistributive is a relative term—any federal program that *you* do not benefit from is redistributive. You pay taxes to fund the program, thus your wealth is redistributed to others. The parenthetical references are more appropriate for a political distinction between types of

government spending. Particularistic benefits are excludable in their nature; they can be targeted. Entitlement programs can also be exclusive, but in a different way, making them different from particularistic programs. 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. Representative X could not, for example, increase spending on Social Security only in her district. Any change to the formula would affect all individuals who qualify for Social Security. While this is also true for particularistic spending, these programs are already geographically targeted. Thus increases or decreases in funding should largely affect the target geographies. 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[1] (FAADS), meet this requirement.

Moving to a more specific definition of distributive benefits, this dissertation will identify 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,

[1] The Federal Assistance Award Data System is the primary source of information on distributive spending. The database was popularized by Stein and Bickers (1994a) and most of the empirical work that followed has made use of their dataset. An extensive discussion about working with FAADS and a list of excluded entitlement programs are presented in Appendix 1.

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. This distinction will be addressed in the measurement section.

Theoretical Expectations for the Distribution of Benefits

Regarding the distribution of benefits, the literature points to three major alternatives. Universalism theorizes that benefits will be distributed in a uniform manner, which certainly appears true in terms of the simple existence of benefits. Every district receives some share of the distributive pie. Grounds for contention arise when one considers the amount each district receives. Under a universalistic framework, we would expect fairly little variation in the overall amount of benefits flowing to districts. Granted some districts will receive more transportation pork, others more agricultural pork; representatives, however, will seek a roughly equal share of the total distributive pie. A second theory is majoritarianism, which simply states that the majority party, owing to its status, will have an edge in the securing of distributive spending. A third theory, which is relatively new to the study of distributive politics, is blame avoidance (Balla, et al. 2002), which posits that the majority party will make sure the minority party receives some benefits, but with respect to the amount of benefits received, the majority party will take a significantly larger share. The following paragraphs discuss these three theories in more detail, speculate as to what should be expected for a measure of benefits and consider where the electoral connection fits into theories of distributive politics.

Universalism, Majoritarianism, and Blame Avoidance

Considering the distribution of benefits and the observation that almost all districts do indeed receive some benefits, much of the theoretical work has focused on explaining why the equilibrium outcome is usually closer to universalism and when we might observe majoritarianism. All of these expectations formalize the reception of benefits as a multiplayer game. In order for a given project to pass and benefits to be distributed, the program needs a minimum winning coalition (MWC), which will vary in size for a given set of conditions. In general, the MWC can range from a simple majority, which is needed to pass the legislation that initiates the spending, to universalism, in which all members must be part of the winning coalition. Several authors consider how varying conditions change the size of the MWC and attempt to explain the more common outcome of universalism.[2]

Shepsle and Weingast (1981), for example, state that under pure majority rule, the outcome should be majoritarian, but uncertainty surrounding which representatives will comprise the MWC generates outcomes closer to universalism. This is akin to the argument made in Chapter 1 referencing risk-averse legislators. Benefits are assumed to have important electoral consequences and further assumed to be generally preferred by voters (Niou and Ordeshook 1985); thus every legislator is compelled to secure at least some benefits.[3] To ensure they are not left out of the current or future coalitions, representatives are often willing to increase the size of coalitions, even if it means receiving a smaller share of the benefits. Empirically, Wilson (1986) finds support for

[2] Universalism is not specific to distributive politics. Collie (1988), for example, finds that universalism has increased in the House generally since the 1960s.

[3] Anagnoson (1982) provides support for the view that legislators believe distributive benefits are electorally profitable. He finds that public works project announcements, which historically take very long, are more likely to occur closer to elections.

this proposition in river and harbor legislation between 1889 and 1913. Hamman (1993) also finds that universalism results as legislators seek support for particular subsets of policy areas; the individual subsets are not distributed universally, but considering the area as a whole (mass transportation programs) universalism develops as beneficiaries from each subset support one another. Universalism can also result from the distortion of the costs and benefits of projects—specifically, the diffuse nature of the costs and the concentration of the benefits, *assuming* that legislators seek projects in which their reelection constituencies are beneficiaries (Weingast, Shepsle, and Johnsen 1981). Additionally, more universal distributions can result from institutional characteristics like open amendment rules (Ferejohn, Fiorina, and McKelvey 1987; Baron and Ferejohn 1989). Again, the assumption is that representatives seek benefits for their districts because of their effect on elections; open amendment rules giving representatives the ability to add their pork to bills. This claim is explicitly made by Niou and Ordeshook (1985) who argue that universalism results from every legislator pursuing reelection. For a particular representative, if every other representative is seeking benefits, there is already a sufficient burden on her constituents. She might as well seek benefits herself to show her constituents that they are receiving at least something for their tax dollars.

As noted above, an alternative to pure universalism or majoritarianism is blame avoidance, presented by Balla, et al. (2002). The authors explain that universalism is expected and often observed in the dichotomous reception of benefits; everyone gets a program. The majority party, while wanting to exploit distributive benefits to its advantage, does not want to open itself up to criticisms of wasteful spending. One way to prevent the minority party from criticizing the majority is to give them a share of

distributive benefits. Thus the majority party avoids blame for wasteful spending by letting the minority party spend on benefits as well; the majority party, however, will take a larger share of the spending. They empirically test blame avoidance theory by examining higher education earmarks and find some support for blame avoidance. Party exerts no affect over whether or not a district receives an earmark, but being in the majority does have some affect on the value of the earmark. Under a general analysis of distributive benefits, especially using the measure developed above, the expectation generated under blame avoidance is the same as under majoritarianism. We would expect the majority party to receive a larger share of distributive spending for a given congress.

Institutional Characteristics

Given that every member wants some share of distributive benefits, the difficulty presented to legislators is how best to construct a MWC. There would seem to be little logical preference for a universal outcome on the part of House members. Yet we often observe outcomes that approach universal distribution because legislators are risk averse and sacrifice a potentially larger share of benefits for the increased certainty of receiving any benefits at all. It follows then that members would also look for institutional features that would boost their chances of being part of the MWC without losing much in the way of benefits. The introductory chapter briefly mentioned parties, committees, and collegiality are three institutional features that aid in the conducting of House business. I return to these now to identify those factors that could most influence the distribution of distributive benefits. If members are trying to secure a larger share of the pie, then they

will have to work through one of these organizing principles to limit the size of the winning coalition.

Recent work has placed strong emphasis on the role of party in the organization and behavior of Congress (Rohde 1991; Cox and McCubbins 1993; Snyder and Groseclose 2000, 2001; McCarty, Poole, and Rosenthal 2001). There is also evidence of an expanded role for party leaders in legislative outputs (Sinclair 1995) both directly and in the composition of committees (Cox and McCubbins 1993). Where distributive politics are concerned, I have referenced party as one avenue through which representatives can build coalitions. In this respect, party may be more important than committee, depending on the strength of the party. Committee chairs are members of the majority party and the majority party naturally enjoys a majority of the seats on nearly all committees; thus even if members are committee-focused, they must prefer electoral success for the party as opposed to failure. Aldrich and Rohde (1997, 2005) note that partisan conditions in Congress over recent years have caused an expansion of party power.[4] Given the increase in party strength and the need for coalition building, there should be a substantial influence of party over the distribution of benefits. Stronger parties do, however, come with a price where the concerns of the individual representative are concerned. Members that do not remain loyal to the party coalition risk receiving fewer benefits, given the control that party can assert over committee and floor action in the House. Although some commentators have noted that even recent,

[4] Their argument is based on their theory of conditional party government, which posits that parties and party leadership will be stronger when party members are more homogenous in their preferences and the two parties are divergent in their preferences. They note that the data strongly suggest a recent increase in both intraparty homogeneity and interparty divergence.

strong parties will afford their members leeway to pursue their particularistic agenda, even without the full support of the party (Cox and McCubbins 1993).

Parties make natural coalitions among members and are seen as a solution to collective action problems in general (Aldrich 1995). This is especially true in periods of increased party strength (Aldrich and Rohde 1997, 2005). During such periods, we would expect party leaders to exert more control over legislative processes in general and distributive policies specifically. Thus parties may also lead to a majoritarian outcome in the distribution of benefits. Party as an organizing principle would lead to sharper partisan differences in the distribution of benefits. Referring to majoritarian theory, members of the majority party would receive a greater share of distributive benefits. Levitt and Snyder (1995) find that between 1984 and 1990, districts received more benefits as they became more Democratic in their voting behavior. Party effects are also found by Bickers and Stein (2000), who report that after taking majorities in the House and the Senate, Republicans significantly decreased spending on entitlement and other direct payment programs[5] while increasing the amount spent on contingent liability programs. This may also be true of party leaders, who could secure more benefits given their placement in the party power structure (Stein and Bickers 1994b).

Many have noted, however, that parties in the United States are traditionally weak as compared to other countries, both in terms of controlling legislative outputs (Brady, Cooper, and Hurley 1979; Cox and McCubbins 1991; Krehbiel 1993) and the reelection of their members (Pomper 1977). Party is also not the exclusive means by which to construct a MWC, nor is it the only vehicle through which Congress acts. Looking at

[5] The spending decreases were on programs not directed at individuals. Entitlement programs targeting individual beneficiaries are what Bickers and Stein (2000) call "sacrosanct" and thus beyond substantial political manipulation.

legislative activity, the primary vehicle through which Congress acts is the committee system. Committees provide representatives the opportunity to work outside of party to form coalitions. In many respects, committee membership reflects the demands that certain constituents have for legislative action (Cox and McCubbins 1993; Adler 2002). This is certainly true of committees that focus on specific arenas, agricultural policy for example.[6] To the extent that there is a relationship between committee membership, at least committees that represent particular constituency interests, and constituency demand for legislative outputs, we can also emphasize the importance of constituents to legislative outputs. The committee system may also provide increased insulation for distributive politics from the eyes of the general public. Putting all of these features together, the committee system is often singled out in qualitative accounts as one of the largest culprits in the growth of distributive benefits. Committee members, shielded by the clandestine nature of committee behavior, work with each other to secure mutually beneficial programs. In order to ensure their programs receive funding, spending that is desired by other committees is worked into a bill and the result is pork laden legislation that distributes benefits to a substantial number of districts. Adler (2002) provides the example of funding for U.S. troops in Kosovo. The 1999 act also included $70 million for livestock assistance, $500,000 for a crime fighting unit along the D.C. / Maryland border, $2.2 million to improve the sewers in Salt Lake City, and other pork projects.

Weingast (1994) posits a gains-from-trade explanation in which representatives support programmatic growth in areas that do not impact their constituents in order to

[6] Cox and McCubbins (1993) would say these committees have targeted externalities; that is their outputs generally affect committee members. Adler (2002) would further refer to this relationship in terms of high-demand, or constituent, committees. Certain committees represent policy areas that are of a higher demand for particular constituencies. Representatives from high-demand districts are more likely to serve on the appropriate committees.

receive support for their own programs (see also Adler 2002). Under such a view, there would be little universalism within policy domains; most transportation pork goes to members of the Transportation Committee (Knight 2004).[7] Generally, however, we observe both a more-than-majoritarian distribution of benefits and we have a rationale to explain the persistent growth of benefits. Committees in this framework could form a basis for the creation of winning coalitions thus committee leaders, as opposed to party leaders, would be more likely to exert control over the distribution of benefits.[8] If committees are more important to inducing cooperation among legislators, we would expect the powerful members of committees, chairs and ranking minority members, to receive a disproportionate share of benefits. In general, however, one must also account for the fact that some committees, due to the constituencies they represent, will be more successful at securing benefits than others.[9] Thus certain district characteristics should cause representatives to seek certain committees and signal an increased demand for distributive spending.

Securing distributive benefits, like all legislation, is representative of a collective action problem. Members want a large share of benefits to aid in their reelection bid and need to cooperate in order to receive the highest share they can. This problem is ameliorated by the existence of committees and especially parties, which can drive cooperation. This notion of legislative action highlights an institutional characteristic of

[7] Goss (1972) makes similar conclusions examining the Armed Services Committee and military base employment, as does Ferejohn (1974) looking at rivers and harbors legislation from 1947 to 1968.
[8] Gryski (1991) finds a positive relationship between committee influence and benefits received by a state. Omitted, however, are two influence positions that are included in this analysis: Chair and Ranking Minority Member.
[9] The prominence of local demands is emphasized by Rich (1989), who finds that the distribution of public works projects is more affected by local composition than the political influence of legislators. Alvarez and Saving (1997a), however, do find a link between constituency committees and the reception of a disproportionate share of benefits.

Congress related to parties and committees, yet separate from both: the collegial nature of the body. The House is made of 435 individuals who are members of a party, for the most part, and committees. The coalitions that are expected to develop in theories of distributive benefits, however, are often larger than party and certainly encompass members of multiple committees. As with any legislation, representatives can gain support for their distributive projects by supporting the projects of others. I described above how this can occur through committees. Committees, however, are not the exclusive institution through which representatives can collude. Under the gains-from-trade framework (Weingast 1994; Adler 2002), representatives benefit by trading support on less salient policies for support on more salient policies and can do so outside of party or committee. These two organizing structures can, however, make coalition building much easier, provided either the committee or party is not opposed to the specific representative's particularistic activities. All of these possibilities are considered below.

Measuring Distributive Benefits

A contentious current running through much of the literature on distributive benefits deals simply with how benefits should be measured. Many works go to great lengths to convince the reader of the appropriateness of their particular measure. This dissertation will be no different in that respect. The sections that follow will provide arguments that mirror some of what is discussed in previous research and offer some new ideas about measuring distributive benefits. Even if there is disagreement with my rationale, the list of alternative strategies presented below goes further than much of the previous research, which is hampered by the space requirements of academic journals.

And if this discussion provides no other benefit, it at least clearly presents the criteria relevant to measuring distributive benefits. In reviewing the literature, one immediately notices that there are quite a few measurements for the same concept, all of which highlight the various issues that must be confronted when devising an appropriate measure. These issues can be classified into six categories.

1. Which type or types of benefits to include
2. Initiation period of benefits
3. Unit of measurement
4. Whether to transform the amount
5. Whether a relative amount should be included
6. What relationship the measure should have to the relative amount

Each of these categories, including the relative alternatives that fall under each, is discussed below. A summary of these alternatives is given in Table 2.1 below.

[Table 2.1 here]

Type of Benefits

Arguments were presented above distinguishing distributive benefits, which I have classified as particularistic, from entitlement or redistributive benefits. I further proposed that, in agreement with much of the previous research on distributive benefits, particularistic benefits, due mainly to the nature of their excludability, should be included in a measure of distributive benefits while entitlement programs should not. There are, however, further distinctions that can be made between types of benefits. Bickers and Stein (2000) distinguish between direct payment programs and contingent liabilities. The

first type includes programs that provide grants or other monetary assistance to beneficiaries for specified or unspecified uses. The second type also provides monetary assistance, but contingent liabilities are different in that they are either loans, which need to be repaid, or insurance programs offered by the Federal Government. To illustrate the difference, the example I use most, which should be familiar to academics, is that a grant from the National Science Foundation is a direct payment; a Subsidized Stafford Loan is a contingent liability. The pertinent question is whether to include one, the other, or both in a measure of distributive benefits. The distinction in fact does not receive recognition until Bickers and Stein (2000), thus much of the previous research has included both. Yet, these two types of programs certainly do not have the same physical meaning—and therefore may not have the same political meaning. In Chapter 1, distributive benefits were discussed in terms of money spent by the Federal Government on programs that have political consequences for politicians. Benefits were further defined in this chapter as being politically and geographically excludable. These were referenced as part of the negative view of benefits described in Chapter 1—distributive benefits as pork barrel spending. It is for these reasons that the emphasis will be placed on direct payment programs when deriving a measure of distributive benefits. Loan and insurance programs, as opposed to direct spending, do not carry the same political capital. This is not to say that groups and constituents do not prefer certain liability programs, but spending on these programs does not have the same meaning in a political context. Loans, for example, are made, but are also repaid with interest. Insurance payments are made, but only when a beneficiary suffers a loss. Thus the measure of benefits derived below will only include non-entitlement, direct payment programs.

Initiation of Benefits

The literature has also devoted time to *when* instances of spending occur. The question is whether we should count all distributive spending for a given period or only spending initiated during that period; the distinction is between new benefits, those initiated during the current period, and total benefits, which include spending on "continuing programs," instances of spending initiated in a prior period. The preference in the literature is for new benefits (Stein and Bickers 1994, 1995; Alvarez and Saving 1997b), although some work has included total benefits as a relative amount (see the "Relative Amounts" section below). In order to argue for the use of new benefits, I will instead discuss why total benefits are not appropriate. First, there is no guarantee that the representative was directly responsible (in office) when the continuing benefits were initiated. If the intention is to create a measure that accurately reflects the actions of the representative, then using total benefits could create an imprecise measure. This, however, could be remedied. FAADS, for each entry, lists an initiation date. It could be ascertained for each instance of spending whether the current representative was in office at the initiation date.[10] This line of inquiry, however, does not seem necessary. Thus a second reason for not using total spending, alluded to in Chapter 1, is the time horizon under which a representative can get credit for spending. A possible explanation for the growth of distributive benefits is that constituents and groups get accustomed to the old level of benefits; representatives, therefore, are forced to seek new benefits to keep everyone satisfied (Arnold 1990). Alvarez and Saving (1997b) succinctly state that, because total benefits are the summation of activities of previous incumbents or the same

[10] This, however, would be prohibitively difficult. For each congress, there are several *million* instances spending. Identifying the correct representative for each would take a great deal of time.

incumbent in a different political situation, new benefits should be more related to the representative's current electoral fortunes. Alvarez and Saving (1997b) also empirically find that new benefits exert a significant effect on vote share, while total benefits do not. A measure of distributive benefits, therefore, will take account of benefits initiated during the current period—so called new benefits.

Unit of Measurement

Here, the question is one of awards, as Stein and Bickers (1994a) would label them, or outlays. Awards are instances of spending, or simply the number of beneficiaries in a given district, where outlays refer to the amount of money spent. Again, Alvarez and Saving (1997b) put both of these measures to the test and find that it is outlays that significantly affect vote share. The reason we would expect outlays to be more important comes from the union of rational choice theory and distributive theory. Theories of distributive politics, which are discussed below, emphasize the universal nature of the distribution of awards. Even if there is substantial variation in the outlays, every district receives something. Given that every district receives some benefits, a million dollar award should be more preferable to a thousand dollar award. The awards themselves do carry political significance—the more entities that receive a benefit should positively impact the electoral fortunes of the representative.[11] But one cannot cast aside

[11] There may also be certain questions that require a programmatic measure of distributive benefits. In assessing which factors contribute to the growth of distributive spending, Bickers (1991) suggests that a programmatic measure of benefits is more appropriate. Specifically, looking only at government outlays misses the significance of where government has devoted its attention. Programs, and by extension awards, produce a more accurate evaluation of the growth of distributive benefits over time. The focus of this dissertation, however, is the electoral effects of distributive benefits. As explained in the text, outlays are likely to produce a more effective measure with respect to how voters respond to information on distributive benefits. The appropriateness of awards or outlays, in a methodological context, is based on

the economic logic that more spending is better, or at least has more of an effect, than less spending. Awards may have more significance for individual behavior, especially if that individual is a beneficiary. At the aggregate level, however, the amount of money spent should yield a more politically salient measure than tallying beneficiaries. This, again, is also empirically supported (Alvarez and Saving 1997b). Thus the measure developed below will gauge new outlays, in constant 2000 dollars, on direct payment programs.

Transformation of the Measure

The major alternatives would be to leave a measure of spending as is or to transform the amount in some way, typically by taking the natural log. The argument for taking the log of spending is akin to the traditional economic argument of diminishing marginal returns. More so for spending than for awards, it is likely the case that each additional dollar of spending has less of an impact than the one before it. This distinction has more relevance for distributive benefits as an independent variable, which is the role it will serve in the remainder of this dissertation. If the expectation is that benefits have a decreasing marginal electoral utility, then the best way to measure benefits is as a logged value. Thus the log of new spending on direct payment programs is used to measure distributive benefits.

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whether distributive benefits are the question (the dependent variable) or the answer (an independent variable).

Relative Amount

Should we consider only new spending or new spending in relation to some other amount? Stein and Bickers (1994a, 1995), for example, look at the ratio of new to total awards. Thus their measure of benefits in the current congress is the proportion of total awards to a district that are new. Their final measure is the change in this ratio from the previous congress, which is discussed in the section below, although it highlights two alternatives for a relative measure: total spending (or awards) in the current Congress and new spending in the previous Congress. A very important measurement issue that applies here is how to deal with the fact that benefits have grown over time. Considering a measure of benefits like a time series, there may be unit root behavior in the measure.[12] This problem is exacerbated by the use of total spending as a relative amount. All new spending initiated during *t* that does not finish gets counted in total spending during *t+1*. Examining a temporal change in the ratio of new to total spending could understate the activity level of the representative. Consider the following example. Representative X secures $500 million in new distributive spending during the 100th Congress for a total of $1 billion. All of the new spending was on large, one-shot payments (thus not continuing) and the other $500 million from the total continues to the 101st Congress. During the 101st Congress, Representative X secures an additional $500 million in new spending, keeping total spending at $1 billion. Measuring benefits in relation to the total spent yields an equal ratio for both Congresses: 500/1000 = 0.5. In relation to the temporal change, the measure of benefits is 0; 0.5 – 0.5 = 0. Both cases drastically understate the political significance of securing $500 million in new spending.

[12] Unit root behavior would be indicative of a process or series with memory. Put another way, the amount of benefits in district *i* during Congress *t* is at least partially a function of benefits received in *t-1*.

How then should benefits be measured? One possibility is not to include a relative amount; simply look at the log of new spending at *t*. This alternative also does not adequately address the time series argument. If the amount of benefits has grown over time, then it has to be that new spending is growing as well. Thus without much politics, districts receive new spending. This could also cause problems with using prior new spending as a relative measure, whereas the measure will have a positive bias—new spending at *t* will likely be greater than new spending at *t-1*. A politically relevant alternative is to look at spending in the district in relation to the mean level of spending for the current congress. As an example, on its face, $200 million in new benefits seems like a lot. When we consider that the mean amount for all periods is around $250 million, the figure does not appear extreme. It also escapes the problem of consistent growth of benefits because as new spending increases from congress to congress, the mean level of spending also increases. Given the measure of district benefits, the relative measure employed here will be the log of the mean amount of outlays for all districts during congress *t*. Further arguments supporting the use of the mean as a relative amount are presented below.

Mathematical Relationship to the Relative Amount

In order to complete a measure of distributive benefits, it is necessary to mathematically relate district benefits to the relative amount. The simplest alternative, which is used here, is to look at the difference between district and mean benefits. Returning to arguments supporting the mean as a politically salient relevant amount, the difference between district and mean benefits creates a measure that quantifies deviations

of the district from the mean. More specifically, the difference measures how much better or worse a particular district is doing compared to the average district. Some of the theoretical arguments presented below, especially those of Niou and Ordeshook (1985), emphasize the *share* of benefits a representative is able to secure. Given a fixed amount of money that can be spent, districts will reward representatives who increase their share of the spending. This rationale is also present in Weingast, Shepsle, and Johnsen (1981), whose posit that legislators will accept a smaller share to guarantee receiving benefits at all. Since the difference is between logged amounts, the measure can also be considered a ratio. Below, I demonstrate how the difference of logs is transformed into the log of a ratio. For the purposes of this section, it is sufficient to note that deviations from the mean can also be considered as the ratio of district to mean benefits. A ratio of 1 would represent an average district whereas ratios of greater or less than 1 would signify greater or less than average benefits respectively. A final alternative, popularized by Stein and Bickers (1994a), is to look at the difference of ratios. Again, their measure is the difference in the ratio of new to total awards between congresses. As a mathematical relationship, this is also a viable strategy, but I have chosen not to use either total benefits or lagged values as a relative amount.

Benefits in the District

A final measurement issue to consider, which is not referenced in Table 2.1, is how to aggregate benefits. Until this point, aggregation by congressional district has been assumed. From readers outside of the distributive benefits literature, there may be critiques of looking only at distributive spending within the district. In comments I have

received from other researchers, I generally hear two criticisms. First, it is very unlikely that individuals within a district are knowledgeable about how much money is spent in their districts on distributive benefits (Stein and Bickers 1994a). Related to this, voters are more likely to be aware of spending in a larger aggregation: the state or perhaps even the nation. My defense of using district benefits, as opposed to aggregating by state or the nation, is based in what is called Fenno's paradox (Fenno 1978). In Fenno's paradox, individuals often disapprove of Congress as a whole, but highly approve of their own representative. The same could also apply to preferences for distributive spending. If distributive benefits are to have a real political meaning for representatives, they need to be able to reap the rewards or take the blame for their actions. Rewards and blame can certainly result from an individual's analysis of national politics, but in the case of distributive benefits I find this unlikely. Consider first constituents that would like to receive more benefits, say an improvement to the highway. If they drive outside of their district and find the same highway miles away is in better condition, they might begin to wonder why their area has not received the same reconstruction. To further the example, if the representative from the improved area claims credit for fixing the highway, the citizens of the unimproved area might feel more compelled to act on their dissatisfaction. To flip the example, making it more relevant to Fenno's paradox, consider constituents that prefer less government spending. Even as spending spirals out of control nationally, they support their "maverick" representative who has taken a stand against spending and sought very few benefits for her district. In short, using in-district benefits yields a measure directly related to the activities of the representative that voters from a particular

district have electoral control over. Even if a particular district in unsatisfied with national spending, its constituents cannot take their frustrations out on Congress.

A Measure of Distributive Benefits

Following the discussion above, the measure of distributive benefits used in the following analyses will be deviations in the log of new spending on direct payment programs from the log of the mean amount of new spending on the same programs for a given congress. Formally, the measure is calculated as follows, where "NDP" refers to new spending on direct payment programs:

$$\ln(NDP_{i,t}) - \ln(\overline{NDP_{.t}})$$

This measure is mathematically equivalent to the log of the ratio of new benefits received by district *i* during congress *t* to the average amount of benefits received during congress *t*, as presented below.

$$\ln(NDP_{i,t}) - \ln(\overline{NDP_{.t}}) = \ln\left(\frac{NDP_{i,t}}{\overline{NDP}_{.t}}\right)$$

The measure is initially presented as a difference in logged amounts for the purposes of clarity; positive values are indicative of representatives receiving more than the average at *t* and negative values represent less than average benefits. When interpreting results, however, I will often refer to the log of the ratio of district to mean benefits; the log of the ratio yields an easier interpretation despite the difference-in-logs measure having an advantage with respect to presentation of the concept. The distribution of this measure is presented in Figure 2.1. The measure ranges from a minimum of -6.56 to a maximum of 3.595 with a mean of -1.027. Thus for a given congress, the central tendency is for a

district to receive less than average distributive spending. This is clearly where most districts fall; 77.9% of districts received less than average benefits for their particular time period.

[Figure 2.1 here]

An Empirical Analysis of the Distribution of Benefits

[Figure 2.2 here]

Figure 2.2 presents the Distributive Benefits Model. Broadly, the amount of benefits sought and received by a representative is modeled as a function of three sets of variables: electoral vulnerability (β coefficients), incumbent characteristics (φ coefficients), and district characteristics (δ coefficients). Fixed effects are also included for each congressional term included except the first (the 99th Congress). According to the theoretical literature, incumbents who had a more difficult time being reelected in the previous election should seek more benefits. Likewise, there are other characteristics, described below, that should be associated with higher amounts of benefits being secured by representatives. Finally, some districts may have a higher demand for distributive spending than others (Adler 2002). Representatives from these districts, therefore, should receive more benefits.

Looking first at electoral vulnerability, the measures are taken from the previous election. The use of prior electoral measures necessitates the exclusion of freshmen from the analysis; the presence of an experienced challenger in the last election, for example, has a different meaning for a freshman who, incidentally, would have been the experienced challenger. Thus the data are for districts from the 99th to the 108th

Congresses whose representatives are in at least their second term. The time period mirrors the election years examined in the following chapter, which uses data from the 1986 through 2004 elections. When discussing electoral vulnerability, the data begins with the 1984 election, which elected members of the 99th Congress. There are three measures of electoral vulnerability included here. First is the incumbent's share of the two-party vote from the previous election. Vulnerability would be indicated by a smaller share of the vote thus an increase in vote share is expected to cause a decrease in distributive benefits. Second is the spending gap, measured as the log of challenger spending minus the log of incumbent spending. Increases here signify an increase in challenger spending relative to incumbent spending. As with the dependent variable, the spending gap can also be expressed as the log of the ratio of challenger spending to incumbent spending, which may be a clearer expression of the relativity of the measure. Incumbents faced with relatively high challenger spending are more vulnerable, thus an increase in the spending gap should cause an increase in distributive benefits. Finally, challenger quality, measured using a dummy variable scored 1 for challengers that have held an elective office, should also indicate a vulnerable incumbent and cause an increase in distributive benefits.

The discussion of the institutional features of the House that could impact the distribution of distributive benefits alluded to several characteristics that are presented in Figure 2.2. Most of these characteristics address the power that certain members have giving them the ability to increase their share of distributive spending. Seniority of the representative, for example, should have a strong effect on the amount of benefits received by a district. Every additional term served gives a representative more

familiarity with the rules of the House, a wider network of fellow members to work with, and possibly power gains within the party. Yet the benefits of experience may not be linear. I model the relationship between seniority and distributive benefits as quadratic, reflecting an increasing marginal utility. Between the 99th and 108th Congresses, the mean number of terms served is roughly 5.6 and an examination of the histogram shows a steady decrease in the percentage of members falling under each successive level of seniority. I posit that the relationship should reflect an increasing marginal utility for members surviving to higher levels of seniority; for example, there is more of a benefit moving into one's tenth term than there is moving into one's third. Seniority is measured as the number of terms served, including the current Congress.

Seniority is an all-encompassing factor, whereas more senior members should have more power within the party, within committees, and have more relationships among powerful members. Looking at party specifically, I include three variables. First is the party of the representative, which is discussed below. Second, I include a variable for status within the party. Specifically, "leadership" is a dummy variable scored 1 if the representative is Speaker of the House, Majority or Minority Leader, or Majority or Minority Whip. Finally, under a partisan framework, the representative's standing within the party should impact benefits received. Support for certain distributive programs might be one means for the party to enforce loyalty from among its members. Benefits received are modeled as a function of the representative's party unity score from the previous congress, as compiled by Keith Poole.[13] Members with a high score are more "loyal" to the party and thus should be more likely to receive distributive benefits.

[13] See http://voteview.com.

Two additional incumbent characteristics are included to measure power within committees. "Chair" is a dummy variable signifying a representative that chairs a standing committee in the House or the Permanent Select Committee on Intelligence (PSI) Chairman. Likewise, "RMM," which stands for Ranking Minority Member, identifies members that are the RMM of a standing committee or the PSI. I separate Chairs from RMMs because, if there are effects for committee power, the literature suggests that more power, and thus the ability to secure more benefits, rests with the Chair. The RMM, however, also enjoys a position of power and may bargain with the majority party to receive additional distributive benefits. Committee demand should have play an important role and this is discussed below in terms of district characteristics. In addition to partisan and committee considerations, the representative's own preferences for government spending should affect how much spending she secures. Thus ideology, measured as the first dimension of the DW-Nominate score, which increases with conservatism, is expected to have a negative effect on distributive benefits. Conservative representatives should have preferences for less government spending and ideological consistency would suggest they not seek above average benefits.

The incumbent characteristic left out above, which deserves a separate discussion, is partisanship, which is measured as a dummy variable scored 1 for Republicans. Party is also interacted with the congressional fixed effects allowing for a test between universalistic and majoritarian expectations. If benefits, not whether any are received but how much is received, are distributed universally, there should be little partisan differences. All of the interactions between congress and party should be zero. Under majoritarianism, we expect MWCs to receive benefits. Again, the easiest MWC to create

is on the basis of majority party. Thus the expectation is for the fixed effects to equal zero, the Republican interactions to be negative for the 100th through 103rd Congresses, and positive for the 104th through 108th Congresses.

The last classification of variables is district characteristics. Some districts, because of their composition, will have a higher demand for distributive spending than others. This also leads representatives of those districts to seek membership on committees that allow them to directly address the preferences of constituents (Masters 1961). A representative, for example, of a district that contains a large amount of farms would probably want to be on the Agriculture Committee. Membership here would afford the representative the ability to support programs administered through the Department of Agriculture, which would be important to the citizens of that district. Adler (2002) empirically examines district demand for benefits, but analyzes benefits separately by congressional committees. The findings are as expected; a higher percentage of individuals living in rural farming areas, for example, leads to that district receiving more Agriculture benefits. The difficulty arises in studying benefits generally. Having a larger percentage of veterans in a district should cause that district to receive more benefits from Veterans' Affairs. Overall, however, which district should receive more: the one with a high rural population or the one with a high veteran population? To answer this question, I looked at the amount of total distributive spending (all non-entitlement, direct payment spending—new and continuing) in each Congress from the 98th to the 108th for each federal agency administering programs listed in the Catalog of Federal Domestic Assistance. By examining which agencies tend to distribute more benefits, it should be easier to identify which district characteristics indicate a higher

demand for benefits. I then focused on those agencies that account for at least 1% of spending over this period; there were eight. Table 2.2 lists those agencies ranked from highest to lowest in terms of the average amount spending in a congressional term over this period and the share of total spending accounted for by the agency.

[Table 2.2 and Figure 2.3 here]

The Federal Emergency Management Administration (FEMA) topped the list, accounting for 51.9% of distributive spending over this period. At first glance, this large amount of spending by an agency designed to assist in emergencies might be cause for alarm. Emergency management is not what is typically thought of as traditional distributive or pork barrel spending. The example of the Airport Improvement Program, however, should show us that names are not as descriptive as they possibly should be. One important note about programs administered through FEMA is that, as an independent agency distributing funding, FEMA no longer exists. All of the existing FEMA programs were rolled into the Department of Homeland Security in 2003. Retuning to the FEMA programs themselves, the bulk of FEMA's programs address training and preparedness on the part of states and localities. For example, there are programs to fund students of the National Fire Academy. While the program benefits firefighters nationally, their stipends are being spent in Emmitsburg, Maryland, while they take courses. As another example, there are several programs designed to help areas prepare for specific types of disasters, like earthquakes. These grants can be used to improve existing structures and pay for research into methods of mitigating the severity of earthquakes when they occur. While the purpose is "noble" as far a government

spending goes, these programs still represent spending directed to specific geographies—the heart of what makes a government program distributive.

FEMA is followed by the Department of Housing and Urban Development, continuing down to the Department of Labor, which accounted for 1.1% of total spending. Total spending by congress is depicted in Figure 2.3. District characteristics that indicate demand for the services of these agencies should cause an increase in distributive spending in those districts. The following is a list of the district characteristics included in the analysis, most of which are used by Adler (2002) and are given in terms of percent of district population. The parenthetical references list the expected effect (positive or negative) on distributive benefits and, for positive effects, the agency that matches up with the district characteristic. In general, negative effects are expected for characteristics that do not easily comport with the programmatic focus of one of the top-eight agencies.

1. % Senior Citizens (negative)
2. % Black (positive; HUD)
3. % Enrolled in Public School—K through 12 (positive; Education / HHS)
4. % Working on Farms (positive; Agriculture)
5. % Working in Financial Services (positive; SBA)
6. % Foreign Born (negative)
7. % Government Employees—all levels (positive; several)[14]
8. % Military (negative)

[14] The percentage of government employees in a district is less a cause of increased funding than it is a correlate. Many distributive programs rely on local bureaucratic structures for administrative purposes; thus having a higher percentage of government employees could be indicative of areas that receive more federal money.

9. % Living in Rural / Farm Areas (positive; Agriculture / Transportation)
10. % Living in Urban Areas (positive; HUD / HHS)
11. % Unemployed (positive; Labor)

In addition to the population statistics, I also include the population density of the district, measured as the number of residents (in thousands) per square mile. I expect district density to have a positive effect on distributive benefits, primarily due to funding from the Department of Health and Human Services. More densely populated areas are more likely to require the types of assistance offered by HHS. Finally, I include a measure of district preferences: the proportion of the two-party vote received by the Democratic presidential nominee in the most recent election. More support for the Democratic candidate should be indicative of a more liberal electorate (Erikson and Wright 1980), which should in turn indicate preferences for increased government spending. All of the expectations discussed above are presented in Table 2.3.

[Table 2.3 here]

Results

[Tables 2.4a and 2.4b here]

Tables 2.4a and 2.4b, collectively referred to as Table 2.4, present the regression results for distributive benefits. In addition to coefficients and standard errors, the table also provides the percent change in the dependent variable caused by a one unit change in the given independent variable. These interpretations are discussed in footnotes 13 and 14 below. First, there are mixed results for the vulnerability hypotheses. In support of the theory that vulnerable representatives seek more benefits, there is a strong, positive

effect for the spending gap. An increase of 1% in the ratio of challenger to incumbent spending causes a 0.045% increase in the ratio of benefits received by the district to the mean of benefits for the Congress.[15] Electoral performance, however, works contrary to expectations. A one point increase in vote share causes distributive benefits to increase by 0.5%.[16] This result in particular is important because it supports the view that more successful incumbents feel freer, or possibly more compelled, to seek distributive benefits. This explanation could lend itself to a negative view of distributive politics, a view that would focus on the pork barrel. Representatives with a larger electoral cushion feel more able to pursue pork for their districts. Additionally, it may in fact be the case that running better leads to a pork addiction. If more distributive benefits helped reelect me this year, then I need to at least support those programs just to keep up. Thus another electoral explanation for the growth of distributive benefits is that, beyond simply being preferred by groups and constituents, these actors become accustomed to the level of benefits in their districts. Representatives, therefore, need to continue securing new benefits to outpace the expanding tolerance of the electorate. Lastly, the presence of an experienced challenger in the previous election does not have a significant effect on the distribution of benefits; representatives appear more concerned with the spending ability of their challengers than strictly with their level of political expertise.

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[15] This interpretation comes from the specifications of both the spending gap and distributive benefits. Both variables are measured as differences in logged values: $\ln(a) - \ln(b)$. As mentioned in the text, an equivalent specification is: $\ln(a/b)$. Thus the relevant portion of the Distributive Benefits model can be written as follows:

$$\ln\left(\frac{NDP_{i,t}}{\overline{NDP}_t}\right) = \beta \cdot \ln\left(\frac{Chal.Spend_{i,t}}{Inc.Spend_{i,t}}\right)$$

While differences in logs give rise to a more appealing presentation and discussion, the log of the ratio lends itself to an easier interpretation. In this specification, β is interpreted as the percent change in y, distributive benefits, caused by a 1% increase in x, the ratio of challenger to incumbent spending.

[16] Unlike the above illustration, x in this case is in level form. For these interpretations, β gives the relative change in y for an absolute change in x. Thus an increase of one unit in x causes a (100) β percentage change in y.

Turning to characteristics of the incumbent, the effects of seniority are largely supported by the results. Although the direct effect of seniority is significantly negative, Figure 2.4 shows support for the hypothesis of increasing marginal effects. Each additional congressional term, starting from the second, brings with it a smaller share of benefits until a representative reaches her eighth term. This could, in fact, be support for the vulnerability expectation; representatives, with each successive term are more secure in their electoral position and thus less needy of distributive benefits. After the eighth term, however, representatives find an increasing share of benefits with each successive term. This is surely indicative of what Adler (2002) describes as the knowledge of procedures and relationship-building commensurate with seniority. An additional explanation for the seniority effects observed here, consistent with the expectations of both Adler (2002) and me, is that very senior representatives have more political debts to pay off. Adler describes this in terms of reciprocity among members, but senior representatives can also build political debts from interest groups. It leads that increasing seniority brings with it increasing pressure to secure more benefits.

[Figure 2.4 here]

The so-called power characteristics do not factor into the distribution of benefits as expected. There is little support for the idea presented above that if parties or committees are the primary vehicle of coalition building, the respective leaders of those institutions would benefit more than others. While committee chairs and other powerful committee members may have an advantage in securing *specific* types of spending, being a committee chair or the ranking minority member of a committee does not grant a representative more or less than average benefits. In addition, being a party leader in the

House leads to a representative receiving 47.357% less distributive spending. There is, however, some support for a party structure to the distribution of benefits. Ideology does not have a significant effect on benefits, but party unity in the previous congress does. An increase of one point in a representative's party unity score from the prior congress, suggestive of stronger party voting, increases the amount of benefits received by her district by 0.257%.

With respect to district demand, most of the expectations discussed above were met, lending support to district demand hypotheses and the view of committees as organizing principles. Having a large population of farm employees, those employed in financial services, government employees, individuals living in rural farming areas, and unemployed individuals all increase the amount of distributive benefits received by the district. Likewise, a large percentage of senior citizens, foreign born residents, and military personnel decrease the amount of benefits received by a district. Percent black, percent urban, and population density did not have a significant effect on distributive benefits. And counter to expectations, an increase in the percentage of public school students causes a decrease in distributive benefits; a one percent increase in students leads to a 9.3% decrease in the ratio of district to mean benefits. Finally, there is strong support for ideological preferences affecting benefits. A one point increase in Democratic presidential candidate vote share causes a 1.4% increase in distributive benefits. Recall that vote share is measured as a proportion (ranging from 0 to 1). Vote share as a percentage would yield a coefficient equal to 0.014; hence the 1.4% increase.

Alternative Specifications for Distributive Benefits

In addition to the model presented in Table 2.4, I estimated the model with different specifications of distributive benefits. The measurement section above discusses several dimensions on which measures of benefits can vary. I presented several arguments for the specification ultimately used in the empirical analyses. Yet, this is not the only plausible measure of distributive benefits. Most of the alternatives that were discussed can be eliminated logically. For example, regarding whether new or total benefits should be used, the argument for using new benefits relies on accepting the proposition that current incumbents should not be credited with spending they may not have enacted. Other alternatives, however, are less defensible on logical grounds. Seven alternative measures were used in the distribution model and the differences between the results are discussed below.[17]

First, the measures, including the specification presented above, can be placed in two categories: measures that employ outlays and those that use awards. While I have made economic arguments for the use of outlays, awards have held a prominent place in the literature and should be considered as an alternative. For outlays and awards, I constructed four alterative measures. The measures are discussed in terms of real outlays, but one need only replace the word "spending" with "awards" to see the construction of the awards measures. First is the specification that was ultimately decided upon, the difference of the log of new, direct payment spending and the log of the House mean of the same spending. Second, since it could reasonably be argued that a relative measure is not necessary, I included simply the log of new, direct payment spending. Third, I used a variation of the measure popularized by Stein and Bickers

[17] Full results are available upon request.

(1994a); specifically, the difference between the ratio of new to total direct payment spending at *t* and the ratio of new to total direct payment spending at *t-1*. Finally, it may be the case that it is indeed changes and not differences from the mean that are important. Thus I measured benefits as the difference between the log of new, direct payment spending at *t* and the log of new, direct payment spending at *t-1*.

The major differences between the results of the eight models occur because of either the use of awards as the unit of measurement or the use of previous spending as a relative amount. Using awards instead of outlays primarily understates the partisan differences that will be discussed in the following section. In the first specification, the one that is presented in the previous sections, replacing outlays with awards does not drastically change the effects of the previous electoral variables or the district characteristics. The only major difference is that Republicans do not seem to get fewer awards than Democrats. They do, however, receive less spending—thus Democrats appear more successful at obtaining larger projects.

Using previous spending or awards as a relative measure, which is done in the Stein and Bickers (1994a) specification and the last specification, creates a measure that the distribution model cannot explain. The results of these final four models are remarkable only for the relative mediocrity of their performance. The most reasonable explanation for this is that the dependent variables are now measured as a first difference, while the independent variables are kept in level form. If measured as changes, I expect that the results would be similar to those for the first four in which the use of outlays over awards produces the most meaningful distinctions.

Partisan Effects on the Distribution of Benefits

[Table 2.5 here]

Despite strong support for district composition and committee organization, most surprising of the results are the partisan differences in the distribution of benefits, which do not conform to any of the theories discussed above. Recall that under universalism we would expect no significant differences between Democrats and Republicans. Under majoritarianism and blame avoidance, the expectation is for the majority party to secure more spending. Thus from the 99th to the 103rd Congresses, we would see Republicans receiving significantly fewer benefits and from the 103rd to the 108th, significantly more. As Table 2.5 demonstrates, Republicans receive significantly fewer benefits *after* they become the majority party. This possibility was mentioned in relation to Bickers and Stein (2000), which found that the Republican Congress significantly decreased spending on direct payment programs. Even if spending is decreased overall, we still might expect Republicans to keep a larger share of the smaller pie; this is not empirically the case. The results may in fact be support for the strength of parties over this period. The leadership of the Republican Party, which emphasized limiting government as part of its platform in 1994, appears to have been able to limit the amount of spending among its members. This may also have contributed to the negative finding for party leadership. Cell entries in Table 2.5 are in terms of percent changes in the dependent variable and based on the significant coefficients reported in Tables 2.4a and 2.4b. For a given congress, the amount of benefits received by Republicans is equal to the sum of the intercept, the congress fixed effect, and the interaction between the fixed effect and the Republican

dummy.[18] For Democrats, it is simply the sum of the intercept and fixed effect. The final column of Table 2.5 shows the difference between average members from each party. Before Republicans take the majority in the 104th Congress, there are no significant differences. During and after the 104th Congress, Republicans receive a smaller and smaller share of distributive benefits—starting with 35.1% fewer benefits than Democrats during the 104th growing to 63.6% fewer benefits during the 108th.

The obvious question is why Republicans did not capitalize on their majority status. If, as the literature assumes, distributive spending is electorally beneficial for representatives, why not exploit a natural MWC and hamper the ability of Democratic incumbents to increase their electoral advantage? Relying only on the existing theoretical literature leaves us wanting for an explanation. One possibility is that representatives are forming MWCs outside of partisanship, perhaps in committee arrangements. Thus we would not observe a strict Republican advantage. If this were the case, however, we would not observe a Republican disadvantage and the outcome would appear more universal. Instead, the majority party is sacrificing a viable source of support from among groups and constituents. I propose that the reason for this is more fundamental than simple electoral politics and goes to the beliefs of the core constituents of the parties. I argue that Republicans are right to work to limit the distributive benefits they receive because their support base expects them to. Republicans who engage too often in distributive spending will receive some of the benefits that distributive politics bring—there are always programs that influential groups and constituents favor. Over-spending, however, opens Republicans especially to charges of wasteful spending, which may resonate strongly with a conservative voting public. The issue of heterogeneous opinions

[18] The effect of the Republican dummy is not included because it is not statistically significant.

on government spending is often ignored in the distributive benefits literature. As stated above, the literature proceeds on the assumption that voters prefer more to less, without considering the viability of this assumption. Republicans may be right to limit their share of the pie because they do not have the same electoral incentives to pursue further spending. And if Senator McCain is right, stepping outside of these bounds is what cost Republicans the House and Senate in 2006. The next chapter will focus on the electoral consequences of distributive spending. The direct and indirect effects for Republicans and Democrats will be examined clarifying Republican reluctance to dip into the pork barrel. The results will also further highlight the need to reevaluate the assumption that all voters prefer more spending in their districts.

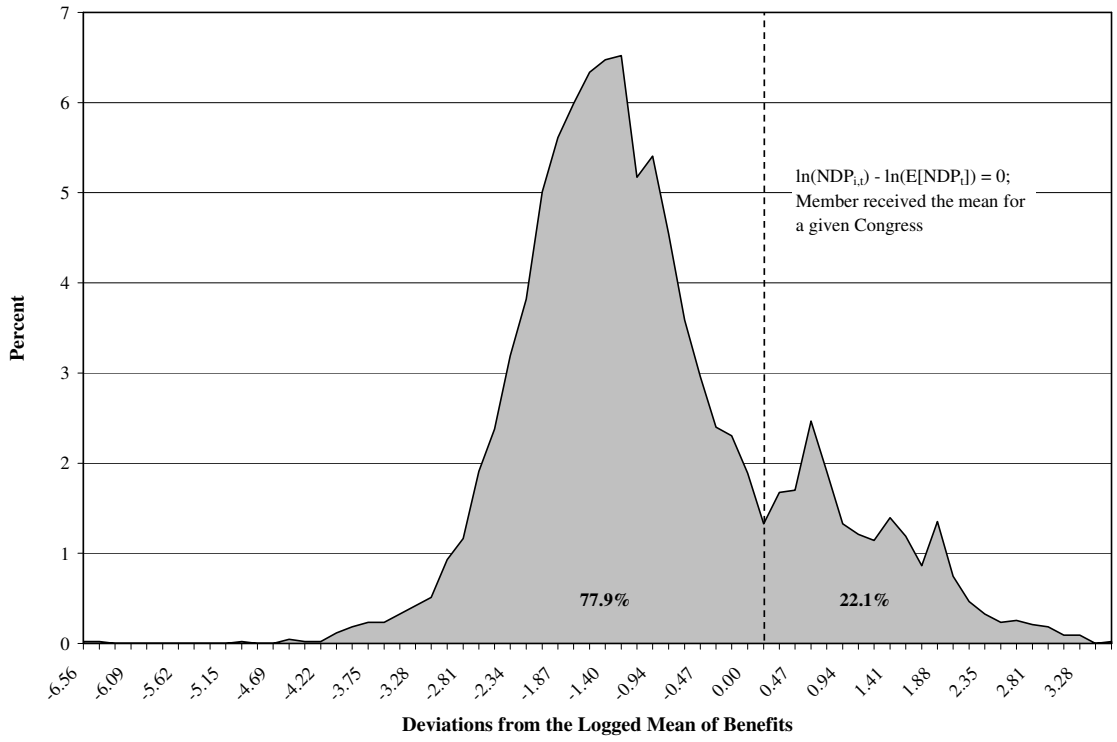

Figure 2.1
The Distribution of Distributive Benefits

Note: This distribution is for the measure of distributive benefits used in the following analyses: the difference between the log of benefits received by district *i* in congress *t* and the log of the mean amount of benefits received in congress *t*. The dashed line represents the point at which a member receives the mean amount of benefits for a given congress. The percentages given within in the area of the distribution are the percentages of all members receiving less than the mean amount of benefits and more than the mean respectively.

Figure 2.2
The Distributive Benefits Model

$$[\ln(NDP_{i,t}) - \ln(\overline{NDP_t})] = \alpha_0 + \beta_1 \, Vote\ Share_{i,t-1} + \beta_2 \, Spending\ Gap_{i,t-1} + \beta_3 \, Exp.\ Chal._{i,t-1}$$

$$+ \varphi_1 \, Terms\ Served_{i,t} + \varphi_2 \, Terms\ Served^{\,2}{}_{i,t} + \varphi_3 \, Republican_{i,t} + \varphi_4 \, Leader_{i,t}$$

$$+ \varphi_5 \, Party\ Unity_{i,t-1} + \varphi_6 \, Chair_{i,t} + \varphi_7 \, RMM_{i,t} + \varphi_8 \, Ideology_{i,t}$$

$$+ \delta_1 \, Over\ 65_{i,t} + \delta_2 \, Black_{i,t} + \delta_3 \, School_{i,t} + \delta_4 \, Farm_{i,t} + \delta_5 \, Financial_{i,t} + \delta_6 \, Foreign_{i,t}$$

$$+ \delta_7 \, Government_{i,t} + \delta_8 \, Military_{i,t} + \delta_9 \, Rural_{i,t} + \delta_{10} \, Urban_{i,t} + \delta_{11} \, Unemployed_{i,t}$$

$$+ \delta_{12} \, Population_{i,t} + \delta_{13} \, Dem.\ Presidential\ Vote_{i,t}$$

$$+ \sum_{k=1}^{9} \alpha_k \, Congress_t + \sum_{k=10}^{18} \alpha_k \, (Congress_t \times Republican_{i,t}) + u_{i,t}$$

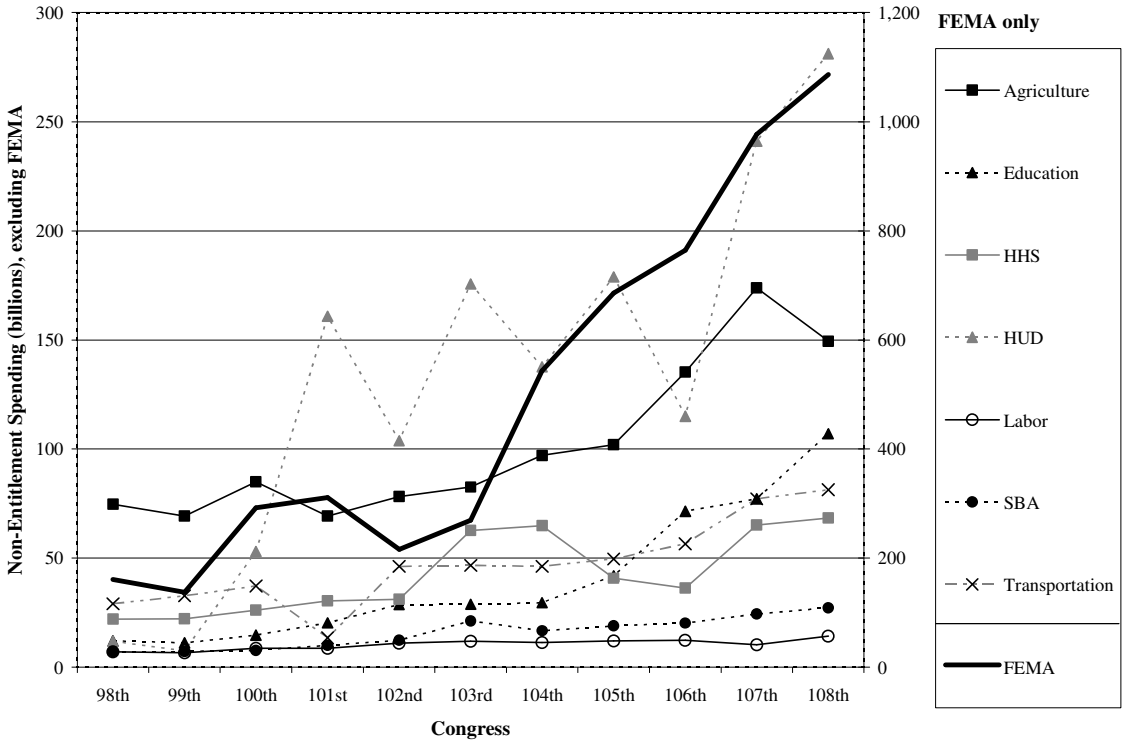

Figure 2.3
Distributive Spending by Selected Federal Agencies

Note: The selection of agencies to include here is determined by the share of total spending on non-entitlement programs made by each agency. Agencies included here spent at least 1% of the total spending from the 98th to the 108th Congresses (see Table 2.2). Note that the Federal Emergency Management Agency is plotted against the right vertical axis.

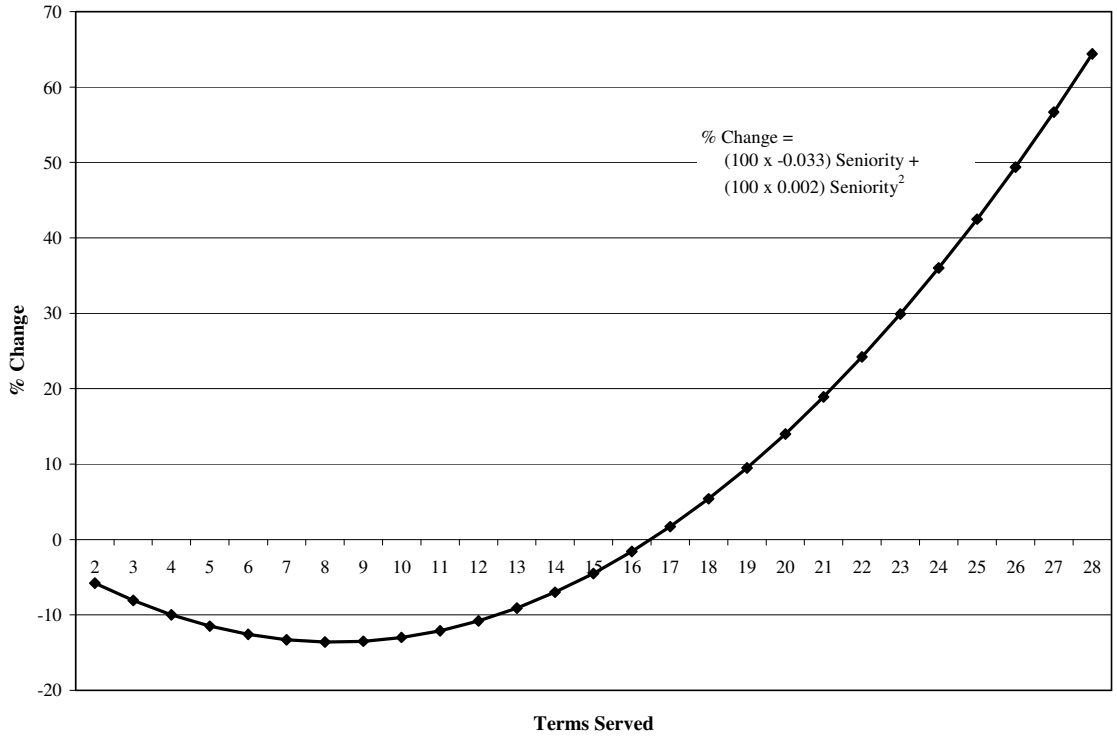

Figure 2.4
The Effects of Seniority on Distributive Benefits

Note: The percent changes reported above are the percent differences from the mean of the House for each level of seniority. A member in her second term, for example, receives 5.8% less than the average member. These figures are calculated only for changes in seniority, holding all other effects at zero including the constant. In this way, seniority can be examined in terms of differences from the average *member*, not the mean of the House.

Table 2.1
Measurement Strategies for Distributive Benefits

Measurement Issue	***Potential Solutions***
Type of Benefits	**1. Direct Payment Programs**
	2. Entitlement Programs
	3. Contingent Liabilities
Initiation of Benefits	**1. New: Initiated During Current Congress**
	2. Continuing: Initiated During a Prior Congress
	3. Total: New + Continuing
Unit of Measurement	**1. Outlays: Amount of Money Spent**
	2. Programs: Number of Beneficiaries
Transformation	**1. Logged Amounts**
	2. Raw Amounts (no transformation)
Relative Amount	**1. Mean of all *i* at *t***
	2. Total Spending in *i* at *t*
	3. Total *new* spending at *t*
	4. New spending in *i* at *t-1*
	5. None (look only at new spending in *i* at *t*)
Mathematical Relationship	**1. Differences**
to Relative Amount	**2. Ratios**
	3. Differences of Ratios

Note: Each of the measurement issues mirrors the discussion of that issue in the text. The bold entries are the solutions deemed most appropriate for the following analyses. In the final issue area, both differences and ratios are bold because the final measure of distributive benefits can be expressed equivalently as a difference or a ratio.

Table 2.2
Largest Distributive Federal Agencies

Federal Agency (Abbreviation)	*Average Spending (billions)*	*Percent of Total (98^{th} to 108^{th})*
Federal Emergency Management (FEMA)	$495.1	51.9%
Housing & Urban Development (HUD)	133.3	14.0
Dept. of Agriculture (Agriculture)	101.5	10.6
Dept. of Transportation (Transportation)	46.9	4.9
Health & Human Services (HHS)	42.7	4.5
Dept. of Education (Education)	40.3	4.2
Small Business Association (SBA)	15.8	1.7
Dept. of Labor (Labor)	10.4	1.1

Note: These are the top eight federal agencies with respect to total, non-entitlement distributive spending from the 98^{th} to the 108^{th} Congresses. The second column lists the average amount of programmatic spending done by the agency over this period. The third column lists the share of total distributive spending accounted for by the agency over this period. The eight agencies listed above were the only ones to account for at least 1% of total distributive spending.

Table 2.3
Summary of Distribution of Benefits Hypotheses

Vulnerability	
Incumbent Share of the Two-Party Vote in the Previous Election	$\beta_1 < 0$
Spending Gap in the Previous Election	$\beta_2 > 0$
Challenger Experience in the Previous Election	$\beta_3 > 0$
Incumbent Characteristics	
Partisan Characteristics:	
Seniority	$\varphi_1 > 0$
	$\varphi_2 > 0$
Party (Republican): Universalism[1]	$\varphi_3 = 0$
Party (Republican): Majoritarian[1]	$\varphi_3 < 0$
Party Leader	$\varphi_4 > 0$
Party Unity	$\varphi_5 > 0$
Committee Characteristics:	
Committee Chairman	$\varphi_6 > 0$
Committee Ranking Minority Member	$\varphi_7 > 0$
Legislator Preferences:	
Ideology (using 1st Dimension of DW-Nominate)	$\varphi_8 < 0$
District Characteristics	
% Senior Citizens	$\delta_1 < 0$
% Black	$\delta_2 > 0$
% Enrolled in Public School (K-12)	$\delta_3 > 0$
% Working on Farms	$\delta_4 > 0$
% Working in Financial Services	$\delta_5 > 0$
% Foreign Born	$\delta_6 < 0$
% Government Employees (All Levels)	$\delta_7 > 0$
% Military	$\delta_8 < 0$
% Living in Rural / Farm Areas	$\delta_9 > 0$
% Living in Urban Areas	$\delta_{10} > 0$
% Unemployed	$\delta_{11} > 0$
Population per Square Mile	$\delta_{12} > 0$
Proportion Voting for the Democratic Presidential Candidate	$\delta_{13} > 0$
Congress & Partisan Effects	
Universalism:	
100th through the 108th Congress; for $0 < k < 10$	$\alpha_k = 0$
Republicans from the 100th through the 108th; for $k > 9$	$\alpha_k = 0$
Majoritarian:	
100th Congress through the 108th Congress; for $0 < k < 10$	$\alpha_k = 0$
Republicans from the 100th through the 103rd; for $k = 10, \ldots, 13$	$\alpha_k < 0$
Republicans from the 104th through the 108th; for $k > 13$	$\alpha_k > 0$

[1] Given the interactions between the congress dummies and the Republican dummy, the coefficient for Republican represents the effect of being a Republican in the 99th Congress. Under universalism, the expectation is that there are no significant party differences. For majoritarian theories, the expectation is negative because Republicans are expected to receive less than the average amount of benefits while they are in the minority.

Table 2.4a
Regression Results for Deviations from the Mean of Distributive Benefits

Variables	*Coef.*	*Robust SE*	*% Change In DV*
Previous Electoral Variables			
Inc. Share of 2-Party Vote (t-1)	0.005*	0.002	0.548
Spending Gap (t-1)	0.045*	0.018	4.463
Experienced Challenger (t-1)	-0.071	0.054	-7.089
Incumbent Characteristics			
Seniority	-0.033*	0.015	-3.317
Seniority Squared	0.002*	0.001	0.178
Republican	0.004	0.123	0.367
Party Leader	-0.474*	0.111	-47.357
Party Unity Score (t-1)	0.003#	0.002	0.257
Chair	-0.007	0.085	-0.688
Ranking Minority Member	-0.035	0.097	-3.523
DW-Nominate (1st Dimension)	0.101	0.133	10.097
District Characteristics			
% Over Age 64	-0.023*	0.008	-2.341
% Black	-0.002	0.002	-0.193
% Enrolled in K-12	-0.093*	0.013	-9.322
% Working on Farm	0.081*	0.031	8.144
% Working in Financial Services	0.104*	0.034	10.372
% Foreign Born	-0.012*	0.004	-1.193
% Government Employees	0.284*	0.016	28.446
% in Military	-0.067*	0.013	-6.692
% Living in Rural / Farm Areas	0.029*	0.012	2.938
% Living in Urban Areas	0.001	0.001	0.148
% Unemployed	0.245*	0.028	24.507
Population per Sq. Mile (in 000's)	-0.006	0.006	-0.581
Proportion Voting for the Democrat Presidential Candidate	1.417*	0.292	141.713
Intercept	-3.239*	0.475	-323.906
Model Statistics			
Number of Observations	3,191		
F(42, 3148)	26.120		
Prob. > F	0.000		
R^2	0.320		

* $p < 0.05$, # $p < 0.1$ (two-tailed)
Note: Congress fixed effects and the interactions of congress effects with party follow in Table 2.4b.

Table 2.4b
Results Continued: Congress and Partisan Effects

Variables	***Coef.***	***Robust SE***	***% Change In DV***
Congress Effects (99th Excluded)			
100th	-0.240*	0.105	-24.020
101st	0.251*	0.096	25.052
102nd	0.059	0.111	5.876
103rd	-0.082	0.140	-8.158
104th	-0.011	0.140	-1.108
105th	-0.098	0.143	-9.830
106th	0.263*	0.138	26.293
107th	0.405*	0.136	40.511
108th	0.619*	0.138	61.880
Interactions with Party			
100th x Republican	0.116	0.163	11.595
101st x Republican	0.083	0.145	8.278
102nd x Republican	-0.016	0.159	-1.575
103rd x Republican	-0.258	0.164	-25.833
104th x Republican	-0.351*	0.166	-35.126
105th x Republican	-0.394*	0.162	-39.449
106th x Republican	-0.376*	0.170	-37.583
107th x Republican	-0.619*	0.171	-61.872
108th x Republican	-0.636*	0.174	-63.568

* $p < 0.05$, # $p < 0.1$ (two-tailed)

Table 2.5
Partisan Effects on the Distribution of Benefits

Congress	*Republicans*	*Democrats*	*Difference (R-D)*
99th	-323.9%	-323.9%	**0.0%**
100th	-347.9	-347.9	**0.0**
101st	-298.9	-298.9	**0.0**
102nd	-323.9	-323.9	**0.0**
103rd	-323.9	-323.9	**0.0**
104th	-359.0	-323.9	**-35.1**
105th	-363.4	-323.9	**-39.4**
106th	-335.2	-297.6	**-37.6**
107th	-345.3	-283.4	**-61.9**
108th	-325.6	-262.0	**-63.6**

Note: Cell entries are percent changes in the dependent variable as described in the text. For the 99th Congress, for example, the average Republican received 323.9% less than the mean of the House. Percent changes are based on the significant coefficients for year effects, year / Republican interactions, and the coefficient for Republicans.

Chapter 3
Distributive Benefits and Election Outcomes

As the title of this chapter suggests, the purpose of the following analyses is to determine what effects distributive benefits have on the *outcomes* of elections. The intention here parallels much of the previous work on the electoral effects of distributive benefits. The previous chapter examined the causes of increased spending on distributive benefits. Now, I turn my attention to what affect this spending has on the vote share received by the incumbent. This question, however, is not as straightforward as it seems and previous work (e.g. Levitt and Snyder 1997) has attempted to solve the various methodological problems that arise in a district level analysis of distributive benefits.

Some of these problems are measurement issues, issues I have already addressed. Once a measure of distributive benefits is decided upon, the larger problem of endogeneity between benefits and the quality or strength of the eventual challenger must be addressed. This problem results from the fact that distributive benefits can have direct and indirect effects, as described in Chapter 1. Previous research has found that there is a relationship between distributive benefits and challenger quality (Bickers and Stein 1996). Levitt and Snyder (1997) provide an extensive discussion of the problem with benefits and challenger quality. Briefly, they suggest that measures of quality are too imprecise to reflect the danger posed to an incumbent by a high-quality challenger. The problem is characterized in terms of omitted variable bias. Distributive benefits are correlated with challenger quality. The standard measure of quality inadequately measures the concept where distributive benefits are concerned. The end-result is that

estimates for the effect of distributive benefits are biased. The solutions under this framework would be to either better measure "quality," which when included would ameliorate the omitted variable bias, or instrument for distributive benefits—find a variable or variables highly correlated with distributive benefits in the district that is uncorrelated with challenger quality. Levitt and Snyder (1997) follow the second route and use distributive benefits in all other districts in the state as an instrument for in-district benefits.

In this chapter, I follow the first. I begin by investigating the claim that the standard measure of challenger quality, electoral experience, inadequately measures characteristics of the challenger important to the study of the deterrent capabilities of distributive benefits. Given this inadequacy, I follow a different measurement strategy. I move away from the strict examination of candidate-centered measures of quality and incorporate measures of resources and support for the challenger drawn from various aspects of campaign finance. These measures are combined into an index measuring the strength of the challenging campaign, which will be demonstrated as more appropriate to examining the indirect electoral effects of distributive benefits. The heart of the chapter lies in the full district level analysis in which I fully investigate the direct and indirect effects. I conclude the chapter discussing the relevance of these results and argue for the necessity of an individual level analysis.

Previous Work on Electoral Effects

First, allow me to take a step back and examine some of the literature in better detail. The question of "why" with respect to distributive benefits is an old one and one

that has produced a long, illustrious line of research. Most of the work, discussed in Chapter 2, has been theoretical and attempts to understand and explain the distribution of distributive benefits. While the rationales for the existence and persistence of distributive benefits are numerous, many of the nuanced theories boil down to 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 only explain a few programs. The electoral goal is pleasing in that appeals to common sense—voters should prefer more to less—and leads to the observed result of programmatic growth if we assume the rationality of representatives. This logic also yields testable expectations. An increase in distributive benefits should cause an increase in the electoral fortunes of incumbents.

The empirical work on the electoral effects of benefits, however, has produced mixed results. Some studies have found strong, positive relationships between distributive spending and the vote. Alvarez and Saving (1997b) find that the amount of new outlays 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 in this analysis would be particularistic, distributive spending, and especially grant programs, significantly increased the Democratic percentage of the two-party congressional vote. Sellers (1997), also looking at 1984 to 1990, finds significance in some years, but not others at the district level and he finds significance at the individual level for the 1988 election once pork is interacted with the fiscal ideology of the incumbent—suggesting that fiscally conservative incumbents who engage in pork

barreling suffer electorally. As an indirect effect, Bickers and Stein (1996) find that increasing awards significantly discourages the emergence of quality challengers in both the primary and general elections in 1990. Work prior to this has demonstrated only a modest effect of distributive benefits. Stein and Bickers (1994a, 1995) find that the change in the proportion of new to total awards between the 99th and 100th Congresses has only a marginally significant effect on the likelihood an individual voted for their House incumbent in the 1988 election. This is also true of thermometer ratings for the incumbent in 1988 (Stein and Bickers 1994a, 1995). The effect is nonexistent 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 in 1976, 1978, or 1980.

Looking at these studies, and given the breadth of the theoretical literature, one might be perplexed as to the range of finding on the electoral effects of distributive benefits. Surely incumbents who devote time and resources to securing benefits will work to translate these benefits into electoral gain. Why then do we observe strong effects in some analyses and weak or null effects in others? I propose two answers to this question which outline the chapter to follow.

First, the empirical literature has not sufficiently examined the indirect effects of distributive benefits. If distributive benefits are preferred by constituents and interest groups, they should improve the electoral prospects of the incumbent directly and through decreased support for the challenger, relative to the incumbent. The ability of incumbents to deter experienced challengers is investigated in the next section. I then develop a new measure of challenger "quality"—called challenging campaign strength—

and assess the ability of the incumbent to use distributive benefits to weaken challenging campaigns.

Second, much of the literature analyzing electoral effects is limited in its scope with respect to time periods. Quite a few of the studies look only at one election. Those that perform multi-election analyses exclusively examine time periods in which Democrats held the majority. Thus findings of party differences are explained using majoritarian arguments and miss the fundamental differences, especially in the indirect effects, between Republicans and Democrats. Weak and even contradictory effects for Republicans, if not appropriately separated from the effects for Democrats, can lead to coefficients that are modest or insignificant. Thus the final section of this chapter analyzes House elections from 1986 to 2004 taking account of the indirect effects of distributive benefits and the inherent differences between Republicans and Democrats.

Indirect Effects: Deterrence of Experienced Challengers

What does incumbent deterrence actually mean? At a basic level, one of the advantages conveyed on incumbents is their ability to behave in a manner, while in office, that makes them more attractive to the electorate. Action in office carries with it two potential benefits. First, incumbents can, by making themselves more attractive to the electorate, win more votes—this is the direct electoral benefit. There is also an indirect benefit; by becoming a more attractive, and therefore stronger, candidate, incumbents can prevent the emergence of challengers who would mount strong campaigns. In studying this indirect benefit, much of the literature has focused on the candidates, seeking to measure factors such as the "quality" of the candidates, opting

more often than not for a measure of the challenger's previous electoral experience. When it comes to certain incumbent actions, however, there has been mixed success in establishing these indirect benefits.

On general incumbent performance, incumbents thought to have performed well in office depress the electoral prospects of other potential candidates (Stone and Maisel 2003; Stone, Maisel, and Maestas 2004). This can lead to higher quality challengers choosing not to run (Jacobson and Kernell 1981). In virtually all studies of deterrence, the prior electoral success of the incumbent also factors into the strategic decisions of quality challengers. Thus, all of the activity related factors that benefit incumbents in elections, like district work (Fenno 1978) or issue positioning (Ansolabehere, Snyder, and Stewart 2001), should also show a deterrent effect. Bond, Covington, and Fleisher (1985), however, find that incumbent behavior has no effect on the emergence of an electorally experienced challenger. This and other works (e.g. Basinger and Ensley N.d.) have argued that potential candidates pay more attention to factors like partisan conditions in the district and nation. Turning to the financial activities of the incumbent, there have also been mixed results when studying the deterrent effect of the early raising of campaign finds, often called a "war chest." Some studies have found a deterrent effect (Hersch and McDougall 1994; Box-Steffensmeier 1996), while others have not (Goodliffe 2001).

Where distributive benefits are concerned, we can reasonably suspect that benefits will have the same deterrent effects that other incumbent activities do, or perhaps have even stronger effects. More so than issue positioning or simple district contact, distributive spending provides tangible benefits for which the incumbent can claim credit.

Levitt and Snyder (1997) recognize the potential relationship between benefits and the type of challenger that finally emerges. It is Bickers and Stein (1996) that provide an empirical link between the two. They find, as described above, that distributive benefits have a deterrent effect on challengers; as distributive benefits increase, the likelihood that an incumbent will face a challenger that had previously held elective office in the primary or general election decreases. Below, I present a model of incumbent deterrence that examines the effects of distributive benefits as they were defined in Chapter 2. Similar to Bickers and Stein (1996), the interest is in whether increasing distributive benefits decreases the probability that the eventual challenger is electorally experienced.

Data and Methods

Figure 3.1 depicts the Deterrence Model, which is simply a probit model with dummy variables included for election years (except 1986). As with the Distributive Benefits Model in Chapter 2, the data here encompass U.S. House Elections from 1986 through 2004. Again, because of the use of measures from the preceding congress and incumbent specific measures from prior elections, only incumbents who are at least in their second term are included. The dependent variable is the presence of an experienced challenger (coded 1) and is modeled as a function of distributive benefits, previous electoral factors, and incumbent characteristics as described below.

[Figure 3.1 here]

Distributive benefits are measured here as they were in Chapter 2: the difference between the log of benefits received by district *i* during congress *t* and the log of the House mean amount of benefits in congress *t*. The expectation is that districts that

receive more than average spending on distributive benefits will have a lower probability of having an experienced challenger emerge. Distributive benefits are also interacted here with whether the incumbent is a Republican. In Chapter 2, it was discovered that, especially when they gained the majority in the House, Republicans typically receive less benefits than Democrats. It was suggested that adherence to conservative principals is one reason for this imbalance and that Republicans might feel that those who vote for them have preferences for limited government. It follows that Republicans who do engage in large scale distributive spending may provide an opportunity for challengers to question their fiscal responsibility, making the incumbent more vulnerable and making it more likely that an experienced challenger emerges.

As in Chapter 2, the previous electoral variables employed here are meant to measure the vulnerability of the incumbent. The expectation is that in districts with more vulnerable incumbents, there is an increased likelihood of the emergence of an experienced challenger. The incumbent's share of the two-party vote and the presence of an experienced challenger are measured the same as they were in Chapter 2. Instead of the spending gap, the Deterrence Model includes the log of incumbent spending from the last election specifically. The spending gap is indicative of vulnerability, as explained in Chapter 2. My purpose here, however, is to find measures that are most likely to be signals to potential challengers. Being a simple difference, the spending gap does not indicate exactly how hard, for lack of a better term, the election was for the incumbent. How much the incumbent had to spend to win is likely to be a better signal to potential challengers.

Finally, several characteristics of the incumbent, capturing the power and experience the incumbent has, are included. As in Chapter 2, dummy variables for party leader, committee chair, and committee ranking minority member are included. The expectations for all three are that, given the power and prestige associated with serving in the leadership or leading a committee, the presence of any of these factors will cause a decrease in the likelihood of the emergence of an experienced challenger. Instead of looking at seniority, I include a dummy variable for whether the incumbent was a freshman in the previous congress. Remember that the analyses do not include freshmen running for their first reelection. While being a freshman is usually indicative of vulnerability, so too might being in one's second term signal to potential challengers that the incumbent is still inexperienced enough and low enough in the power structure to be considered vulnerable.[1] Thus, I expect a higher probability of an experienced challenger in districts represented by a sophomore. Two other characteristics are included. These are the ideological extremity of the incumbent, measured by the absolute value of the first dimension of the DW-Nominate score, and the log of the incumbent's war chest, which is simply the log of the amount of money the incumbent has on hand at the beginning of the current congress. Canes-Wrone, Brady, and Cogan (2002) find that ideologically extreme incumbents tend to receive a smaller share of the vote. While this is a direct effect, it may also be the case that ideological extremity, like distributive benefits, also has an indirect effect. Specifically, being extreme could increase the likelihood that the

[1] There is evidence of a phenomenon called the "sophomore surge," in which incumbents in their first reelection bid improves their electoral performance (Levitt and Wolfram 1997), which has the effect of deterring a potential high-quality challenger. These results, however, are in comparison to their performance in the previous election in which they were challengers or otherwise vying for an open seat. Compared to incumbents who have served more than one term, sophomores should have less experience and less power, possibly making them more vulnerable to a strong challenge.

incumbent will face an experienced challenger in the next election. I have the opposite expectation for the size of the incumbent's war chest. The more money the incumbent has early in the campaign season, the better able she will be at fending off a challenge. Experienced challengers recognizing this should be less likely to enter a race they know will be very costly. A summary of these expectations are given below in Table 3.1.

[Table 3.1 here]

Results for the Deterrence Model

[Table 3.2 here]

Contrary to findings of Bickers and Stein (1996), Table 3.2 shows no significant effect of distributive benefits on the emergence of an experienced challenger. Neither the base variable nor the interaction for Republicans was statistically significant. In fact, very little, except for previous electoral variables, appears to predict whether an incumbent will face an experienced challenger in the election. Naturally, the incumbent's vote share in the previous election has a deterrent effect. Specifically, the larger the incumbent's vote share, the less likely it is she will face an experienced challenger in the next election. Also, the presence of an experienced challenger in the last election increases the likelihood of an experienced challenger in the current election. Having faced an experienced challenger in the last election causes a 0.08 increase in the probability of facing an experienced challenger in the current election.[2]

[2] This change in predicted probability is calculated holding continuous variables at their means and categorical variables at their medians. The predicted probability of an experienced challenger when there was not an experienced challenger in the last election is 0.10. The predicted probability increases to 0.18 when there was an experienced challenger in the last election.

Aside from vulnerability, the only factor that significantly affects the emergence of an experienced challenger is the ideological extremity of the incumbent. Surprisingly, ideologically extreme incumbents are less likely to face an experienced challenger. Moving from moderate (a Nominate score of zero) to extreme (a score of 1 or -1), decreases the likelihood of an experienced challenger from 0.15 to 0.05. The explanation for this result that follows will become clearer later in the chapter. It could be the case that ideologically extreme incumbents, while less popular with the electorate, are in fact more popular with organized groups. As a quick example, support for late term abortions would be an ideologically extreme position, one that is not likely to have support among the general electorate. Yet, such a position could garner the incumbent a great deal of support from women's rights groups like the National Organization of Women and NARAL Pro-Choice America. Increased group support for the incumbent could make a potential challenger rethink entry into the race.

The inability to find a link between distributive benefits and the presence of an experienced challenger raises two important points. First, it is empirically the case that distributive benefits do not deter an experienced challenger. Comparing this result with those found in Bickers and Stein (1996), it is most likely the case that those findings are a result of the time period studied, the 1990 election. To be sure, I reestimated the Deterrence Model for the 1990 election, dropping only the election year fixed effects. Both the distributive benefits measure and the interaction with Republicans were significant beyond the 10% level and in their expected directions.[3] It can be concluded that potential challengers that have held elective office do not factor how much

[3] The coefficients were -0.216 with a standard error of 0.127 and 0.333 with a standard error of 0.196 for distributive benefits and the interaction respectively. Full results are presented in Table A2.2.

distributive spending the district has received into their electoral calculations. This result provides support for the argument that the most important factors in the emergence calculus are not related to incumbent activities (Bond, Covington, and Fleisher 1985; Basinger and Ensley N.d.).

Where then does this leave the discussion of the indirect effects of distributive benefits? To answer this question, I present the second point; there may be support for the critique of Levitt and Snyder (1997). It must be the case that either distributive benefits have no indirect effects working through the quality of the challenger or the use of the experience measure does not effectively quantify the concept with respect to the deterrent effects of distributive benefits.

I propose that what is needed is a return to the theoretical underpinnings of Bond, Covington, and Fleisher (1985). Their work sought to explain challenger quality and took account of two aspects of quality: the electoral experience of the challenger and the challenger's campaign expenditures. They argue, and rightly so, that a quality challenger has both political aptitude, or unobserved characteristics that we try to encapsulate with experience, and monetary resources, the importance of which is familiar to any elections scholar. Much of the recent work on quality, however, as well as the work on deterrence, has looked at candidate-centered characteristics. They either use the electoral experience measure or try to better measure the unobserved characteristics referred to above. In studying incumbent activities, however, notions of candidate quality may not capture those characteristics of the challenger's campaign that directly relate to the electoral prospects of the incumbent, echoing the critique of Levitt and Snyder (1997).

Certainly, incumbents will seek to prevent challengers from entering the race that are of a higher quality—that is challengers that possess a set of attributes that make them more able to win an election. Not all successful campaigns, however, are mounted by quality or experienced challengers and restricting the examination of deterrence to its effects on the candidate might miss the effects incumbent activities, and particularly securing distributive benefits, can have on the campaign. The following section explores a concept I call challenging campaign strength, which is fundamentally a measure of resources. There are other important characteristics tapped by the variables I will describe below, but at its most basic level, the measure I create looks at the resources of the challenging campaign and the challenger's ability to manage those resources effectively.

Measuring Challenging Campaign Strength

When studying congressional elections, the literature has focused both on measures of quality and candidate resources, specifically the ability to spend money. With respect to deterrence, however, the preference appears to be developing a better measure of the quality of the candidates. There are both substantive and empirical benefits to focusing on candidate-specific characteristics. Candidate quality, first and foremost, should have a direct effect on the outcomes of elections. In fact, quality should not only affect the outcome, but is also usually correlated with other common predictors of election outcomes like incumbent or challenger spending. To not include some measure of quality leaves analyses open to omitted variable bias and prevents a complete examination of elections. Another empirical benefit to most measures of quality is that

they are usually constructed in such a way that they are exogenous to the system. This is not to imply that quality is uncorrelated with other predictors of vote share, but that these predictors do not cause quality.

Quality, theoretically, is unobserved and there have been some notable attempts to craft a more comprehensive measure of quality, both of the challenger and incumbent. One of the more recent and more advanced measures comes from Stone and Maisel (2003) and Stone, Maisel, and Maestas (2004). Using their Candidate Emergence Study they examine three dimensions of quality for the incumbent and two for potential candidates (strategic and personal qualities for both and performance assessments for incumbents). The measures here are based on assessments from participants and thus maintain the attractive quality of exogeneity. McCurley and Mondak (1995) and Mondak (1995) also have a multidimensional measure of quality, focusing on the quality of the incumbent. Their measures, also derived from individual respondents, focus on the competence and integrity of the incumbent. Again, the use of survey responses contributes to the exogeneity of the measures. Other uses of survey responses include the many studies at the individual level (e.g. Jacobson 1981, 1987) that use evaluations of the incumbent and challenger (or even recognition) to gauge candidate quality. Other notable measures are the Green and Krasno (1988) scale, which is additive and gives points (up to eight) to challengers for such characteristics as having held political office, having run unsuccessfully for office, being a celebrity, etc., and the Lublin (1994) measure of quality. Lublin focuses entirely on the aspect of having held political office and uses dummy variables for various distinctions between offices, such as being a Governor or U.S. Representative. The main drawback to all of these measures, however,

is that they are very difficult to construct for use outside of the original research. The first two measures would require the use of a survey every two years, which would still leave us unable to construct measures of quality for the past. The last two could be constructed, but it can also be very difficult to find information on challengers to federal offices, especially the House. The best source of information on House challengers is *CQ Weekly*, which may not have information on some challengers, especially challengers to safe incumbents.

In my recount of measures of quality, I have thus far left out the most widely used—having held elective office. The congressional election studies that have used this particular measure are far too numerous to list here, although most of the works cited in this chapter have used the measure. The measure is dichotomous, scored 1 if the challenger has held elective office, 0 otherwise. This aspect of the measure already makes it attractive to the congressional scholar; it has ease of interpretation. In a model of vote share, its estimate is simply what percentage of the vote is lost by the incumbent when facing an experienced challenger. The measure is also appealing in that it is easy to obtain. Given the number of studies that have used the measure, one could obtain the data practically anywhere. In addition, one could obtain data on simple electoral experience for a long span of elections; Jacobson and Kernell (1981) examine electoral experience as far back as 1972 and more recent studies have included experience measures going back to the 1950s (Canes-Wrone, Brady, and Cogan 2002).

While availability and ease of interpretation make the electoral experience dummy a viable measure, especially for studying election outcomes, we may be asking too much of it when our focus is on what incumbents can do to deter quality challengers.

Looking back at the studies of quality described above, there appears to be too much variation in this concept than can be captured using a simple dummy variable; a measure that has been described as "crude" and "blunt" (Jacobson 1989, 776). We also must consider the nature of the question being asked and what our measure of quality really means. If we are interested in whether an individual will reconsider running against the incumbent because the incumbent has made her or himself more attractive to the electorate, then using experience, which can serve as a proxy for the many characteristics that make up quality, or other candidate centered measures will be fruitful. These measures, as I explained, do not directly address characteristics of the campaign, which can have more relevance to the electoral prospects of the incumbent. Incumbents may not be able to, for example, deter the emergence of an experienced or quality challenger by securing more distributive spending for their districts. Yet, we still might be able to show that incumbents can decrease the potency of the opposing campaign, even that of an experienced challenger, which would be a deterrent effect not detected by the use of the quality measures.

The Index of Challenging Campaign Strength

First, we must distinguish between indicators of challenger quality and indicators of campaign strength. As alluded to above, quality should include a host of factors intrinsic in the individual that makes her or him a better challenger. The factor that has received the most attention is electoral experience. Simply indicating whether a challenger has previously held elective office is an efficient way to include many of the unobserved factors that contribute to quality—the likelihood of being recognized by

voters, political savvy, the ability to run an effective campaign, etc. Yet, not all experienced challengers will mount strong campaigns and the lack of electoral experience does in no way suggest that the challenger's campaign will be weak. Looking at campaign strength paints a different picture than the one we observe when measuring candidate quality. Most of the work on deterrence focuses on a strategic choice of the candidate, asking the question of whether an incumbent can prevent a quality challenger from running; meaning the high quality challenger will feel her or his resources are better used in another race at another time. For the most part, however, incumbents will always have a challenger, even if the challenger is of a lower quality. The question I seek to answer here is if incumbents can act, particularly through securing distributive benefits, to weaken *any* challenging campaign.

For the purposes of this analysis, a measure of campaign strength should address the critique of Levitt and Snyder (1997). Namely, if a challenger having held electoral office does not sufficiently measure the vulnerability an incumbent feels prior to an election, then a measure should be developed that more accurately reflects these fears. Put another way, there are characteristics beyond having held elective office that will indicate whether someone will be a worthy challenge. In the following paragraphs, I identify five indicators that contribute to a strong campaign and the indicators will be scaled using the loadings from a principal components factor analysis. The indicators can be classified in two broad categories that typify strong campaigns: resources and support. The indicators do not exist exclusively in one category or the other, as will be explained below.

Briefly, the indicators are electoral experience and the natural logs of total contributions, the number of individuals contributing to the campaign, the amount of money, including contributions, spent by the party, and the amount of political action committee (PAC) contributions. Experience most directly relates to the traditional notion of candidate quality and will be measured using the standard dichotomous variable indicating whether the challenger has previously held an elective office. As discussed above, the major alternatives to measuring experience as a dichotomous variable have focused on creating categories or scales for experience. Again, this line of research has yielded excellent work in the study of candidates, but the simple dichotomous measure should be good enough to measure those traits that contribute to a propensity for running a successful campaign, including being able to raise and efficiently spend campaign funds. Thus electoral experience is scored 1 if the challenger has held an elective office, 0 otherwise. While electoral experience has been somewhat maligned in the preceding paragraphs, it is a necessary component to a measure of campaign strength. Challengers that are experienced have demonstrated that they can mount a strong campaign, having already run at least one successful campaign. More importantly, experience will also contribute to how effectively the challenger uses her resources and experienced challengers are already far more likely to have a base of support.

The three monetary measures, measured in constant 2000 dollars, all capture the resources available to the challenging campaign, which could be measured simply by total receipts. I include the party and PAC measures specifically to gauge the support the challenger has from both of the sources: the party and the interest group community. For total contributions, I take the log of total receipts reported by the challenger to the Federal

Election Commission (FEC). Party spending is measured as the sum of party contributions to the challenger, party spending on the challenger's behalf, and communication costs incurred by the party on behalf of the challenger. PAC contributions are the sum of contributions made by corporate, labor, and trade groups to the challenger. Increases in either measure should be indicative of a stronger challenging campaign. Looking at the campaign from the perspective of the party or PACs, a weak campaign is not worth contributing limited resources to. Party organizations and interest groups should be more likely to spend their money on campaigns that have a reasonable chance of success, given the strategic nature of contributors (Jacobson and Kernell 1981). This rationale also applies to the final measure, the number of individual contributors. Individuals, like parties or groups, also engage in strategic calculations with respect to campaign donations. Furthermore, if an individual is willing to give money to a candidate, it is likely she will turn out to vote for that same candidate on Election Day. Thus looking at the number of individual contributors should also provide a good measure of support for the challenger's campaign.

Data were collected on the above indicators for major party House challengers in the 1984 to 2004 elections. The other analyses in this dissertation start with the 1986 election. 1984 is used here so that challenging campaign strength for the prior election can be calculated for 1986. Before the results are presented, there are methodological considerations that need to be addressed. First is the use of the natural log of the campaign finance data described above. Logs are used because I assume that the relationship between the campaign finance indicators and campaign strength is nonlinear. Especially for the monetary indicators, there is likely to be a decreasing marginal utility

of each additional dollar received by the challenging campaign. The first $1,000 is more important than an addition $1,000 when the campaign has already raised $500,000, for example. Second is the handling of missing data.[4] The most frequent reason for campaign finance data to be missing from a candidate who challenged an incumbent is that the candidate did not raise enough money to require the filing of reports with the FEC. In all nineteen cases with some missing data, missing figures were recoded to one (allowing the log to be calculated). Reported figures of zero were also recoded to one for the same purpose.

An additional issue that needs to be addressed is the potential for varying relationships over time. For example, party contributions may not be as important in 2004 as they were in 1984. There are a few solutions to this problem, some of which would substantially increase the complexity of the analysis. One could, for example, employ a covariance structure model that treats each election year as a separate group. Another possibility would be estimate the latent trait in a hierarchical framework treating the scores as randomly varying coefficients. For the purposes of creating a simple index, I opted to factor analyze each year separately and create a separate index for each year. The procedure itself remains simple as does the interpretation of the results and the problem of time-varying relationships between the indicators and the latent trait is avoided. Table 3.3 shows the eigenvalues for each of the five possible factors and the loadings for each of the indicators, both for each election year.

[Table 3.3 here]

[4] There were 19 major party challengers between 1984 and 2004 who ran in general elections, but did not have a record with the FEC.

The remarkable conclusion to draw from the analysis is that indicators relating to experience and resources, which are usually included separately in analyses, all load on one factor. As the first panel of Table 3.3 demonstrates, for all years only the first factor has an eigenvalue greater than one. By the Kaiser Criterion (as described in Kim and Mueller 1978), which suggests the retention of components with eigenvalues greater than one, one principal component is retained. This result is advantageous to the study of incumbent deterrence for two reasons. First, the retention of one factor means that there is one dimension with which we need to be concerned, a dimension I have called campaign strength. Second, in examining how incumbent activities can affect the strength of the challenger's campaign, only one measure is needed simplifying the system of equations. Looking at the factor loadings in the second panel of Table 3.3, increases in all of the indicators are positively related to campaign strength, as expected. Also note that the loadings are relatively constant over time with the exception of challenger experience, particularly in 2002 and to some degree in 1990. The most likely cause of the lower factor loadings in these particular years is the lack of experienced challengers. A quick look at the data from 1984 to 2004 shows an average of sixty-five experienced challengers per election. In 1990 and 2002, the numbers of experienced challengers were forty-six and forty-seven respectively. The final measure of campaign strength, which I am calling the Index of Challenging Campaign Strength (ICCS) ranges between -2.305 and 2.127 and can be thought of as standard deviation changes in the underlying trait; this interpretation is appropriate because the method creates a scale with a mean that is approximately zero and a standard deviation of approximately 1. With a more appropriate measure of challenging campaigns created, the full district level analysis can

proceed. The next section details the district level system of equations that exemplify the relationships depicted in Figure 1.1 and Figure 3.2 below. Most importantly, the new measure will help answer questions of the indirect effects of distributive benefits, the endogeneity between benefits and campaign strength, and the effects that both of these concepts have on electoral outcomes.

The District Level System of Equations

The inability to find a link between distributive benefits and challenger experience highlights both the necessity of a new measurement strategy for the strength of the challenger and the potential for biased estimates. As discussed above, if there are indirect effects of distributive benefits, the inadequacy of experience exacerbates the bias of the coefficient of distributive benefits when some measure of challenger strength is not included in a vote share model of House elections. The following analysis addresses the measurement issues with respect to challenger strength and the potential endogeneity between distributive benefits, challenger strength, and campaign spending using a system of equations. The system, however, is not a strict set of simultaneous equations; there is an order to the process, which is depicted in Figure 3.2 below.

[Figure 3.2 here]

Distributive benefits are modeled as simultaneously occurring with challenging campaign strength. Thus the potential endogeneity between benefits and strength can be examined. I have also chosen to place the spending gap next in the sequence—affected by but not affecting distributive benefits and challenging campaign strength. While distributive spending, increases in the challenger's resources, and campaign spending all

occur throughout the campaign, it is more conceptually pleasing to model the spending gap subsequent to the other two. Distributive spending occurs long before the campaign begins, thus it occurs naturally before campaign spending. In addition, even if the incumbent is fearful of the challenger's ability to spend, it is unlikely to the point of near-impossible that the incumbent could secure additional benefits for her district so late in the season. The same might also be true of the relationship between benefits and campaign strength, casting doubt on the endogeneity argument. Whether we look at the emergence of an experienced challenger early in the election year or the resources and support built up by the challenger's campaign, it might be too late for the incumbent to bring additional benefits to the district to offset the strength of the challenge against her. Yet the claim has been made that there is an endogenous relationship; thus it is modeled here to assess the nature of the bias if it exists. Challenging campaign strength is also logically placed before the spending gap. Both measures are essentially snapshots from Election Day. While a more dynamic model would need to investigate the possibility that candidates step up fundraising when faced with a spending disadvantage, it can be safely assumed that final spending is a function of final contributions and not the other way around. The natural final stage of the process is the outcome on Election Day, which is affected by distributive benefits, challenging campaign strength, and the spending gap without simultaneously causing any of those factors. Figure 3.3 expands on this simple diagram and gives the full system of equations.

Data and Methods[5]

[Figure 3.3 here]

Equation 3.1 is the Distributive Benefits Model from Chapter 2 (Figure 2.2) with one addition: the ICCS. Again, to take account of the potential endogeneity between distributive benefits and challenging campaign strength, it is necessary to include the campaign strength measure in the model for distributive benefits. It is expected that, assuming an endogenous relationship, that challenging campaign strength has a positive effect on distributive benefits; incumbents perceiving a strong challenge will seek more benefits for the district to offset the challenge. Equation 3.2 should also be familiar; it is the Deterrence Model from earlier in this chapter substituting the ICCS for challenger experience as the dependent variable. Equation 3.3 models the spending gap, measured as the log of challenger spending minus the log of incumbent spending, as a function of distributive benefits and challenging campaign strength, as well as other factors. As is the case with challenging campaign strength, it may be that Republicans do not reap the same benefits as Democrats with respect to distributive benefits. Therefore, the interaction between benefits and party (Republican) is included as is the Republican variable. I expect distributive benefits to have a negative effect on the spending gap and the interaction of benefits and party to have the opposite effect, mitigating the electoral benefits of distributive spending for Republicans. Distributive benefits, in addition to weakening the challenging campaign, should also tilt the spending gap in favor of the incumbent (causing the spending gap variable to be negative). Challenging campaign

[5] As with the preceding analyses, the data used for the Vote Share System of Equations are elections from 1986 to 2004 in which an incumbent, who is in at least her second term, ran against a major party challenger. Summary statistics for all district and election year level variables are given in Table A2.1 of Appendix 2. Appendix 2 also contains summary descriptions of all of the variables as a reference.

strength should have a positive effect on the spending gap—the more resources the challenger has the more the challenger can spend.

With respect to the additional factors, I include the spending gap from the previous election. The ability, or lack thereof, of the previous challenger to keep pace with the incumbent with respect to spending could be a sign of challengers in general to that particular incumbent having the support, or again the lack thereof, necessary to match the incumbent's expenditures. The expected relationship, therefore, is positive. Finally, the spending gap is modeled as a function of the median income of the district. Given the advantage incumbents have, particularly in the realm of fund raising, wealthier districts should yield greater opportunities for incumbents to raise and spend more than challengers. As with the other equations, fixed effects for election years, excluding 1986, are included.

The final equation listed in Figure 3.3 is the Vote Share Equation. Vote share is the share of the two-party vote received by the incumbent from district *i* in election *t*. It is modeled as a function of the endogenous variables described above, including the interaction of distributive benefits with party. I expect distributive benefits to have a positive effect on vote share, as described throughout the first two chapters. As for the interaction with party, I again expect the opposite—a negative coefficient would be indicative of Republicans receiving less of an electoral benefit than Democrats. Vote share in the current election should also be affected by vote share from the prior election. Although previously discussed in terms of incumbent vulnerability, it takes on a different meaning here. Including prior vote share is a means of correcting for the possible autocorrelation in a particular district's election outcomes. Incumbents can expect a

baseline of support within their districts, which is appropriately measured by prior vote share. Similar to the Deterrence Model, whether the incumbent was a freshman in the previous congress and the ideological extremity of the incumbent are included. The rationale for including these variables is the same as before. More so than measuring tenure in office, being at the lowest end of the seniority scale is likely to be what counts in terms of vote share. For ideological extremity, again, Canes-Wrone, Brady, and Cogan (2002) find that extreme incumbents do worse electorally. While extremity was shown above to have a deterrent effect, it still could be costly for incumbents with respect to vote share. In addition to the vulnerability variables, I also include a measure of district preferences: the proportion of the two-party vote received by the presidential candidate from the incumbent's party in the most recent presidential election. As stated in Chapter 2, Erikson and Wright (1980) explain that in ideological elections, like 1972, presidential vote can be a good measure of district ideological preferences. At the very least, presidential vote is a good measure of the partisan preferences of the district; districts in which Bush ran well, for example, should be more likely to elect a Republican representative.

Vote share is also affected by national considerations; three are included here. First is presidential approval, which is measured using the percent of respondents to the Gallup Poll closest to each election that said they approve of the job the President is doing,[6] rescaled so that 50% is zero; thus the measure of approval I use ranges from -50 to 50. Second is a dummy variable coded as one for midterm election years and zero otherwise. Third is the annual percent change in real disposable income in the year of the

[6] The typical question wording for the Gallup approval question is: *"Do you approve or disapprove of the way [Name] is handling his job as president?"*

election. Naturally, approval and the midterm phenomenon should affect members of the President's party. Likewise, the President and his party are often given the credit and blame for the nation's economic performance (Tufte 1975; Erikson 1988, 1990; Hibbing and Tiritilli 2000). Therefore, these three national factors are interacted with a variable identifying members of the President's party. This variable, denoted "In-Party," takes on a value of 1 for members and -1 for members of the out-party. Table 3.4 summarizes all of the expectations described above.

[Table 3.4 here]

Results

The system of equations was estimated using two-stage least squares (2SLS), which is consistent in the face of endogeneity. To test for coefficient bias, I estimated the system using equation-by-equation ordinary least squares (OLS), and three-stage least squares (3SLS), which estimates the entire system simultaneously and produces more efficient estimates than 2SLS. The note following Table 3.5c gives the results of Hausman specification tests between the 2SLS estimates and the OLS and 3SLS estimates respectively. In both cases (2SLS v. OLS and 2SLS v. 3SLS), the null hypothesis is rejected suggesting biased coefficients in both of the efficient estimators.[7] While the 3SLS estimates would have been preferable, given that they are more efficient when estimating a multi-equation system, I gladly sacrifice efficiency for consistency in

[7] The cause of the bias in the 3SLS estimates is different than in the OLS estimates. 3SLS, which recognizes the interrelationships of the system, requires that every equation in the system be free of specification errors. Under OLS, if one equation is not perfectly specified, the other equations in the system are unaffected; although there are other problems that arise when estimating a system as described in the text using an equation-by-equation procedure. Under 3SLS, a problem in one equation can bias the results for the entire system; thus it is more appropriate here to use 2SLS, which is at least consistent given the inclusion of proper instruments for the endogenous variables and identification of all equations. Instruments are discussed in the text below.

the estimates. Full results are presented in Tables 3.5a, 3.5b, and 3.5c, collectively referred to as Table 3.5. Tables 3.5a and 3.5b have the estimates for the relevant variables included in each equation. Table 3.5c details the fixed effects for election years.

[Tables 3.5a, 3.5b, and 3.5c here]

Before discussing the results in each equation, I will note a few aspects of the system. First, in order for 2SLS to produce consistent estimates, it is necessary to have at least one good instrument for each endogenous variable, allowing the equations to be identified. The system of equations presented here does not yield itself to a straightforward test of the instruments used. As support for the consistency of the estimates given above, I offer the following. First, there are the results of the Hausman specifications tests. The Hausman test simply checks for *systematic* differences between two sets of estimates. Under endogeneity, we assume that the systematic difference is bias induced by violation of the assumption that the covariance between the predictors and error term equals zero. The Hausman tests described above signal that there is a systematic difference between the 2SLS and OLS estimates (as well as the 3SLS estimates). It leads that 2SLS here is producing estimates that are at least less biased than OLS would. For more convincing evidence, I also estimated the reduced form of each equation using OLS.[8] These results are presented in Table A2.3 of Appendix 2. A comparison between the estimates of the reduced form equations and the results from

[8] The reduced form equation is created by substituting all of the variables from one equation into another. For example, in the Distributive Benefits equation, which has the ICCS as a predictor, distributive benefits are estimated using all of the variables in that equation (Equation 3.1) *and* all of the predictors of challenging campaign strength (Equation 3.2). Naturally, duplicate predictors are dropped prior to estimation. Additionally, in all equations in which distributive benefits is a predictor, it is interacted with party. Thus in the reduced form of the last three equations, I also include interactions between each of the predictors from Equation 3.1 with party.

Table 3.5 produces the highlighted cells in Table 3.5. These cells represent estimates that can be considered "good" instruments—those that significantly predict the instrumented variable while not predicting any of the other endogenous variables in the system—for the endogenous variable given in the column heading.

Looking first at Equation 3.1, the Distributive Benefits Equation, we see results that mirror those reported in Table 2.4. There is a preference for vulnerable incumbents to seek distributive benefits only in terms of campaign spending. Incumbents who faced a large amount of challenger spending, relative to their own, received more benefits in the following congress. Again, however, we see that electoral performance has the opposite effect as predicted. Strong performance, instead of giving the incumbent enough comfort to not pursue distributive spending, drives incumbents to increase their share of the distributive pie. As explained in Chapter 2, it might be the case that incumbents feel the need to repay electoral debts, both to interest groups and their constituents. It could also be, although unlikely, that incumbents are more comfortable to *seek* benefits, not feeling pressures to reduce distributive spending. I call this explanation unlikely because I do not believe it to be the case that incumbents feel any regular pressure to curtail distributive spending. Turning to incumbent characteristics, the results are largely the same as they were in Chapter 2. The only difference is that party unity in the previous congress, which was marginally significant in Table 2.3, is now not significant. The opposite is true for the percentage of blacks in the district, which is now marginally significant with an effect opposite what was predicted. Promising for the study of the electoral effects of distributive benefits is that, while distributive benefits have an effect on challenging campaign strength, which is discussed below, campaign strength does not

significantly affect the amount of benefits received by the district. Thus the fear of bidirectional causality between benefits and the challenging campaign is unfounded here. Above, I posited an explanation for unidirectional causality, with benefits affecting campaign strength. Specifically that the time horizon in which a strong campaign emerges does not allow an incumbent to seek additional benefits to be supplied before the election. This explanation is supported here.

Comparisons can also be made between Equation 3.2 and the Deterrence Model from earlier in the chapter. Like the Deterrence Model, the Challenging Campaign Strength Equation shows first that vulnerable incumbents will face stronger challenging campaigns. An increase of one point in the incumbent's previous vote share decreases the ICCS by 0.024. The presence of an experienced challenger in the previous election will lead to an increase of 0.134 in the ICCS. In the Deterrence Model, incumbent spending from the previous election was not significant, but it is in the Challenging Campaign Strength Equation. Specifically, a one percent increase in incumbent spending in the previous election causes an increase of 0.125 in the ICCS.[9] The effect of ideological extremity is also the same as in the Deterrence Model with a move from the most moderate (a Nominate score of zero) to the most extreme (a score of 1 or -1) causing a decrease in the ICCS of 0.54. Turning now to distributive benefits, it is clear that securing benefits can have strong deterrent-like effects, just not occurring through the emergence of a quality challenger. Increasing distributive benefits causes a decrease in campaign strength, which is largely a measure of resources and support. Thus an increase in benefits will cause the challenger to receive fewer contributions overall, fewer

[9] The use of logged incumbent spending leads to the following interpretation of β: a 1% increase in incumbent spending (X) causes a $\beta/100$ change in the ICCS (Y). Note that this is the opposite of the interpretations from Chapter 2, which had a logged dependent variable and level independent variables.

individual contributors, less monetary support from the party, and less from PACs. A one percent increase in the ratio of district to mean benefits causes a decrease of 0.00078 in the ICCS.[10] But these electoral benefits are only realized by Democrats. The interaction of benefits with party shows that Republicans are actually penalized with respect to challenging campaign strength. Every one percent increase in distributive benefits for Republican incumbents causes a 0.051 *increase* in the ICCS. Thus Republicans, by engaging in distributive politics, make their reelection bids more difficult, emboldening moneyed opponents to support their challengers.

Distributive benefits do not have direct impact on the spending gap, as seen in Equation 3.3. Neither benefits nor the interaction with party are significant. Distributive benefits do, however, have an indirect effect on the spending gap working through challenging campaign strength. A one point increase in the ICCS causes a 0.93 increase in the spending gap. Given the measurement of the spending gap as the log of challenger spending minus the log of incumbent spending, the effect of the ICCS has the same interpretation as the coefficients in the Distributive Benefits Model in Chapter 2. Specifically a one point, or one standard deviation, increase in challenging campaign strength causes a 93% increase in the ratio of challenger spending to incumbent spending.[11] As predicted, the spending gap from the previous election has a positive effect on the spending gap in the current election. Also, as the log of district median income increases, the spending gap decreases. Specifically, a one percent increase in

[10] Related to footnotes 13 and 14 in Chapter 2, for the case of $y = \beta \ln(x)$, $\beta/100$ gives the absolute change in y for a 1% increase in x.
[11] As with distributive benefits, the difference of the logs of spending is equivalent to the log of the ratio of challenger to incumbent spending.

median income causes a 0.332 percent decrease in the ratio of challenger to incumbent spending.

Finally, the results for Equation 3.4 show that distributive benefits have strong direct and indirect effects on the vote share of the incumbent. A one percent increase in distributive benefits causes a 0.013 of a point increase in the incumbent's share of the two-party vote for Democrats and a 0.002 of a point increase in the vote share of Republicans. Working through campaign strength, benefits can exhibit strong indirect effects. A one standard deviation increase in the ICCS causes an 8.8 point decrease in the vote share of the incumbent, which is a pretty substantial effect. The spending gap, however, does not have a significant effect on vote share. It is likely that, given the emphasis of contributions in the ICCS, campaign strength is essentially washing out any effect of campaign spending. The incumbent's prior vote share also has a significant effect with a one point increase in prior vote share causing a 0.055 of a point increase in current vote share. Ideological extremity also has the anticipated effect, consistent with Canes-Wrone, Brady, and Cogan (2002). Moving from least to most extreme, the one point shift causes a 2.3 point decrease in the vote share of the incumbent. District preferences, measured here as the proportion of the vote received by the presidential candidate from the incumbent's party, also have a significant effect. A one point increase in presidential vote share, which would be measured as an increase of 0.01 of a point, translates into an increase of 0.166 of a point in incumbent vote share. Lastly, national forces all predict vote share as expected. Members of the President's party can expect an additional 0.069 of a point for every point increase in presidential approval. They can expect roughly 1.85 points less in midterm election years. And they will gain 0.216 of a

point for every one point increase in the percent change in real disposable income. Members of the out-party receive the opposite effects.

The Direct and Indirect Effects of Distributive Benefits

Recapitulating the results discussed above, distributive benefits do have a direct, albeit small, effect on election outcomes. A moderate, ten percent increase in distributive benefits will increase the vote share of Democrats by 0.13 of a point and Republicans by 0.02 of a point. There are also, as noted, indirect effects for distributive benefits. Increasing benefits for Democrats leads to weaker challenging campaigns, which in turn also increase the incumbent's vote share. The opposite is true for Republicans. Increasing benefits, also working through challenging campaign strength, will tilt the spending gap in favor of the incumbent; although the spending gap does not significantly affect vote share. To clarify these relationships, I present Table 3.6, which details the direct and indirect effects of various levels of distributive benefits, and Figure 3.4, which follows the discussion below and depicts the total effect of distributive benefits for Democrats and Republicans.

[Table 3.6 here]

The first column of Table 3.6 lists real amounts of spending on direct payment programs ranging from the minimum for the sample, roughly $206,000, to the maximum, about $8 billion. The second column translates these amounts into the measure of distributive benefits used in these analyses: deviations of the log of the amount from the log of the mean amount of spending for a particular Congress. To calculate the difference, I used the overall mean of the sample, which is $251 million. The third

column shows the direct effect of distributive benefits on challenging campaign strength. Given the linearity of each of the models in terms of the coefficients, the cell entries of this and proceeding columns can be interpreted as changes in the specified dependent variable holding all other variables constant. The fourth column contains the indirect effect of distributive benefits on the spending gap, working through challenging campaign strength (specified by the parenthetical reference in the column heading). This effect is calculated using the change in the ICCS given in the previous column. The fifth and sixth columns are the effects on vote share directly and indirectly through the ICCS. Again, the indirect effect is calculated as the product of the change in the ICCS and its coefficient in the Vote Share Equation. The final column is the total effect of distributive benefits on vote share, simply the sum of the direct and indirect effects. No indirect effects through the spending gap are included because the spending gap does not significantly affect vote share. For all columns where there are differences between Republicans and Democrats, the Republican effects are calculated as the sum of the coefficients for distributive benefits and the interaction of benefits with party.

Obviously, the meaningful differences in Table 3.6 are those between Democrats and Republicans. With respect to the ability of incumbents to weaken challenging campaigns, Republicans, instead of seeing simply a muted effect, actually need to work to limit distributive spending to see any rewards. Republicans receiving benefits above the mean tend to face stronger challenging campaigns. I have already speculated as to the causes for this result in Chapter 2, which showed that Republicans received fewer benefits than Democrats particularly after they gained a majority in the House. To briefly summarize my argument, voters who normally support Republicans may have

preferences for smaller government. Republicans who increase government spending might, therefore, give opponents an issue on which to criticize the incumbent during the campaign. Emboldening challengers then leads to the results observed for the change in the spending gap. While Democratic incumbents who receive better-than-average benefits face weaker campaigns and are able to more easily outspend their challengers, Republican incumbents face stronger campaigns that are better able to close the spending gap. It is in the Vote Share Equation that we observe the muted effects for Republicans that I hypothesized would exist throughout the system. Looking at the indirect effects first, as with the spending gap, Republicans, facing stronger challenging campaigns, lose votes when they receive benefits over the mean level. The direct effects, however, give Republicans a net gain as they increase their share of the distributive pie. The effects, overall, are more exaggerated for Democrats. For Democrats, the direct and indirect effects amplify one another. Thus decreasing benefits both decreases vote share and strengthens the challenging campaign, which also decreases vote share. The converse is true for increasing benefits. At the minimum level of benefits, a Democrat can expect to lose 9.8 points. A Republican loses only seven-tenths of a point. At the maximum, Democrats will be rewarded with 4.8 points and Republicans will see their vote share increase only by four-tenths of a point. The partisan differences are even clearer as depicted in Figure 3.4.

[Figure 3.4 here]

We can now return to Figure 1.1 for a complete picture of how distributive benefits fit into the incumbency advantage cycle. With minor changes, this figure is reproduced as Figure 3.5 below. As demonstrated both in Chapter 2 and in the system

presented above, incumbents who are more successful at the ballot box feel no need to limit distributive spending in their districts. In fact, the better an incumbent does, the more distributive benefits they tend to secure in the subsequent congress leading me to update the upper-most box of Figure 3.5. It seems more likely that safer incumbents either feel freer to engage in distributive politics or need to repay electoral debts through supporting particular programs. In either case, an increase in the incumbent's vote share leads to an increase in future distributive benefits. Earlier in this chapter, it was also discovered that distributive benefits do not have a strict deterrent effect. That is, consideration of distributive benefits does not significantly effect the entry decisions of electorally experienced challengers. Distributive benefits do, however, have a strong effect on the strength of the challenging campaign as well as a direct effect on the incumbent's vote share. Figure 3.5, therefore, becomes a more complete statement of how distributive benefits factor into incumbency advantage and provides a realistic, electoral explanation for the persistent growth of distributive benefits, with a major caveat. Incumbents secure distributive spending, giving them something to claim credit for—programs that are going to have a base of support among individuals and interest groups who benefit from them. This has two electoral consequences. First, following the central path in Figure 3.5, incumbents receive a direct electoral benefit. Second, incumbents win more easily because they face a weaker challenging campaign. Yet this is only the case for *Democrats*. Following the bottom path, eventual Republican challengers find that they receive less support and have fewer resources available to them. While the victory is safer, the incumbent now needs to continue supporting the programs that propelled her to reelection and possibly support new spending favored by

groups and constituents. Republican incumbents still receive a reduced direct benefit, but the indirect effect is to strengthen the challenging campaign. The net effects are positive, but very small, which may explain why Republican legislators secure fewer distributive benefits for their districts.

[Figure 3.5 here]

Conclusion

In this chapter, I demonstrated that distributive benefits do indeed have strong direct and indirect electoral effects. Given the findings I report here, one might ask why previous research displays weak and sometimes contradictory effects. At the beginning of this chapter, I posited several reasons to which I now return. First, many of the previous studies are limited in the time periods they examine with some studies looking only at one election. Another reason for disparate findings could lie in the measures used. In Chapter 2, I described several different measurement strategies, highlighting the rationale for using a contemporaneous difference from the congressional mean. The results of the Deterrence Model, however, may not support the argument that differences are largely a function of measurement issues. Recall that using the measure I develop in Chapter 2 and examining the same time period as Bickers and Stein (1996), I obtain results very similar to theirs with respect to the deterrent properties of distributive benefits. This, instead, lends support to the time period argument. It is not the case that previous research is wrong, but previous conclusions must be viewed in the context of the period from which they are drawn. Third and most importantly, few studies consider the importance of indirect effects. The studies discussed above have taken the various steps

in the cycle depicted in Figures 1.1 and 3.5 as separate. For example, Stein and Bickers (1994a) examine the electoral causes of distributive benefits and then separately examine their effects. Bickers and Stein (1996) is also one of the few studies to empirically examine the deterrence capabilities of distributive benefits. None of the previous work, however, has attempted to integrate all of these electoral aspects into one analysis. As Levitt and Snyder (1997) predict, not accounting for this systematic structure can have a harmful effect on analyses—hence the often weak results reported by other studies.

A final explanation for differences between these and other findings (and among other findings) is the failure to account for the different effects observed for Republicans. Sellers (1997) reports findings along the same lines as the partisan results reported here. Sellers (1997), however, looks at the effects of distributive benefits conditional on the fiscal conservatism of the incumbent, as measured by the National Taxpayers' Union. Partisanship, as opposed to an ideological measure, I would argue is more useful in aggregate terms. In the theoretical discussion of the distribution of benefits, considerable attention is paid to partisanship—specifically the majority party. One of the results discussed in Chapter 2 is that Republicans, after gaining a majority of the House, secured significantly less spending on direct payment programs than their Democratic counterparts (consistent with Bickers and Stein 2000). This is after controlling for power positions within Congress, specifically chairmanships. The exploration of electoral effects in this chapter demonstrated that Republicans who secure too much spending can put themselves at an electoral disadvantage. At the very least, distributive benefits appear to be a wash for Republicans. There is a small direct benefit counterbalanced by a

small indirect loss. I suspect that failure to account for these partisan differences is the driving force behind the often weak effects reported for distributive benefits.

Partisan differences also lead to the larger and more important question of why Republicans do not reap the same rewards that Democrats do. The evidence suggests that Republicans find problems both with groups, who help to strengthen the challenging campaign, and with the electorate, who do not directly reward Republicans as much as they do Democrats. The second part of this dissertation is devoted to explaining the phenomenon of individual reactions to distributive spending. I have stated at various points that partisan differences, particularly the weakness in effects for Republicans, are being driven by the spending preferences of conservative voters, who would be most likely to support Republican incumbents. Chapter 4 describes a theory of individual behavior as it relates to distributive benefits. The main prediction that will be generated from the theory and tested in Chapters 5 and 6 is that, as distributive benefits in a district increase, conservative voters that are politically aware (all terms to be defined in the following chapters) are less likely to vote for the incumbent. Much of the discussion that follows will focus on the actions of aware, conservative individuals. Looking at ideology, I pay more attention to conservatives because the idea that liberals vote to reward incumbents for distributive spending is far less controversial. Existing theory has stacked the deck in favor of preferences for more spending. The assumption is that rational individuals should prefer more to less. Larger government is also consistent with expectations of liberal preferences. Far more interesting is the idea that conservatives, under certain circumstances, can be lead to vote against the incumbent, controlling for party congruence. Political awareness factors in as the lynchpin to the theory. It would

be unreasonable to expect a self-identified conservative with little interest in or knowledge of politics to either be aware of distributive spending or be able to act in a manner consistent with their spending preferences. This examination will also allow for evaluation of the claims that pork barrel spending lost Republicans the Congress.

Figure 3.1
The Deterrence Model

$$\begin{aligned} \textit{Experienced Challenger}_{i,t} = {} & \alpha_0 + \gamma_1 \textit{ Dist. Ben.}_{i,t} + \gamma_2 \textit{ (Dist. Ben.}_{i,t} \times \textit{Republican}_{i,t}) \\ & + \beta_1 \textit{ Vote Share}_{i,t-1} + \beta_2 \textit{ Log of Inc. Spending}_{i,t-1} + \beta_3 \textit{ Exp. Chal.}_{i,t-1} \\ & + \varphi_1 \textit{ Freshman}_{i,t-1} + \varphi_2 \textit{ Republican}_{i,t} + \varphi_3 \textit{ Leader}_{i,t} + \varphi_4 \textit{ Chair}_{i,t} + \varphi_5 \textit{ RMM}_{i,t} \\ & + \varphi_6 \textit{ Ideological Extremity}_{i,t} + \varphi_7 \textit{ Log of War Chest}_{i,t-1} \\ & + \sum_{k=1}^{9} \alpha_k \textit{ Election Year}_t + v_{i,t} \end{aligned}$$

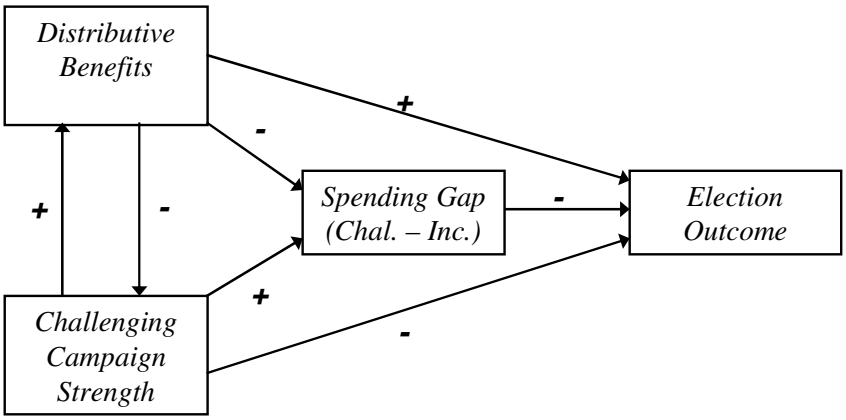

Figure 3.2
The Basic Vote Share System

Figure 3.3
The District Level System of Equations

[3.1] $Dist.\ Ben._{i,t} = \alpha_{1,0} + \gamma_{1,1}\ ICCS_{i,t}$

$+ \beta_{1,1}\ Vote\ Share_{i,t-1} + \beta_{1,2}\ Spending\ Gap_{i,t-1} + \beta_{1,3}\ Exp.\ Chal._{i,t-1}$

$+ \varphi_{1,1}\ Terms\ Served_{i,t} + \varphi_{1,2}\ Terms\ Served^{2}_{i,t} + \varphi_{1,3}\ Republican_{i,t} + \varphi_{1,4}\ Leader_{i,t}$

$+ \varphi_{1,5}\ Chair_{i,t} + \varphi_{1,6}\ RMM_{i,t} + \varphi_{1,7}\ Ideology_{i,t} + \varphi_{1,8}\ Party\ Unity_{i,t-1}$

$+ \delta_{1,1}\ Over\ 65_{i,t} + \delta_{1,2}\ Black_{i,t} + \delta_{1,3}\ School_{i,t} + \delta_{1,4}\ Farm_{i,t} + \delta_{1,5}\ Financial_{i,t}$

$+ \delta_{1,6}\ Foreign_{i,t} + \delta_{1,7}\ Government_{i,t} + \delta_{1,8}\ Military_{i,t} + \delta_{1,9}\ Rural_{i,t} + \delta_{1,10}\ Urban_{i,t}$

$+ \delta_{1,11}\ Unemployed_{i,t} + \delta_{1,12}\ Population_{i,t} + \delta_{1,13}\ Dem.\ Presidential\ Vote_{i,t}$
$+ \sum_{k=1}^{9} \alpha_{1,k}\ Election\ Year_t + \sum_{k=10}^{18} \alpha_{1,k}\ (Election\ Year_t \times Republican_{i,t}) + u_{i,t}$

[3.2] $ICCS_{i,t} = \alpha_{2,0} + \gamma_{2,1}\ Dist.\ Ben._{i,t} + \gamma_{2,2}\ (Dist.\ Ben._{i,t} \times Republican_{i,t})$

$+ \beta_{2,1}\ Vote\ Share_{i,t-1} + \beta_{2,2}\ Log\ of\ Inc.\ Spending_{i,t-1} + \beta_{2,3}\ Exp.\ Chal._{i,t-1}$

$+ \varphi_{2,1}\ Freshman_{i,t-1} + \varphi_{2,2}\ Republican_{i,t} + \varphi_{2,3}\ Leader_{i,t} + \varphi_{2,4}\ Chair_{i,t} + \varphi_{2,5}\ RMM_{i,t}$

$+ \varphi_{2,6}\ Ideological\ Extremity_{i,t} + \varphi_{2,7}\ Log\ of\ War\ Chest_{i,t-1}$
$+ \sum_{k=1}^{9} \alpha_{2,k}\ Election\ Year_t + v_{i,t}$

[3.3] $Spending\ Gap_{i,t} = \alpha_{3,0} + \gamma_{3,1}\ Dist.\ Ben._{i,t} + \gamma_{3,2}\ (Dist.\ Ben._{i,t} \times Republican_{i,t}) + \gamma_{3,3}\ ICCS_{i,t}$

$+ \beta_{3,1}\ Spending\ Gap_{i,t-1} + \varphi_{3,1}\ Republican_{i,t} + \delta_{3,1}\ Log\ of\ Median\ Income_{i,t}$
$+ \sum_{k=1}^{9} \alpha_{3,k}\ Election\ Year_t + r_{i,t}$

[3.4] $Vote\ Share_{i,t} = \alpha_{4,0} + \gamma_{4,1}\ Dist.\ Ben._{i,t} + \gamma_{4,2}\ (Dist.\ Ben._{i,t} \times Republican_{i,t}) + \gamma_{4,3}\ ICCS_{i,t}$

$+ \gamma_{4,4}\ Spending\ Gap_{i,t} + \beta_{4,1}\ Vote\ Share_{i,t-1} + \varphi_{4,1}\ Freshman_{i,t-1} + \varphi_{4,2}\ Republican_{i,t}$

$+ \varphi_{4,3}\ Ideological\ Extremity_{i,t} + \delta_{4,1}\ Pres.\ Vote_{i,t} + \zeta_{4,1}\ In\text{-}Party_{i,t}$

$+ \zeta_{4,2}\ (Pres.\ Approval_t \times In\text{-}Party_{i,t}) + \zeta_{4,3}\ (Midterm_t \times In\text{-}Party_{i,t})$

$+ \zeta_{4,4}\ (RDI_t \times In\text{-}Party_{i,t})$
$+ \sum_{k=1}^{9} \alpha_{4,k}\ Election\ Year_t + \varepsilon_{i,t}$

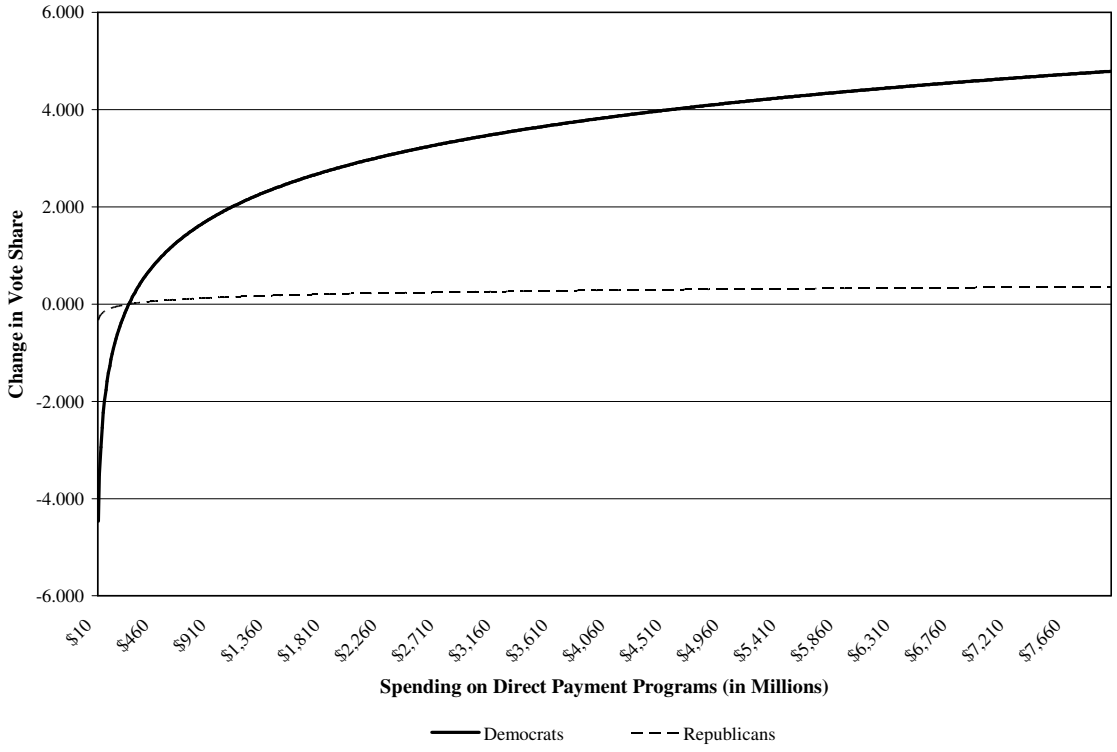

Figure 3.4
The Effects of Distributive Benefits on Incumbent Vote Share

Note: For ease of presentation, the horizontal axis is given in terms of spending. To calculate the measure of distributive benefits used in the analyses above, the log of each level of spending is subtracted by the log of the overall mean of spending ($251 million). The vertical axis is the *total* change in vote share for an increase in spending. As in Table 3.6, the change in vote share is a function of the effect of distributive benefits on the Index of Challenging Campaign Strength and the direct effect of distributive benefits on vote share.

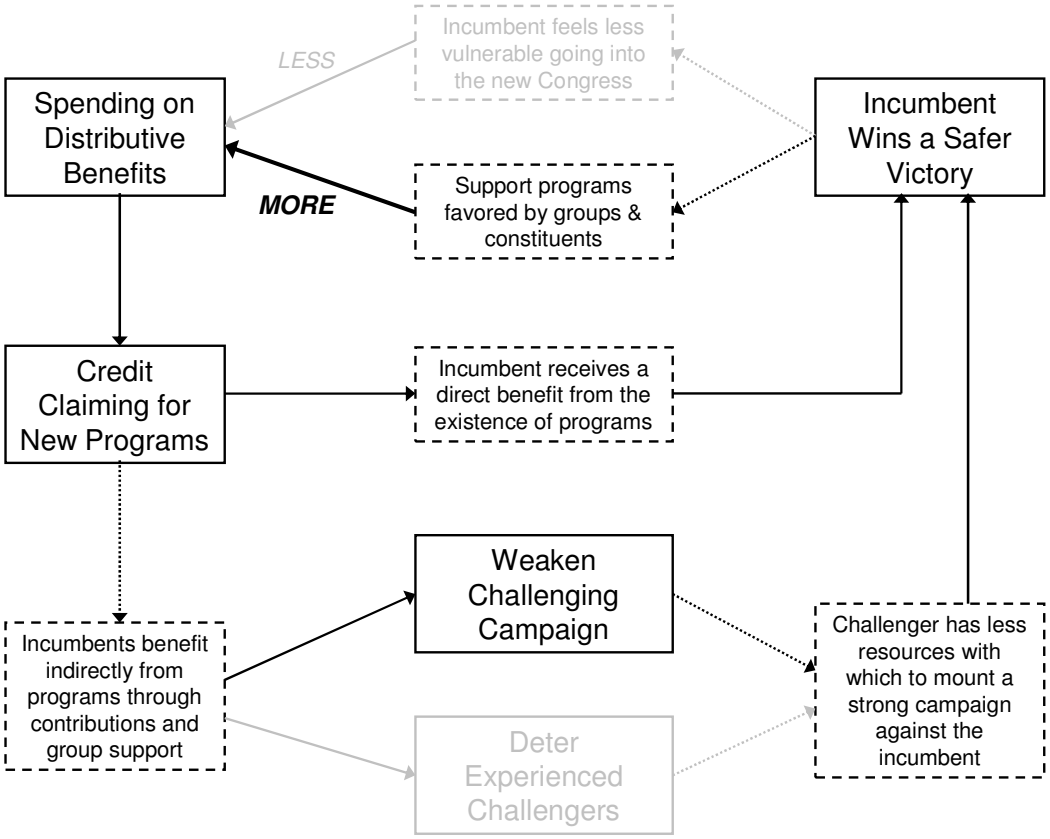

Figure 3.5
The Incumbency Advantage Cycle Revisited

Table 3.1 **Summary of Deterrence Hypotheses**	
Distributive Benefits Hypotheses	
Distributive Benefits	$\gamma_1 < 0$
Distributive Benefits for Republicans	$\gamma_2 > 0$
Vulnerability Hypotheses	
Incumbent Share of the Two-Party Vote in the Previous Election	$\beta_1 < 0$
Incumbent Spending in the Previous Election	$\beta_2 > 0$
Experienced Challenger in the Previous Election	$\beta_3 > 0$
Incumbent Characteristics Hypotheses	
Freshman Status in Previous Congress	$\varphi_1 > 0$
Party (Republican)	$\varphi_2 = 0$
Party Leader	$\varphi_3 < 0$
Committee Chairman	$\varphi_4 < 0$
Committee Ranking Minority Member	$\varphi_5 < 0$
Ideological Extremity	$\varphi_6 > 0$
Incumbent War Chest	$\varphi_7 < 0$
Election Year Effects Hypotheses	
1988 through 2004; for $0 < k < 10$	$\alpha_k = 0$

Table 3.2
Deterrence of Experienced Challengers

Variables	***Coef.***	***Std. Error***
Distributive Benefits		
Distributive Benefits	-0.036	0.030
Distributive Benefits x Republican	0.056	0.047
Previous Electoral Variables		
Inc. Share of 2-Party Vote (t-1)	-0.018*	0.003
Log of Inc. Spending (t-1)	0.051	0.050
Experienced Challenger (t-1)	0.364*	0.073
Incumbent Characteristics		
Freshman in Previous Congress	0.039	0.078
Republican	0.150#	0.078
Leadership	0.038	0.231
Chair	-0.125	0.141
Ranking Minority Member	0.021	0.125
Ideological Extremity	-0.638*	0.183
Log of War Chest	-0.018	0.016
Election Year Effects (1986 Excluded)		
1988	-0.142	0.119
1990	-0.154	0.121
1992	0.401*	0.114
1994	-0.188	0.135
1996	0.043	0.122
1998	0.145	0.127
2000	0.297*	0.126
2002	0.035	0.135
2004	0.257#	0.133
Intercept	-0.245	0.730
Model Statistics		
Number of Observations	3,085	
LR χ^2 (21)	208.74	
Prob. > χ^2	0.000	
PCP / PRE	0.851	0.011

* $p < 0.05$, # $p < 0.1$ (two-tailed)

Table 3.3
Eigenvalues and Factor Loadings for the
Index of Challenging Campaign Strength

Eigenvalues

Year	***1st Factor***	***2nd Factor***	***3rd Factor***	***4th Factor***	***5th Factor***
1984	3.201	0.858	0.401	0.315	0.224
1986	3.233	0.874	0.325	0.315	0.253
1988	3.087	0.897	0.371	0.348	0.297
1990	3.117	0.918	0.444	0.317	0.204
1992	3.155	0.776	0.489	0.396	0.183
1994	3.213	0.809	0.418	0.377	0.184
1996	3.246	0.817	0.464	0.286	0.187
1998	3.350	0.794	0.405	0.301	0.150
2000	3.342	0.801	0.460	0.272	0.124
2002	3.010	0.983	0.522	0.340	0.144
2004	3.042	0.855	0.617	0.351	0.136

Factor Loadings

Year	***Experienced Challenger***	***Log of Total Contributions***	***Log of Ind. Contributors***	***Log of Party Contributions***	***Log of PAC Contributions***
1984	0.454	0.884	0.874	0.857	0.846
1986	0.432	0.855	0.866	0.879	0.890
1988	0.397	0.849	0.877	0.846	0.850
1990	0.371	0.854	0.900	0.833	0.864
1992	0.567	0.849	0.906	0.822	0.785
1994	0.515	0.859	0.912	0.843	0.816
1996	0.507	0.867	0.912	0.793	0.882
1998	0.525	0.867	0.935	0.834	0.868
2000	0.524	0.868	0.942	0.793	0.893
2002	0.195	0.860	0.939	0.785	0.858
2004	0.454	0.831	0.937	0.729	0.858

Note: The final index is composed using the scores derived from the factor loadings above. All factor loadings were generated using principal components factor analyses.

Table 3.4
Summary of Hypotheses for All Equations

Variable	*Dist. Ben.*	*ICCS*	*Spend Gap*	*Vote Share*
Endogenous Variables (γ)				
Distributive Benefits		-	-	+
Distributive Benefits for Republicans		+	+	-
ICCS	+		+	-
Spending Gap				-
Previous Electoral Variables (β)				
Inc. Vote Share (t-1)	-	-		+
Spending Gap (t-1)	+		+	
Log of Inc. Spending (t-1)		+		
Challenger Experience (t-1)	+	+		
Incumbent Characteristics (φ)				
Freshman in Prev. Congress		+		-
Seniority / Seniority Squared	+ / +			
Republican	**0**	**0**	**0**	**0**
Leadership	+	-		
Party Unity Score (t-1)	+			
Chair	+	-		
Ranking Minority Member	+	-		
Ideology	-			
Ideological Extremity		+		-
Log of War Chest		-		
District Characteristics (δ)				
% Age 65	-			
% Black	+			
% Enrolled in K-12	+			
% Working on Farms	+			
% Working in Financial Serv.	+			
% Foreign Born	-			
% Working in Government	+			
% in Military	+			
% Living in Rural/Farm Areas	+			
% Living in Urban Areas	+			
% Unemployed	+			
Pop. per Sq. Mi. (000's)	+			
Log of Median Income			-	
Pro. Voting for Dem. Pres.	+			
Pro. Voting for Inc. Party Pres.				+
National Political Factors (ζ)				
Member of Pres. Party				**0**
Presidential Approval (by In-Party)				+
Midterm Election Year (by In-Party)				-
Per. Change in RDI (by In-Party)				+
Election Year Effects (α)				
1988 through 2004	**No Exp.**	**No Exp.**	**No Exp.**	**No Exp.**
1988 through 1994 for Republicans	-			
1996 through 2004 for Republicans	+			

Note: Cell entries are the expected direction of the coefficient for each variable. Blank cells are variables that are not included in a given equation. The Greek letters in parentheses refer to the coefficients for each set of variables in system (e.g. incumbent characteristics are signified by φ).

Table 3.5a
Results for the District Level System of Equations

Variables	*Dist. Ben.*	*ICCS*	*Spending Gap*	*Vote*
Endogenous Variables				
Distributive Benefits		-0.078*	-0.032	1.295*
		(0.033)	(0.033)	(0.263)
Distributive Benefits		0.129*	0.048	-1.134*
x Republican		(0.040)	(0.040)	(0.306)
ICCS	-0.004		0.930*	-8.803*
	(0.095)		(0.048)	(0.690)
Spending Gap				0.105
				(0.332)
Previous Electoral Variables				
Inc. Share of 2-Party Vote (t-1)	0.006*	-0.024*		0.055*
	(0.003)	(0.002)		(0.017)
Spending Gap (t-1)	0.052*		0.180*	
	(0.020)		(0.016)	
Log of Inc. Spending (t-1)		0.125*		
		(0.028)		
Experienced Challenger (t-1)	-0.082	0.134*		
	(0.061)	(0.048)		
Incumbent Characteristics				
Freshman in Previous		0.000		0.342
Congress		(0.048)		(0.344)
Seniority	-0.036*			
	(0.017)			
Seniority Squared	0.002*			
	(0.001)			
Republican	-0.018	0.239*	-0.075	-0.827*
	(0.127)	(0.052)	(0.055)	(0.405)
Leadership	-0.445*	0.129		
	(0.170)	(0.136)		
Party Unity Score (t-1)	0.001			
	(0.002)			
Chair	-0.003	-0.088		
	(0.105)	(0.076)		
Ranking Minority Member	-0.087	-0.121		
	(0.103)	(0.074)		
Ideology	0.175			
	(0.132)			
Ideological Extremity		-0.540*		-2.304*
		(0.108)		(0.967)
Log of War Chest		-0.035*		
		(0.010)		
Model Statistics				
Number of Observations	2,737	2,737	2,737	2,737
F-Statistic	28.79	30.04	128.53	134.96
Prob. > F	0.000	0.000	0.000	0.000
R^2	0.315	0.183	0.666	0.522

* $p < 0.05$, # $p < 0.1$ (two-tailed)
Note: The results for the system are continued in Table 3.5b and Table 3.5c. Columns headers identify each equation. Cell entries are coefficients with standard errors are in parentheses. Shaded cells are good instruments, as explained in the text. Additional notes are given in Table 3.5c.

Table 3.5b
Results Continued: District Characteristics and National Political Factors

Variables	*Dist. Ben.*	*ICCS*	*Spending Gap*	*Vote*
District Characteristics				
% Over Age 64	-0.020*			
	(0.009)			
% Black	-0.003#			
	(0.002)			
% Enrolled in K-12	-0.092*			
	(0.013)			
% Working on Farm	0.081*			
	(0.039)			
% Working in Financial	0.099*			
Services	(0.030)			
% Foreign Born	-0.014*			
	(0.004)			
% Government Employees	0.277*			
	(0.012)			
% in Military	-0.059*			
	(0.019)			
% Living in Rural / Farm	0.031*			
Areas	(0.015)			
% Living in Urban Areas	0.001			
	(0.001)			
% Unemployed	0.274*			
	(0.033)			
Population per Square Mile	-0.001			
(000's)	(0.004)			
Log of Median Income			-0.332*	
			(0.079)	
Proportion Voting for the	1.380*			
Dem. Presidential Candidate	(0.323)			
Proportion Voting for the Pres.				16.591*
Candidate of the Inc. Party				(2.309)
National Political Factors				
Inc. is from the President's				-0.725
Party (In-Party)				(0.494)
Presidential Approval				0.069*
x In-Party				(0.022)
Midterm Election Year				-1.854*
x In-Party				(0.389)
Percent Change in RDI				0.216*
x In-Party				(0.107)

* $p < 0.05$, # $p < 0.1$ (two-tailed)

Table 3.5c
Results Continued: Year and Partisan Effects

Variables	*Dist. Ben.*	*ICCS*	*Spend*	*Vote*
Election Year Effects (1986 Excluded)				
1988	-0.194#	0.078	-0.204*	0.318
	(0.111)	(0.067)	(0.067)	(0.497)
1990	0.290*	0.143*	-0.487*	-4.071*
	(0.110)	(0.069)	(0.069)	(0.545)
1992	0.102	0.153*	-0.056	-4.811*
	(0.121)	(0.070)	(0.071)	(0.527)
1994	0.014	-0.115	0.279*	-3.995*
	(0.147)	(0.078)	(0.088)	(0.559)
1996	0.075	-0.075	0.245*	-3.012*
	(0.146)	(0.070)	(0.083)	(0.497)
1998	-0.038	-0.130#	-0.209*	-1.860*
	(0.155)	(0.075)	(0.085)	(0.540)
2000	0.378*	0.070	-0.224*	-0.354
	(0.142)	(0.077)	(0.093)	(0.559)
2002	0.550*	0.037	-0.767*	-0.335
	(0.144)	(0.079)	(0.094)	(0.649)
2004	0.747*	0.022	-0.402*	-1.494*
	(0.147)	(0.082)	(0.098)	(0.614)
Interactions with Party				
1988 x Republican	0.040			
	(0.166)			
1990 x Republican	0.074			
	(0.170)			
1992 x Republican	-0.031			
	(0.176)			
1994 x Republican	-0.384*			
	(0.193)			
1996 x Republican	-0.374*			
	(0.173)			
1998 x Republican	-0.323#			
	(0.181)			
2000 x Republican	-0.403*			
	(0.179)			
2002 x Republican	-0.738*			
	(0.178)			
2004 x Republican	-0.668*			
	(0.183)			
Intercept	-3.232*	0.381	1.771*	56.720*
	(0.533)	(0.421)	(0.784)	(2.016)

* $p < 0.05$, # $p < 0.1$ (two-tailed)

Note: The system was estimated using 2SLS to ensure consistent estimates. The same specifications were also estimated using OLS and 3SLS and Hausman tests were used to examine the existence of bias in the coefficients. The χ^2 statistic for the test between the 2SLS and OLS estimates was 112.26 ($p = 0.015$). The χ^2 statistic for the test between 2SLS and 3SLS was 243.62 ($p < 0.001$). These results suggest first that equation-by-equation OLS would yield biased and inconsistent estimates. Second, there are also problems with the more efficient 3SLS estimates, which require an error-free specification of every equation in the system.

Table 3.6
The Direct and Indirect Effects of Distributive Benefits

Spending on DP Programs	*Deviation from Mean*	*Δ ICCS (Direct)*	*Δ Spend Gap (ICCS)*	*Δ Vote Share (Direct)*	*Δ Vote Share (ICCS)*	*Δ Vote Share (Total)*
Democrats						
$ 206	-7.11	0.55	0.52	-9.20	-0.63	**-9.83**
$ 125,705	-0.69	0.05	0.05	-0.90	-0.06	**-0.96**
$ 251,205	0.00	0.00	0.00	0.00	0.00	**0.00**
$4,137,043	2.80	-0.22	-0.20	3.63	0.25	**3.88**
$8,022,881	3.46	-0.27	-0.25	4.49	0.31	**4.79**
Republicans						
$ 206	-7.11	-0.36	-0.34	-1.14	0.41	**-0.73**
$ 125,705	-0.69	-0.04	-0.03	-0.11	0.04	**-0.07**
$ 251,205	0.00	0.00	0.00	0.00	0.00	**0.00**
$4,137,043	2.80	0.14	0.13	0.45	-0.16	**0.29**
$8,022,881	3.46	0.18	0.16	0.56	-0.20	**0.36**

Note: The first column presents an amount of spending on direct payment programs in thousands of constant 2000 dollars. The second column, which represents the measure of distributive benefits used in the analyses, is the difference of the log of the value from the first column from the log of the overall mean of spending on direct payment programs, $251 million. Note that the overall mean is used so that general differences between Democrats and Republicans can be analyzed without having to refer to specific election years. Parenthetical references in the column headings refer to the path through which distributive benefits have an effect. Specifically, distributive benefits have a direct effect on the ICCS and the incumbent's share of the two-party vote. Distributive benefits also affect the spending gap, but only through the ICCS. Distributive benefits also have an effect on vote share through the ICCS. The final column is the total effect of distributive benefits on vote share, the sum of the direct effect and the effect through the ICCS.

Chapter 4
A Theory of Individual Level Heterogeneity

In the first part of this dissertation, I developed a framework with which to consider distributive benefits and empirically assessed their electoral effects at the district level. Distributive benefits were found to have direct effect on the vote share of the incumbent and an indirect effect on election outcomes through its deterrent capabilities. Yet the results were mixed; the key finding from Chapter 3 is that the electoral benefits received by Democrats do not accrue to Republicans. Republicans are found to limit their share of distributive benefits and when they secure more than average benefits receive a small increase in their vote share offset by the stronger challenger they face in the election. The explanation put forward at the end of Chapter 3 relates to the fiscal expectations placed on Republicans. Republicans are supposed to represent more conservative interests, including limiting government spending. Thus increasing her share of distributive benefits opens the Republican incumbent to a criticism that could resonate with conservative voters. In this second part of the dissertation, these suppositions are modeled and tested. By the conclusion of Chapter 6, I will have presented the following:

- A theoretical argument grounded in the heterogeneous preferences of individuals;
- An empirical model, hypotheses, and results indicating that distributive benefits can have a substantial effect on the voting decisions of particular

individuals and this effect is conditional on the characteristics of ideology and political awareness;

- An analysis of the vehicles through which individuals become more aware of distributive politics.

The remainder of Chapter 4 is devoted to the first entry on the list above: detailing a theory of individual level behavior. The ideas presented below are in no way novel. Since the American Voter (Campbell, et al. 1960) we have known that preferences can have a strong effect on voting behavior. The possibility that ideology and political awareness condition voter responses to distributive benefits is, however, a new development. The prevailing assumption, again, is that rational individuals prefer more benefits to fewer benefits; thus distributive benefits have developed as a major source of incumbency advantage. This rationale, however, gives little guidance when trying to explain the empirical results that Republicans tend to seek fewer benefits and could suffer electorally when they overspend on their districts. Below, I begin with a discussion of how voters have been treated by the distributive benefits literature and continue discussing the two individual level factors that I believe condition responses to distributive spending. Again, these are ideology, which in this dissertation is taken to mean a general set of related preferences (Converse 1964), and political awareness, which is necessary for voters to be able to respond and respond "correctly" to distributive benefits (Zaller 1992).

Distributive Benefits and Voters

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. Specifically, 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. The assumption, again, has strong grounding in rational choice theories of behavior. Preferring more projects to less is easily justifiable on economic grounds; economically, receiving $1 is always better than $0.

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, all of which have been discussed previously; these are Stein and Bickers (1994a, 1995), which examines 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 1994a, 1995) and the probability of voting for the incumbent (Stein and Bickers 1994a,

1995; Sellers 1997). Neither work, however, conditions the effect of benefits on characteristics of the individual. Both do address other aspects of the effects of distributive benefits that relate to this dissertation. Stein and Bickers (1994a, 1995) include a measure of awareness from the 1988 National Election Study.[1] The question does not directly reference distributive benefits, but does address the local concerns of constituents. When discussing awareness below, the point will be made that in order for benefits to have an effect, voters must have some knowledge of their existence. What is lacking, however, is a conditioning of the effect of benefits by awareness. Sellers (1997) does condition the effect of benefits, but by an incumbent characteristic. This work relates most to what was reported in Chapters 2 and 3. 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. This is perhaps a more elegant argument than the partisan one made earlier in this dissertation. Yet the party distinctions cannot be ignored. It is no coincidence that most of the fiscally conservative representatives are Republicans. Referring to my original point, there is no conditioning of the effect of pork on individual characteristics. Why, for example, should, conservatism in the representative, but not the voter lead to a decreasing impact of distributive benefits?

[1] The question is worded as follows: "*Do you happen to remember anything special representative* (Name) *has done for the people in* (his/her) *district while* (he/she) *has been in Congress?*"

Individual Characteristics

Leading from this, I propose that benefits are not just conditional on characteristics of the representative; individuals, based on their ideological identification *and* their level of political awareness will respond differently to distributive spending. The closest that previous work has come to these ideas is the inclusion of a "pork awareness" question, which is significant. It is also important to note that these two factors do not exert separate influences over the individual. Ideology and awareness contribute differently to the expected responses, but both are necessary to understand how and why certain individual might react differently to distributive benefits. Below, I discuss the nature of ideology and argue why ideological differences should be expected. Next, the concept of awareness is addressed and specifically why awareness is necessary to make sense of the conditional relationships between ideology and distributive benefits.

Ideology

Despite "growing up" in the same traditions and history, there are strong differences in the meanings of "conservative" and "liberal" in America. 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; McClosky and Zaller 1984; Feldman 1988).

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 the status quo of 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 in the amount of government intervention (Nisbet 1984).

We should expect, therefore, liberals and conservatives 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. Even in the development of an

identification, 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 Zaller 1992; Skitka and Tetlock 1993; Feldman and Steenbergen 2001[2]). What then should we expect the effects of ideology to be on preferences for distributive benefits? Using Feldman and Zaller (1992) as a guide, we might expect conservatives, given their opposition to government spending, to universally oppose the growth of distributive programs. Conservatives appear more consistent in their opposition to social-welfare spending than liberals due in large part to the emphasis of individualism. These values, however, may not lead to the same conclusions when considering the pork barrel. Opposition to social-welfare programs is also based in the belief that individuals who violate social norms should not be rewarded (Skitka and Tetlock 1993); basically, an individual is responsible for their place in life and it is not the role of government to correct the failings of individuals. Individualism, therefore, is what leads to consistency in conservative opinions and inconsistency in liberal opinions; while not primary, liberals do consider individualism an important value.

[2] Feldman and Steenbergen (2001) note the differences between egalitarianism and humanitarianism as value orientations. It is egalitarianism that pushes individuals towards preferring sweeping economic intervention, while those for whom humanitarian values are more important prefer less intrusive programs targeting the needy.

One very important note to make here is that political awareness plays an important role in determining consistency of opinions. The conclusions drawn in all of the research discussed above relies on individuals themselves being able to form and understand ideological positions, which only occurs in the more sophisticated. This distinction is of the utmost importance for reactions to distributive spending because of the very nature of these programs. The discussion of values is meant to highlight that "ideology" is not necessarily a unidimensional construct and liberals and conservatives may need to be considered differently and not just different ends of the same continuum. While values undoubtedly play less of a role in judgments regarding distributive benefits, they are important in that they contribute to general ideological stances that in turn guide individuals towards preferences for the pork barrel.

Distributive spending issues have much less of an emphasis on individualism, thus it is unclear how values should moderate ideological preferences for distributive spending. Absent individualism, liberals may be more consistent in their preferences for government growth and intervention; without pitting these preferences against even a secondary value of individualism, it becomes easier to state and act upon preferences for increased government spending. Conservatives may also have the same consistency, basing their preferences mainly in opposition to government expansion. Preferences for distributive spending, however, carry with them a persuasive economic argument. If self-interest is important, individuals should be inclined to prefer distributive programs. These programs are the product of representatives securing spending for the good of their districts. As a resident of a district, even a conservative will feel the pressures of economic self-interest. It follows that, as opposed to social-welfare spending, liberals

should be more consistent in their preferences for in-district spending while conservatives become less consistent, pitting their preferences for limited government against their economic self-interest. As with preferences for social-welfare spending, consistency, and essentially how liberals and conservatives respond to distributive benefits, should be moderated by political awareness.

As a concrete example of this, consider again the district level results from the previous chapter. It was found that Democrats benefit far more from the pork barrel than Republicans and it was suggested that Republican supporters may abandon their preferred candidates when they overspend. In one way, the results point to strong activity among liberals, given that it is Democratic incumbents that reap the large rewards. Again, this is the less interesting side of the story. Liberals, who would not ideologically opposed to increasing the size of government, should be even happier that the increases are benefiting them more directly through increased distributive spending in their districts. It is in the "inaction," or the lack of benefits accruing to Republican incumbents, that the story becomes both harder and more rewarding to explain. The key question is not what makes a liberal reward a Democrat for obtaining distributive benefits. It is what makes a conservative violate their economic self-interest and not reward a Republican for doing the same. This has been discussed in terms of ideology itself, but ideology is not sufficient. Several times I have cautioned that the differential results observed between conservatives and liberals require sophistication among the individuals. Given its importance to the formulation of the *ideological* preferences required by my conjectures, I now turn the discussion to political awareness.

Political Awareness

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. In relation to policy preferences, awareness serves two necessary functions. 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 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.

Second, 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 the liberal-conservative continuum to structure their beliefs on a wide variety of issue areas (Converse 1964; Jacoby 1986, 1991). Insofar as value orientations underlie ideological identification, political awareness also strengthens the relationship between values and preferences (Goren 2001, 2004).

Relating awareness to the pork barrel, 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 projects 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 pork flowing into the district. Given that specific information on the pork barrel is not usually salient, awareness should significantly condition the impact of distributive spending on political attitudes and behavior.

How then does ideology affect this relationship? Modern conservatism develops as a response to New Deal Liberalism, which emphasizes the programmatic expansion of the federal government to alleviate economic and social burdens. Given the emphasis of conservatism on limited government, we would generally expect that conservatives would react differently to increases in distributive spending than liberals. Specifically, conservatives should be less likely to vote for incumbents from districts in which there is

a great deal of spending while liberals should be more likely to vote for incumbents in those same districts. Awareness should amplify the effects of ideology; highly aware conservatives should be less likely to vote for spendthrift incumbents than low awareness conservatives with the opposite true of liberals. An interesting wrinkle in these expectations, however, is presented in the form of existing theories of distributive benefits. As previously noted, the assumption that everyone prefers more in-district spending to less is firmly rooted in rational choice theory. Considering benefits in my district, "more" increases my utility. Increasing benefits are an economic good to most, which causes more problems for conservatives than liberals. Liberals, regardless of awareness, should reward more spending on ideological grounds. Even at low levels of awareness and a diminished ability to reason along ideological lines, one can easily decide that more is better. This may also be true of low awareness conservatives, who would not make the connections between in-district projects leadings to more spending and ideological preferences for less spending. Thus awareness becomes a necessary component in that it can only be the aware, among conservatives, that are able to act against their economic self interest in favor of the ideological ideal.

Information Effects

Throughout this discussion is the assumption that awareness is related to increased knowledge of distributive politics. Where, however, would this information come from? Information about government spending generally, or even in specific districts, can come from a variety of sources. The media, for example, reports on government spending, although the information is likely to be negative. Media reports on

distributive spending often refer to terms like "pork barrel" or "earmarks," which connote wasteful spending by the government. Information can also be obtained from interest groups. Many groups lobby for distributive programs and disseminate information on incumbent activities, especially during campaigns. There are also groups that promote fiscal responsibility and supply information (mostly negative) about specific representatives and senators (e.g. Citizens against Government Waste and the National Taxpayers Union). Arguably, however, the best source of information regarding the incumbent's distributive activities is likely to be the incumbent herself. Through campaign advertising, mass mailings, or other communication with constituents, incumbents are usually more than willing to claim credit for district service.

If the primary source of information is through credit claiming, it may be that ideology is unnecessary. Given the monetary advantage most incumbents have, it is unlikely that challengers and their supporters will be able to effectively counter credit claiming by the incumbent. This uniformity in the messages on distributive benefits, which would be pro-incumbent, should lead all voters who receive the message to evaluate the incumbent more favorably and increase the probability that an individual votes for the incumbent (Zaller 1992). This points to an increased role of awareness by itself. If awareness increases the likelihood of receiving political messages, assuming information is one-sided, increasing awareness should accentuate the effects of distributive benefits. Ideological identification should have a small or nonexistent role in attenuating this relationship. Is this really true of information on government spending? It may not be; some empirical research has demonstrated that conservatives state opposition to spending *regardless of how the issue of spending is framed* (Jacoby 2000).

Relating this credit claiming, even if the incumbent presents distributive spending in a positive manner, the highly aware conservative should be able to see past the benefit and recognize the spending.

Expectations

From the discussion above, we can derive several expectations for the effects of distributive benefits on voting, varying ideology and levels of awareness. What follow are six general expectations for the effects of benefits; specific hypotheses regarding empirical models are presented in the following chapter. With respect to the assumptions, as alluded to above, it is assumed that as distributive benefits increase, the amount of credit claiming by the representative also increases. This assumption is directly modeled in Chapter 6 and thus will not be an assumption, but cannot be modeled in Chapter 5. It is further assumed that most of the information in the district about distributive benefits is positive—that is most of the information is credit claiming that references benefits in a positive manner. The result is an information imbalance in favor of the incumbent with respect to in-district distributive spending. This is also tested in Chapter 6.

High Awareness Conservatives: Highly aware conservative identifiers are expected to be both more knowledgeable about the existence of benefits and, more importantly, since knowledge could also be obtained from credit claiming, be able to act in an ideologically consistent manner with respect to distributive

benefits. Thus as distributive benefits increase, highly aware conservatives will be less likely to vote for the incumbent.

Low Awareness Conservatives: Low awareness could manifest itself in null findings for distributive benefits; low awareness implies a lower likelihood of being knowledgeable about benefits. Yet, the knowledge gap between high and low awareness voters could be narrowed by credit claiming. To the extent that the low awareness conservative is receptive to this information, (lack of) awareness will manifest itself in ideological inconsistency causing an increase in the likelihood of voting for the incumbent as distributive benefits increase.

It is argued that moderates do not have strong preferences for or against government spending. Given weak preferences, moderates are likely to respond positively either to credit claiming on the part of the incumbent or knowledge of distributive programs obtained from other sources. For moderates, ideological consistency is not an issue. Thus the only function of political awareness for moderates is to make them more receptive to credit claiming be the representative or other information on distributive programs in the district

High Awareness Moderates: High awareness moderates are more likely to receive and understand political information. Not having an ideological preference regarding the pork barrel, the economic assumption holds—more benefits are

better than fewer benefits. Thus as distributive benefits increase, a high awareness moderate is more likely to vote for the incumbent.

Low Awareness Moderates: At low levels of awareness, moderates, like other ideological groups, should be less receptive of political information. To the extent that low awareness moderates do receive credit claiming information, they should be more likely to vote for the incumbent as distributive benefits increase. The effect of benefits, however, should not be as large as for high awareness moderates.

The expectations for liberals are not the exact opposite of the expectations for conservatives. It was discussed above that liberals should generally prefer more government spending to less. The emphasis of liberalism, however, may be more on the social ramifications of distributive spending than the fiscal ramifications, as was observed with social welfare spending (Feldman and Zaller 1992). It cannot be said that liberals prefer more spending in all governmental situations—even liberals tend to express preferences for smaller deficits. What can be said is that, in general, liberals should not prefer less spending in their districts. Even without an ideological justification for such spending, preferences for more can be justified through rational choice arguments. Put another way, distributive spending may be difficult to defend with value-based arguments. Without, however, a way to tie distributive spending to fundamentals of modern liberalism, preferences for more spending on the part of liberals are still likely to exist. Just as predicted for moderates, it may simply be that preferring more benefits to

less is the standing preference and only aware conservatives have a good reason to change that preference.

High Awareness Liberals: Given that liberalism tends to prefer growth of government and in-district benefits can be preferred on a rational basis, as distributive benefits increase, high awareness liberals will be more likely to vote for the incumbent.

Low Awareness Liberals: Low awareness liberals, like low awareness moderates and conservatives, will probably be exposed to less information. To the extent that credit claiming can substitute for awareness, increasing distributive benefits should cause an increase in the likelihood that low awareness liberals vote for the incumbent. As with moderates, this effect should be weaker than for high awareness liberals.

Conclusion

Given the framework developed above, the next two chapters will empirically examine the extent to which ideology and awareness condition the effects of distributive spending. Chapter 5 presents a general examination; the analyses focus on these conditional effects between 1984 and 2004. The use of eleven elections worth of National Election Studies data will necessitate two assumptions. First, that representatives claim credit for the spending they procure. This assumption is realistic in that distributive programs are seen as an important source of incumbency advantage.

How can distributive spending advantage incumbents unless the existence of these benefits is advertised to the district? Second, it is assumed that increasing awareness signals increasing knowledge of distributive benefits. It is not required that voters are able to cite how much spending is done on specific programs—just as voters need not know the unemployment rate, gross domestic product, or other indicators to have the economy affect their votes. Some may argue that awareness is not enough to connect voters to knowledge about in-district spending and this assumption relies very heavily on the first. To answer these potential critiques, Chapter 6 specifically examines the 2002 House elections. The emphases of the analyses presented therein are on the conditioning effects of ideology and awareness *and* how campaign advertisements, a major source of information on incumbent activities, affect the conditional relationships.

Chapter 5
The Effects of Distributive Benefits on Voting Behavior

In Chapter 4, I detailed a theory of individual level reactions to information on distributive benefits. Again, there are several reasons why an individual level analysis is necessary to understanding the effects distributive benefits have on elections. First, as noted several times throughout this dissertation, the district level findings are often weak. A weak, albeit positive, relationship between benefits and election outcomes suggests one of two possibilities. First, the population relationship may in fact be weak; in some districts, benefits have a strong effect and in others the effect is weak or nonexistent. Thus, in the aggregate we would observe a weak relationship. This would suggest district level heterogeneity in the effects of benefits, an issue addressed in Chapters 2 and 3. Chapter 2 reported that Republicans, after they gained the majority in the House, significantly limited the amount of distributive benefits they secure. Chapter 3 showed that a possible reason for this is that Republicans do not reap the same electoral rewards as Democrats in the arena of distributive spending. What remains, however, is the question of why Republicans do not see the increases in vote share that Democrats do. A possible answer is one of issue ownership. Republicans, as a party, have a reputation for preferring limited government, including government spending. It may be then that all voters in Republican districts fail to reward incumbents who aggressively seek pork barrel projects.

The second possibility, which I argue is strongly related to the first, is that rather than *just* district level heterogeneity there is also individual level heterogeneity in the

effects of distributive benefits. Specifically, voters, based on their ideology, have different preferences for the pork barrel. Although it should only be the politically aware that are able to formulate ideologically consistent preferences, be knowledgeable about levels of distributive spending, and behave (vote) accordingly. Beyond district level heterogeneity, varying preferences at the individual level may also produce the weak results observed in previous studies of the electoral effects of distributive benefits.[1] Related to district level heterogeneity, there may be something about voters in Republican districts that make them more or less likely to consider how much spending the Republican incumbent has secured for the district. Specifically, voters in Republican districts may be more conservative. Compared to Democratic districts, there would be a higher proportion of aware individuals in Republican districts that oppose increased government spending. Furthermore, these voters might be more likely to vote against a Republican incumbent, whom would be expected to not participate in the growth of the federal budget. The remainder of this chapter will empirically examine these ideas and the theory developed in the last: that individual level characteristics condition voter responses to distributive benefits.

Modeling Individual Level Heterogeneity

In Chapter 3, district level models of election outcomes were developed and estimated. This chapter, however, requires important differences in the modeling strategy

[1] Again, I recognize that even the politically aware may not be knowledgeable about a policy domain as complicated and opaque as distributive spending. In Chapter 4, I suggested that credit claiming and specifically campaign advertising was one of the mechanisms through which voters, particularly aware voters, become knowledgeable about the general levels of distributive spending in their districts. Thus campaign advertising becomes an additional factor that conditions voter responses to distributive spending. This possibility is examined in great detail in Chapter 6.

employed, all addressing the structure of the data. First, the outcome of interest is an individual level variable: whether or not an individual voted for the incumbent. More importantly, the main independent variable is spending on distributive benefits, a district level variable. Considering these two factors, we already have individuals nested within districts. A similar situation was addressed in Chapters 2 and 3; there the nesting was districts within election years and the models used fixed effects for the election years. This option is not available for these analyses. Fixed effects for districts would mean that district level variables could not be included in the analysis. To the extent that there will be important district level factors that are not specified in the models to follow, a random effects model would be more appropriate. However, the issue of time has been demonstrated to be important—that is there was significant variation in outcomes by election year as estimated by the fixed effects. Nesting districts within time yields a two-level structure, one that is relatively easy to estimate using either fixed or random effects models. The following models necessarily add a third level of analysis: individuals nested within districts nested within time. To include factors at all three levels might require the estimation of a model that can account for district and time level heterogeneity in the response, whether or not individuals voted for the incumbent.

The most pertinent question, however, is *how* heterogeneity at each level should be modeled. Several models employing various alternative specifications were estimated and tests were conducted to determine which specification was the most appropriate. Models were judged on two criteria: how well they accounted for observed and unobserved heterogeneity at the district and election year levels and how parsimonious they were. Another issue that needed to be addressed was how to categorize units at each

level. The individual level is easy; units are simply voters who responded to the National Election Studies. The year level is likewise simple; congressional election years are units. The district level is where complications can arise. Are districts units? Put another way, can we consider districts similar to panel observations—the same districts are measured at repeated points in time? The answer is a qualified yes; "districts," despite the fact that they change both in their boundaries and their existence can be considered like individuals in panel data, much in the same way states are often treated. However, this implies a specification that accounts for variation over time—districts *nested* within years. An alternative specification, one that does not require the direct modeling of time-level heterogeneity, is to have individuals nested within district-years. That is the first district of Alabama in 1990 is a different district than the first district of Alabama in 1992. Ultimately, the specification used is a random effects logit with individuals nested within district-years with one year level variable included and no other time level variation modeled. A full discussion of the various models estimated and the tests conducted between models is provided in Appendix 2. In short, the following models were estimated an evaluated:

- Pooled logit: no nesting structure;
- Fixed effects logit: district and year fixed effects;
- Random effects logit: district-year random effects;
- Random effects logit: district-year random effects with year fixed effects (dropping the time level variable);
- 3-level random intercept: random intercepts for the district and year levels;

- 3-level random coefficient: random intercepts as above and random variation in slopes of interest (the interactions of ideology and awareness at the district level and the interactions of ideology, awareness, and distributive benefits at the election year level).[2]

To summarize the findings discussed in Appendix 2, no significant unobserved heterogeneity was discovered in the slopes. Likewise, there was no significant unobserved heterogeneity in the response at the year level (intercepts did not vary randomly by year). Even in the random effects logit model, once accounting for district-year heterogeneity, there was no leftover variance explained by the inclusion of year fixed effects. There was significant district-year heterogeneity and the random effects models yielded consistent results, as tested against the fixed effects models. Finally, there was significant improvement in the random effects logit model over the pooled logit.

Why Not Use Fixed Effects for Election Years Anyway?

The simple answer to the above question is the partisanship of the president is expected to condition the effects of other factors (economic evaluations) and is therefore included in the model. In the district level models, economic indicators were coded by "in party," that is coded in such a way that representatives from the party of the president would benefit from increases in the variables. Seemingly more appropriate models would have either dropped the "in party" variable and interacted the economic indicators with the year fixed effects or included the "in party" variable capturing year heterogeneity with a random coefficient and a random slope for the economic indicator.

[2] The results of all estimated models are available upon request.

In the first method, this would have added twenty-seven additional terms.[3] In the second, there would be the difficulty of estimating random parameters in the simultaneous equation framework. Neither of these alternatives seemed preferable to the method chosen, which has been used in previous studies (e.g. Canes-Wrone, Brady, and Cogan 2002).

Measuring Ideology and Awareness

The dependent variable in the following analyses is dichotomous, scored 1 if an individual voted for the incumbent, 0 if an individual voted against the incumbent. The main independent variable is distributive spending, measured the same as in previous chapters, the difference of the log of real, new spending on direct payment programs in the district and the log of the chamber mean of real, new spending on direct payment programs. The effects of distributive benefits on voting, however, are expected to be conditioned by the ideology and political awareness of the individual. It is important, therefore, to address how these concepts will be measured.

Looking first at ideology, all of the individual level variables used in this chapter and the next are drawn from survey data; the National Election Studies (NES) are used in this chapter. Ideology is measured simply using the self-identification of the respondent. 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 in Chapter 4, a unidimensional measure ignores the potential differences between conservatives and liberals in their

[3] There would be ten separate slopes for presidential approval, real disposable income, and midterm elections.

responses to various issues, including distributive spending. Specifically, some research has demonstrated that conservatives and liberals do not respond in equally opposite ways to a variety of political stimuli (e.g. Feldman and Zaller (1992) looking at preferences for social welfare spending). 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 either conservative or extremely conservative.[4] Given the emphasis of conservatism on government spending, it is expected that more significant results will be found for conservatives.

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.[5] Such a measure is used in Chapter 6, but cannot be used here. A good awareness measure based solely on political knowledge 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 of knowledge items, I use twenty-five questions gauging three of the factors identified by Zaller (1992, 334) that contribute to awareness: information (knowledge), activity, and interest.[6] Table 5.1 lists the questions and the years in which each question was asked.

[Table 5.1 here]

[4] The ideology measure is in fact a three-category dummy variable. *Liberal* is scored 1 for liberals, 0 otherwise. *Conservative* is scored 1 for conservatives, 0 otherwise. Moderates, those identifying are moderate or leaning liberal or conservative, are the excluded category.

[5] 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 (Sullivan, Piereson, and Marcus 1978; Smith 1980; Cassel 1984).

[6] Note that no individual year contains all twenty-five items. The number of items varies from survey to survey as seen in Table 5.1.

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 roughly 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 5.1, 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, similar to the problems discussed in Chapter 3 with respect to the Index of Challenging Campaign Strength, a separate model is estimated for each year. After the models were estimated, each of the 20,258 respondents was placed on the latent awareness dimension based on her responses.[7] Figures 5.1 and 5.2 present distributions of awareness for the entire sample and separated by ideology.[8]

[Figures 5.1 and 5.2 here]

Given its construction, the awareness scale has a roughly normal distribution, although there is a heavier concentration at the tails than we would expect. Each set of

[7] The final number of observations used in the analyses is not 20,258. Clearly not every respondent voted for a representative. Also, the analyses, like those conducted in Chapter 3, restrict the sample to elections in which an incumbent ran against a major party candidate.

[8] Appendix 2 also has additional details for the item response models including parameter estimates and total information curves for each year.

histograms also plots a normal density function for the purposes of comparison. The roughly normal distribution clearly exists for the entire sample, but also within each category of ideology as can be seen in Figure 5.2. One note to make is that ideological identification seems to be correlated with awareness; both liberals and conservatives appear to have a higher mean than moderates. One would expect that, as we observe with partisanship, propensity for ideological identification at all would be related at least to increased interest. The final measure used in analyses in this chapter is the placement of respondents on the awareness scale, with the scale bounded at -5 and 5.

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). The data included are limited in a similar manner as in previous chapters. Only respondents 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 difference of the log of real, new spending on direct payment programs and the log of the chamber mean of spending on these programs. 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 5.3 and 5.4; these variables are described in the next sub-sections.

[Figure 5.3 here]

Despite the random effects specification, I borrow from the hierarchical modeling literature to present the model. Figure 5.3 clearly distinguishes at which levels variables

are being measured. Bold coefficients refer to variables that are interacted with variables at higher levels. For example, in the full model, the party identification of the respondent (π_{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 β_{61}, the effect of the party interaction, what we can call party congruence between the legislator and the voter. Also, Figure 5.3 presents what I will refer to as the full model or full sample model. This model uses all of the data and therefore conditions the effects of several variables by the party of the incumbent. Chapter 3 clearly demonstrates, however, that there are strong partisan effects, particularly with respect to distributive benefits. To account for these differences, I estimate two other models, which collectively I will call partisan models. These models are estimated on sub-samples of the data: one for districts represented by a Republican incumbent another for districts with a Democratic 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, π_{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 5.4. The reduced form is created simply by substituting the year and district-year level coefficient equations into the individual level equation.

[Figure 5.4 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 Republican model, respondent party identification is expected to have a positive effect; in the Democratic model, party identification is expected have a negative 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 Republican and Democratic models, gender on its own should have negative and positive 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. Likewise at the individual level, perceptions and evaluations of the economy are also likely to factor into the voting calculus (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[9] 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.

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, as will become evident in Chapter 6, many of the variables that affect the vote may also be related to feelings

[9] There has been extensive debate over whether voters consider the national economy or their pocketbooks. Likewise, there are questions of whether voters are affected more by retrospective evaluations or expectations regarding the economy (MacKuen, Erikson, and Stimson 1992; Norpoth 1996). I do not necessarily take a side in these debates; there is ample evidence on all sides and the selection of a measure here is reflective of the data available. For the first question, there are simply more responses over time to questions about the national economy as opposed to pocketbook evaluations. Between 1984 and 2004, among respondents that voted in House races, national retrospections received about 500 more responses than personal retrospections. Considering whether to use expectations as opposed to retrospections was not necessary; the NES did not ask economic expectation questions at all in 2002. Theoretically, Norpoth (1996) provides good evidence that all four evaluations are related to one another and that national retrospections seem to trump the others regarding evaluations of the President. Other works also note that expectations are often based, at least in part, on retrospective analyses (Downs 1957; Fiorina 1981).

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

As discussed, distributive benefits are the key independent variable in the following analyses. Additionally, in the full sample, incumbent party identification is included because it is interacted with several individual level variables. Besides these two, two district level factors are controlled for, measured the same as they were in Chapter 3. First, the Index of Challenging Campaign Strength (ICCS) is used to control for the "quality" of the challenger. As explained in Chapter 3, the ICCS may provide a better electoral measure of the prospects of the challenger given its focus on fundraising. The ICCS was found to have a strong effect on election outcomes and therefore is likely to have a effect on voting behavior. It is expected that increases in the ICCS cause a decrease in the likelihood of an individual voting for the incumbent. Although it was not significant in the district level analysis in Chapter 3, the spending gap, measured as the difference between the log of challenger spending and the log of incumbent spending, is also included here. In Chapter 3, the null finding for the spending gap was attributed to the focus of the ICCS on campaign contributions. A similar result may occur here. If the spending gap does have a significant effect even after controlling for challenging campaign strength, 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, at the district-year

level, unobserved effects are modeled in the form of the random intercept at the individual level. Thus, any district-year level heterogeneity in the response that is not captured by the observed effects is encompassed by the district-year 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.

Distributive Benefits Hypotheses

At the conclusion of Chapter 4, I outlined several hypotheses for the effect of distributive benefits at various levels of awareness for various ideological identifications. I return to these hypotheses now with specific expectations regarding the coefficients described above.

Conservatives

Low Awareness Conservatives: At lower levels of political awareness, as distributive benefits increase, the likelihood of a conservative voting for the incumbent will increase.

High Awareness Conservatives: As awareness and distributive benefits increase, conservatives will be less likely to vote for the incumbent.

Considering the models presented in Figures 5.3 and 5.4, these hypotheses suggest the following relationships between the coefficients.

H_{C1}: $\beta_{01} + \beta_{21} = 0$

H_{C2}: $\beta_{01} + \beta_{21} + \beta_{31} + \beta_{51} < 0$

H_{C3}: $\beta_{51} < -\beta_{01} - \beta_{21} - \beta_{31}$

Conservatives are expected to respond positively to distributive benefits at low levels of awareness, lacking the motivation to link increased spending to preferences for less spending, with the likelihood of voting for the incumbent decreasing as awareness increases, *ceteris paribus*. Hypothesis C1 predicts that the effects of distributive benefits for conservatives when awareness is at its mean level are not significant (where β_{01} is the direct effect of distributive benefits and β_{21} is the interaction between benefits and

conservative identification). Note that awareness is not included in C1 because, at its mean, awareness is roughly equal to zero. Yet, as awareness increases, conservatives should show a decreased likelihood of voting for the incumbent (C2). This would be reflected in a negative joint effect of benefits for conservatives; the sum of the effects of *all* terms involving benefits for conservatives, including the interactions between awareness and benefits (β_{31}) and conservative, awareness, and benefits (β_{51}), should be negative. To be sure that as awareness and benefits increase, the likelihood of voting for the incumbent decreases, the effect of the interaction between conservative, awareness, and benefits should be larger than the other effects (C3).[10] Additionally, these hypotheses also show that as awareness decreases, the likelihood of what is now a low awareness conservative voting for the incumbent increases with distributive benefits.

Moderates

Low Awareness Moderates: As distributive benefits increase, moderates will be more likely to vote for the incumbent.

High Awareness Moderates: As awareness and distributive benefits increase, moderates will be even more likely to vote for the incumbent.

Again, these hypotheses can be translated into specific mathematic relationships between the estimated coefficients. Also note that the relationships are easier to describe because coefficients involving ideology are held at zero and all of the expected effects are in the same direction, which also applies to liberals.

$H_{M1}: \beta_{01} > 0$

[10] Note that hypotheses with linear combinations are necessary *within* each ideological group. These hypotheses are not meant to imply relationships across groups.

H_{M2}: $\beta_{01} + \beta_{31} > 0$

H_{M3}: $\beta_{01} > 5\beta_{31}$

In M1, it is expected that the direct effect of distributive benefits (β_{01}) is positive; this is the effect for moderates when awareness equals zero. In order for increasing awareness to translate into a positive effect for benefits (M2), it must be that the joint effect of benefits and the interaction between benefits and awareness (β_{31}) is also positive. For benefits to have a positive effect on the probability of voting for the incumbent, even at the lowest level of awareness, the direct effect of benefits must be five times as large as the effect of the interaction between benefits and awareness (M3). Assume the effect of the interaction is 0.1. If awareness is at its minimum (-5), then the total effect of the interaction term is: **0.1 x -5 = -0.5**. For increasing benefits to cause an increase in the likelihood of voting for the incumbent, β_{01} must be greater than 0.5, five times β_{31}.

Liberals

Low Awareness Liberals: As distributive benefits increase, liberals will be more likely to vote for the incumbent.

High Awareness Liberals: As awareness and distributive benefits increase, liberals will be even more likely to vote for the incumbent.

Following the same procedure from the "Conservatives" and "Moderates" hypotheses, expectations are given as follows.

H_{L1}: $\beta_{01} + \beta_{11} > 0$

H_{L2}: $\beta_{01} + \beta_{11} + \beta_{31} + \beta_{41} > 0$

H_{L3}: $\beta_{01} + \beta_{11} > 5(\beta_{31} + \beta_{41})$

As was the case with moderates, the direct effects of benefits for liberals must be positive (β_{01} is the effect of benefits and β_{11} is the interaction between benefits and liberal). For increasing awareness to lead to an increasing effect of benefits on the vote, the joint effect of benefits for liberals (now adding β_{31}, the interaction of awareness and benefits, and β_{41}, the interaction of liberal, awareness, and benefits) must be positive. Finally, for liberals at the lowest level of awareness to respond positively to benefits, the effect of benefits for liberals, without considering awareness, must be greater than five times the effects of the interactions between benefits and awareness and benefits, liberal, and awareness.

Results and Discussion

[Table 5.2 here]

Table 5.2 presents the results for the three models discussed above: the full model, which uses data from all districts, and the partisan models, which separately analyze districts with Republican and Democrat incumbents. Along with the variable names are the expectations for each of the three models. In each model, there is significant variation in the intercept by district-years, evidenced by the significance of standard deviations of the intercept in each model. Each of the models also performs quite well, correctly predicting over 86% of the cases with proportion reductions in error over 0.51.[11] With respect to the estimates, there is strong support for the Aware-Conservative hypothesis, which posited that conservatives of high awareness would display a lessening likelihood of voting for the incumbent as distributive benefits

[11] Predictions are based on the probability of a positive outcome assuming the residual of the district-year intercept equals zero.

increased. This is supported generally and specifically in Republican and Democratic districts; β_{51}, which is the effect of the interaction between conservative identification, awareness, and benefits, is negative and significant in all three models.

[Table 5.3 here]

How do the specific hypotheses fare? On their face, the results do not indicate a conditioning effect for liberals or moderates. In fact, there appears to be little statistical support for the linear combinations discussed above, as seen in Table 5.3. Before making this judgment, however, two things must be addressed given the number of interactions and the use of a dichotomous dependent variable. First, the conditional significance of distributive benefits needs to be examined. Specifically, for which values of ideology and awareness do distributive benefits have a statistically significant effect on the vote? Second, what are the actual probabilities that individuals vote for the incumbent? Both of these questions will be answered in the next section.

Control Variables

Before returning to the conditional effects of ideology and awareness on distributive benefits, I will first examine the other results of the models. Related to statistics like the proportion reduction in error, looking at the 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 positive effect in Republicans districts and a strong negative effect in Democratic districts. Looking at

the party of the incumbent separately in the full model, it appears that Independent identifiers are more likely to vote for Republican incumbents; this is the effect of incumbent party when respondent party equals zero, pure Independent. This conclusion is supported by the intercepts in the partisan models. For Republican incumbents, the intercept equals -2.892, while for Democratic incumbents it is -3.337. More specifically, white, male, moderate, Independent identifiers of mid-level awareness who believe the national economy is the same as last year in districts in which the strength of the challenging campaign and distributive benefits are at mean levels and both candidates spend the same amount of money, regardless of the party of the President, are more likely to vote for a Republican incumbent.[12]

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. Gender, on the other hand, does not significantly affect the vote.

Looking at the last two individual level control variables, consistent with prior research, national economic retrospections do have an effect on voting behavior.

[12] Put simply, this is the interpretation of the intercept in the partisan models when all variables, except presidential party, equal zero. I go through the explanation above both to demonstrate the estimated Republican advantage and to highlight the fact that "zero" is actually a meaningful value for these variables. In many models, the intercept can be difficult to define because zeroes are measured as the absence of a given variable, which in reality exists in all of the data. Here, zeroes for all of the variables do have a real, substantive meaning.

Specifically, the effects are conditional on the 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, an individual become more likely to vote for the incumbent.

At the district level, the results mirror what was reported in Chapter 3. Increases in challenging campaign strength lead to a decreased likelihood of voting for the incumbent. Also, the spending gap does not have significant effects. As described above, the explanation given for this in the district analyses was that campaign strength, which is based largely on campaign contributions, is effectively washing out the effects of spending. Simply, the more money the challenger raises the better the challenger performs. Looking finally at presidential party identification, as discussed above with respect to respondent party identification, there are no independent effects of presidential party. That is, holding all else at zero, individuals are no more likely to vote for the incumbent or particular incumbents (Republican or Democrat) when the President is a Republican or a Democrat.

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

There were two questions listed above that should clarify the relationships between ideology, awareness, distributive benefits, and voting. The first, which I discuss now, was for which values of ideology and awareness do distributive benefits have a statistically significant effect on the vote? Perhaps even more generally, *when* do distributive benefits have an effect? For conservatives, it is when awareness is either

very high or very low, regardless of the party of the incumbent. For moderates, it is when awareness is very low, but only in Republican districts. For liberals, it is when awareness is very high or very low, but only in Democratic districts. As evidence in support of these statements, I offer Figures 5.5 and 5.6, which graph the conditional significance of distributive benefits in Republican and Democratic districts respectively, varying ideological identification and awareness.

[Figure 5.5 and 5.6 here]

The conditional significance is derived from the conditional z-score for the effect of distributive benefits and is based on the coefficients and variance-covariance matrices of the partisan models, although the logic also applies to the full sample model. Technically, the effect of distributive benefits is calculated from every term in the model that includes distributive benefits as a variable. For all models, this is:

[5.1] β_{01} *Dist. Ben.* + β_{11} *(Liberal x Dist. Ben.)* + β_{21} *(Conservative x Dist. Ben.)*
+ β_{31} *(Awareness x Dist. Ben.)* + β_{41} *(Liberal x Awareness x Dist. Ben.)*
+ β_{51} *(Conservative x Awareness x Dist. Ben.)*

Factoring out distributive benefits yields the following "beta," which clearly is conditional on the values of awareness and ideological identification.

[5.2] $(\beta_{01} + \beta_{11}$ *x Lib.* + β_{21} *x Con.* + β_{31} *x Aware* + β_{41} *x Lib. x Aware* + β_{51} *x Con. x Aware)*

To establish statistical significance, we also need the joint standard error so that z-scores can be calculated.[13] The joint standard error can be expressed mathematically as follows:

[5.3] $$SE = \sqrt{\sum \text{var}(\beta_{k1}) + 2 \cdot \sum \text{cov}(\beta_{k1}, \beta_{l1})} \text{ ; for } k = [0, 5], \text{ for } k \neq l$$

When assessing significance, the joint standard error does not change, but the conditional effect varies, in this case with ideology and awareness. It leads that there is a different effect of distributive benefits for each value combination between ideology and awareness. Furthermore, there is a different z-score for each value combination, derived from dividing Equation 5.2 by Equation 5.3. Figures 5.5 and 5.6 plot these z-scores for all three ideological identifications at every possible value of awareness. The conclusions to draw from these figures are what were stated at the outset of this section.

Returning to the expectations listed at the end of Chapter 4, in both Democratic and Republican districts, conservatives display the expected effects. At low levels of awareness, it is assumed that any knowledge of benefits is derived from credit claiming. The lack of political awareness manifests itself in the inability to link distributive spending to conservative preferences for smaller government. Low awareness conservatives, therefore, are significantly more likely to vote for incumbents as distributive benefits increase. Without looking at predicted probabilities, we can see in both Figures 5.5 and 5.6 that the z-score for low awareness conservatives is positive. As benefits increase past the chamber mean, which makes the value of benefits as modeled positive, the effect of benefits (+) times the amount of benefits (+) leads to an increase in

[13] The joint standard error is calculated as the square root of the sum of the variances of the coefficients plus two times the sum of the covariances between each non-repeated pair of coefficients.

the likelihood of voting for the incumbent. Moderates also seem to fall into the predicted patterns. In both Republican and Democratic districts, as awareness increases there an increased propensity for distributive benefits to positively affect the likelihood of voting for the incumbent. Although in both types of districts, distributive benefits are rarely statistically significant. In fact, the only time distributive benefits is significant for moderates is in Republican districts when awareness is very low.[14] For liberals, distributive benefits only factor into the voting calculus in Democratic districts. The same ideological consistency arguments made for conservatives seem to apply here. Liberals are more likely to have preferences for government spending and there may be an expectation that Democrats supply their districts with government projects. At the higher ends of awareness, while conservatives appear less likely to vote for spendthrift Democrats, liberals are more likely. The roles switch at the low end of the awareness scale, with conservatives and liberals seemingly unable to link real political outcomes with the preferences they should derive from their ideological identification.

Ideological Inconsistency in Liberals

For conservatives, it is relatively easy to explain why the less aware, less sophisticated, do not "punish" incumbents who spend; they lack the motivation to link an ideological position—less spending—with the real outcome—more spending. Furthermore, this supposed failure falls in line with existing theories of distributive benefits. These conservatives are simply self interested actors. They like having more benefits in their district, assuming some credit claiming on the part of the incumbent, and are happy that the incumbent is working for the "good" of the district. Why would low

[14] This is assuming a threshold of ±1.96 for 95% confidence.

awareness liberals be less likely to vote for Democratic incumbents who bring more benefits back to the district? With the data available here, there is no easy answer, although I suspect the answer also lies in the credit claiming activities of the incumbent.

First, it may be necessary to address what it means to be "liberal," especially at lower levels of political awareness. The nature of liberalism, as it has developed over the last forty years, has come to focus much more on social and cultural issues (Dionne, Jr. 1992). Insofar as modern liberalism is concerned with the fiscal outputs of government, the emphasis has been on redistributive policies—programs that contribute to government spending but have a strong grounding in social politics and egalitarian values (Conover and Feldman 1981; McClosky and Zaller 1984). As it would take awareness to make a conservative act against economic self interest, it may also take awareness to make a liberal recognize the economic good of distributive spending. Bringing the discussion back to credit claiming, it may be that Democrats who focus too much of their campaign message on local projects fail to arouse liberal voters whose primary, and perhaps sole, concern is social change.

Ideology, Awareness, and Predicted Probabilities

[Figures 5.7 and 5.8 here]

Figures 5.7 and 5.8 present the predicted probabilities of voting for the incumbent for high (5), mid (0), and low (-5) awareness conservatives across the range of distributive benefits in Republican and Democratic districts respectively. At high awareness, conservatives are most likely to vote for Republicans who drastically cut distributive spending. At the minimum of spending, about $2.2 million, a highly aware

conservative is almost certainly going to for the incumbent. As distributive spending increases, this probability drops to below 40% at the maximum amount of spending. The converse is true of low awareness conservatives. At the minimum of benefits, the likelihood of voting for the incumbent is below 20%, rising to 99% at the maximum of benefits. For mid-level awareness, benefits do not have much of an effect on voting behavior. The probability of voting for the incumbent ranges from just under 80% to just over 80% as benefits range from their minimum to their maximum.

In Democratic districts, the results are largely consistent, except the probability curves are steeper. Across the range of benefits, aware conservatives go from almost certainly voting for Democrat incumbents who limit spending to almost certainly voting against Democrats who spend to the hilt. The contrast between districts is when aware conservatives turn against the incumbent. In Republican districts, aware conservatives are very likely to vote for the incumbent, even if spending is at the chamber mean (predicted probability equals 77%). For Democrats, the probability of getting an aware conservative's vote *at the same level of spending* is 17%, a 60 point decrease. Thus while aware conservatives are likely to give Republicans the benefit of the doubt, waiting for egregious violations of conservative spending norms before acting against the incumbent, it takes far less for them to support the Republican challenger in a Democratic district. At mid-level awareness, the trend is the same in Democratic districts as it is in Republican districts, although the range of probabilities is larger. When benefits are at a minimum, these conservatives have a 63% probability of voting for the incumbent; at the maximum, the probability increases to 79%, a 16 point increase. For low awareness conservatives, the range is just as large for high awareness conservatives, but in the

opposite direction. Low awareness conservatives will almost certainly vote against Democrats who drastically cut spending and will almost certainly vote for Democrats who spend at the maximum level.

[Figures 5.9 and 5.10 here]

The predicted probabilities for moderates at the three levels of awareness across the range of distributive benefits for Republican and Democratic districts are depicted in Figures 5.7 and 5.8 respectively. If one word could summarize the effect that distributive benefits have for moderates on voting behavior, it would be "moderate." As discussed above, distributive benefits rarely have a significant impact on the voting behavior of moderate identifiers. This was seen in the conditional significance graphs presented above and can be seen in how little the predicted probabilities graphs move. There is however, more movement in Republican districts than Democratic districts, in which there is little change when moving from the minimum to the maximum of benefits. In Republican districts, however, there is tendency for high awareness moderates to vote for spendthrift Republicans and for low awareness moderates to vote against these same incumbents. As described above in reference to low awareness liberals, one likely explanation for this is credit claiming missteps. The realm of distributive spending may not factor into the political thinking of moderates, especially low awareness moderates. These individuals, who are also far less likely to participate in the political process at all, are likely to be less interested in local spending as a campaign issue. Thus focusing on

credit claiming to the detriment of other issues could be costly for Republicans among these voters.[15]

[Figures 5.11 and 5.12 here]

Against expectations, liberals appear to be holding Republican incumbents to a low-spending reputation. The effects, as described above, are not significant in Republican districts, but the trends presented in Figure 5.11 are interesting. Regardless of awareness, as Republican incumbents secure more distributive spending, liberals are less likely to vote for them. Ideological consistency, as predicted, reappears in Democratic districts. Just as Republicans seem to have a reputation for fiscal conservatism, Democrats seem to have a responsibility to bring projects to their constituents. High awareness liberals, whom we would expect to prefer more spending, are almost certain to vote for Democrats who secure at least the chamber mean in distributive spending. As spending decreases, however, aware liberals become increasingly more likely to vote for the challenger. Although, it takes a very low amount of distributive benefits (around $1.6 million) before the probability of voting for the incumbent drops below 50%. Low and mid-levels of awareness are similar to what was observed for conservatives. At mid-level awareness, liberals appear unmoved by changes in distributive benefits. At low awareness, liberals are most likely to vote for Democrats who limit spending and least likely to vote for Democrats who maximize their districts' share of the distributive pie.

[15] It could also be that these voters are holding Republicans accountable for large amounts of spending. This explanation, however, given the moderate identification and low political awareness, seems far less accurate than the credit claiming possibility addressed in the text.

Conclusion

This dissertation started with a puzzle. Distributive benefits are generally assumed to have a positive effect on election outcomes. Why then has there been difficulty in connecting electoral outcomes to voter choices? Other studies have examined the individual level and the results are usually weak. There seems to be a positive relationship between distributive benefits and feelings about the incumbent (Stein and Bickers 1994a; Sellers 1997), but why is this supposedly strong source of incumbency advantage so weakly related to voting behavior? This chapter takes a significant step forward in answering this question.

There is heterogeneity in individual responses to distributive benefits. Specifically, politically aware conservatives are less likely to vote for incumbents, Republican and Democrat, as in-district distributive spending increases. Chapter 3 noted that Republicans do not receive the same direct electoral benefits from distributive spending that Democrats do. Chapter 5 has now given convincing reasons why; Republicans who secure a large amount of distributive benefits run the serious risk that the challenging campaign will have more resources. This is important not just in the district context, but also as increases in challenging campaign strength cause decreases in the likelihood of voting for *Republican* incumbents. More importantly, aware conservatives show that they will vote against spendthrift Republicans. Republicans, however, are not the only ones that need to be concerned with the pork barrel. Just as Republicans seem to have a reputation for limited spending, Democrats seem to be expected to bring home the projects. Aware liberals show that they are capable of voting

against Democratic incumbents that do not satisfy their constituents' desire for federal programs.

In looking at these results, it is also important to note the importance of political awareness. Awareness, remember, has two main functions: increasing the likelihood of knowing about distributive spending and increasing the individual's ability to behave in a manner consistent with their ideological preferences, assuming conservatives and liberals prefer less and more government spending respectively. This second function is the lynchpin to these analyses. Just as aware conservatives frown upon expansions of the pork barrel, so too do unaware conservatives reward more spending. The only issue that remains to be confronted is how knowledge is obtained. It has been assumed that, even at the lowest levels of awareness, the voting behavior of individuals can be affected by distributive benefits through credit claiming. Put another way, awareness is not the only factor that leads to "knowledge" about distributive benefits; nor does awareness guarantee that a voter has specific knowledge of government programs, although I argue awareness certainly helps. Credit claiming, as well as other sources like interest groups, can substitute for awareness, but only in the realm of knowledge. Awareness is necessary for an ideological voter to link actual spending to her own preferences for spending and act on this relationship. These conjectures are assessed empirically in the next chapter.

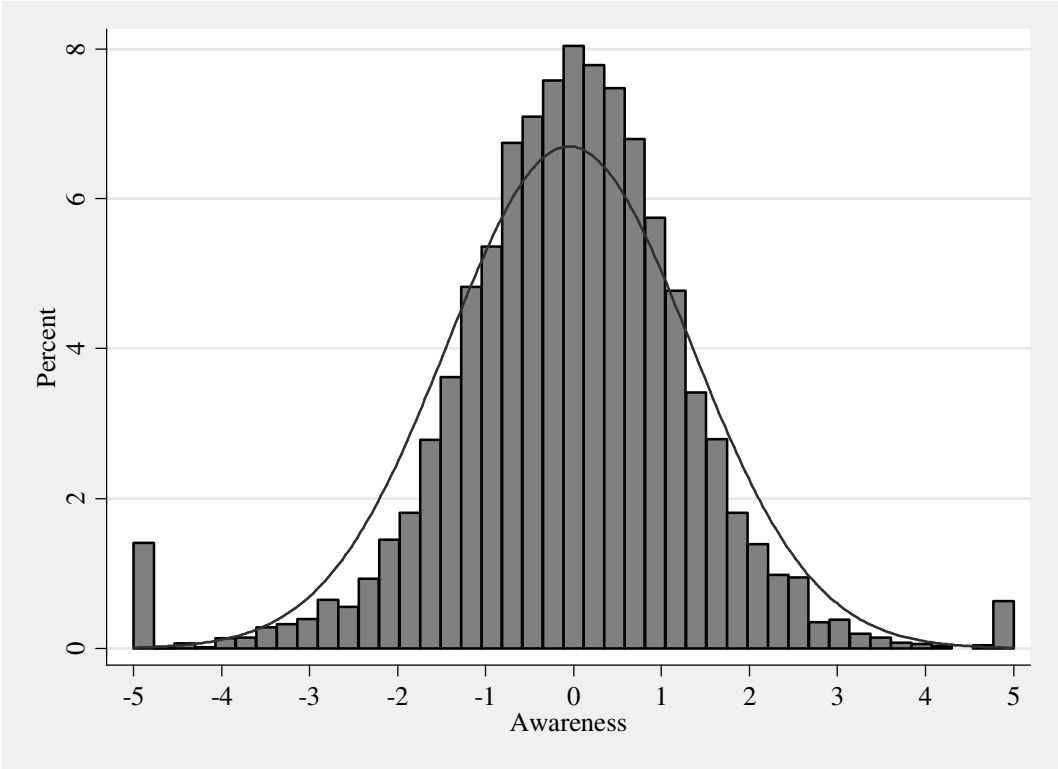

Figure 5.1
Histogram of Awareness

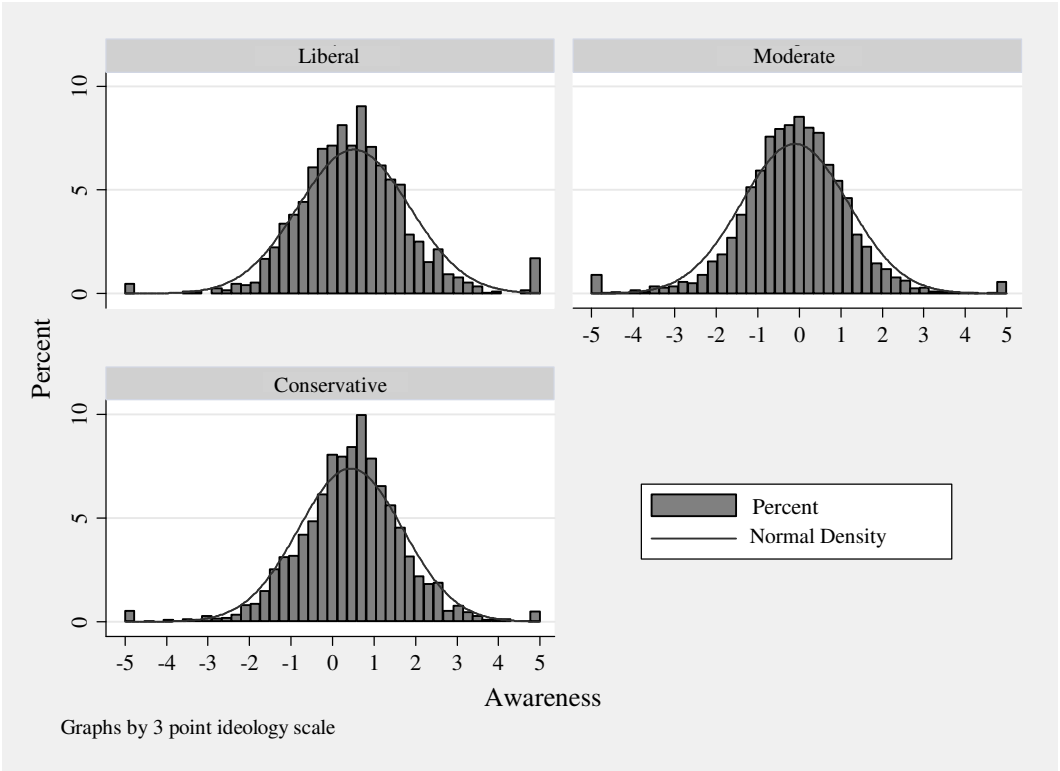

Figure 5.2
Histograms of Awareness by Ideological Identification

Figure 5.3
Random Effects Model of Voting Behavior

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

<u>*Individual Level*</u>

$$\eta_{ijt} = \boldsymbol{\pi_{0jt}} + \boldsymbol{\pi_{1j}}\ Liberal_{ijt} + \boldsymbol{\pi_{2j}}\ Conservative_{ijt} + \boldsymbol{\pi_{3j}}\ Awareness_{ijt}$$

$$+ \boldsymbol{\pi_{4j}}\ (Liberal_{ijt}\ x\ Awareness_{ijt}) + \boldsymbol{\pi_{5j}}\ (Conservative_{ijt}\ x\ Awareness_{ijt})$$

$$+ \boldsymbol{\pi_{6j}}\ Resp.\ Party\ ID_{ijt} + \boldsymbol{\pi_{7j}}\ Female_{ijt} + \boldsymbol{\pi_{8j}}\ Black_{ijt}$$

$$+ \boldsymbol{\pi_{9jt}}\ National\ Economic\ Retrospections_{ijt} + \pi_{10}\ Inc.\ Feeling\ Therm._{ijt} + e_{ijt}$$

<u>*District-Year Level*</u>

$$\pi_{0jt} = \boldsymbol{\beta_{00t}} + \beta_{01}\ Distributive\ Benefits_{jt} + \boldsymbol{\beta_{02t}}\ Inc.\ Party\ ID_{jt}$$

$$+ \beta_{03}\ Challenging\ Campaign\ Strength_{jt} + \beta_{04}\ Spending\ Gap_{jt} + r_{0jt}$$

$$\pi_{kj} = \beta_{k0} + \beta_{k1}\ Distributive\ Benefits_{jt}\ ;\ \text{for k} = [1, 5]$$

$$\pi_{mj} = \beta_{m0} + \beta_{m1}\ Inc.\ Party\ ID_{jt}\ ;\ \text{for m} = [6, 8]$$

$$\pi_{9jt} = \boldsymbol{\beta_{90t}} + \boldsymbol{\beta_{91t}}\ Inc.\ Party\ ID_{jt}$$

<u>*Election Year Level*</u>

$$\beta_{00t} = \gamma_{000} + \gamma_{001}\ Pres.\ Party\ ID_t$$

$$\beta_{02t} = \gamma_{020} + \gamma_{021}\ Pres.\ Party\ ID_t$$

$$\beta_{90t} = \gamma_{900} + \gamma_{901}\ Pres.\ Party\ ID_t$$

$$\beta_{91t} = \gamma_{910} + \gamma_{911}\ Pres.\ Party\ ID_t$$

Note: Bold coefficients identify variables that are interacted at higher levels. For the Partisan Models, coefficients β_{02t}, β_{m1}, and β_{91t} are constrained to zero.

Figure 5.4
Reduced Form Model

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

$$\eta_{ijt} = \gamma_{000} + \gamma_{001}\ Pres.\ Party\ ID_t + \beta_{01}\ Distributive\ Benefits_{jt} + \gamma_{020}\ Inc.\ Party\ ID_{jt}$$
$$+ \gamma_{021}\ (Pres.\ PID_t \times Inc.\ PID_{jt}) + \beta_{03}\ Campaign\ Strength_{jt} + \beta_{04}\ Spending\ Gap_{jt}$$
$$+ \beta_{10}\ Liberal_{ijt} + \beta_{11}\ (Liberal_{ijt} \times Distributive\ Benefits_{jt})$$
$$+ \beta_{20}\ Conservative_{ijt} + \beta_{21}\ (Conservaitve_{ijt} \times Dist\ Benefits_{jt})$$
$$+ \beta_{30} Awareness_{ijt} + \beta_{31}\ (Awareness_{ijt} \times Dist\ Benefits_{jt})$$

$$+ \beta_{40}\ (Liberal_{ijt} \times Awareness_{ijt}) + \boldsymbol{\beta_{41}\ (Liberal_{ijt} \times Awareness_{ijt} \times Dist\ Benefits_{jt})}$$
$$+ \beta_{50}\ (Conservative_{ijt} \times Awareness_{ijt}) + \boldsymbol{\beta_{51}\ (Conservative_{ijt} \times Awareness_{ijt} \times Dist\ Benefits_{jt})}$$

$$+ \beta_{60}\ Resp.\ PID_{ijt} + \beta_{61}\ (Resp.\ PID_{ijt} \times Inc.\ PID_{jt})$$
$$+ \beta_{70}\ Female_{ijt} + \beta_{71}\ (Female_{ijt} \times Inc.\ PID_{jt}) + \beta_{80}\ Black_{ijt} + \beta_{81}\ (Black_{ijt} \times Inc.\ PID_{jt})$$
$$+ \gamma_{900}\ National\ Economic\ Retrospections_{ijt} + \gamma_{901}\ (Pres.\ PID_t \times Nat\ Econ\ Retro_{ijt})$$
$$+ \gamma_{910}\ (Inc.\ PID_t \times Nat\ Econ\ Retro_{ijt}) + \gamma_{911}\ (Pres.\ PID_t \times Inc.\ PID_{jt} \times Nat\ Econ\ Retro_{ijt})$$
$$+ \pi_{10}\ Inc.\ Feeling\ Therm._{ijt} + [r_{0jt} + e_{ijt}]$$

Note: Bold type here denotes the coefficients and variables of interest with respect to the theory of individual heterogeneity developed in Chapter 4. β_{41}, the effect of the interaction between liberal identification, awareness, and distributive benefits, is expected to be positive. As awareness and benefits increase, liberals should be both more aware of benefits and more able to connect preferences for more government spending with actual increases in in-district spending and therefore be more likely to vote for the incumbent. The opposite is expected for conservatives; as awareness increases, conservatives should be more able to connect preferences for less spending to spending increases and be less likely to vote for the incumbent. Thus β_{51} is expected to be negative.

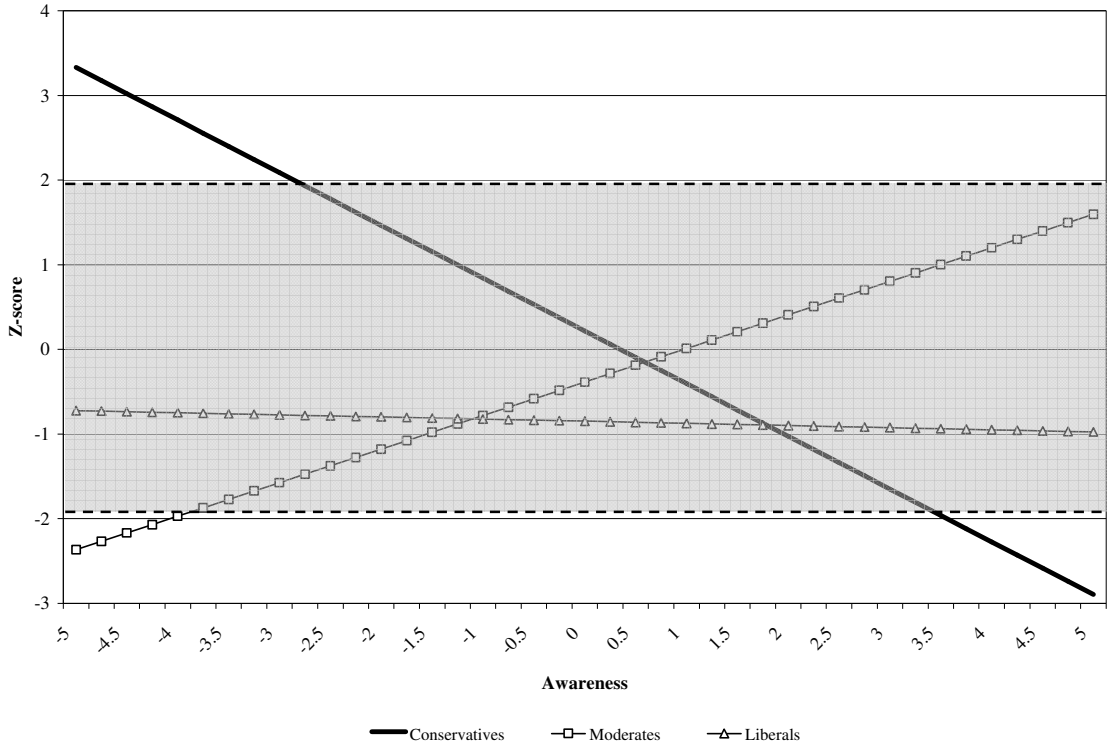

Figure 5.5
Conditional Significance of Distributive Benefits in Republican Districts
Varying Awareness and Ideological Identification

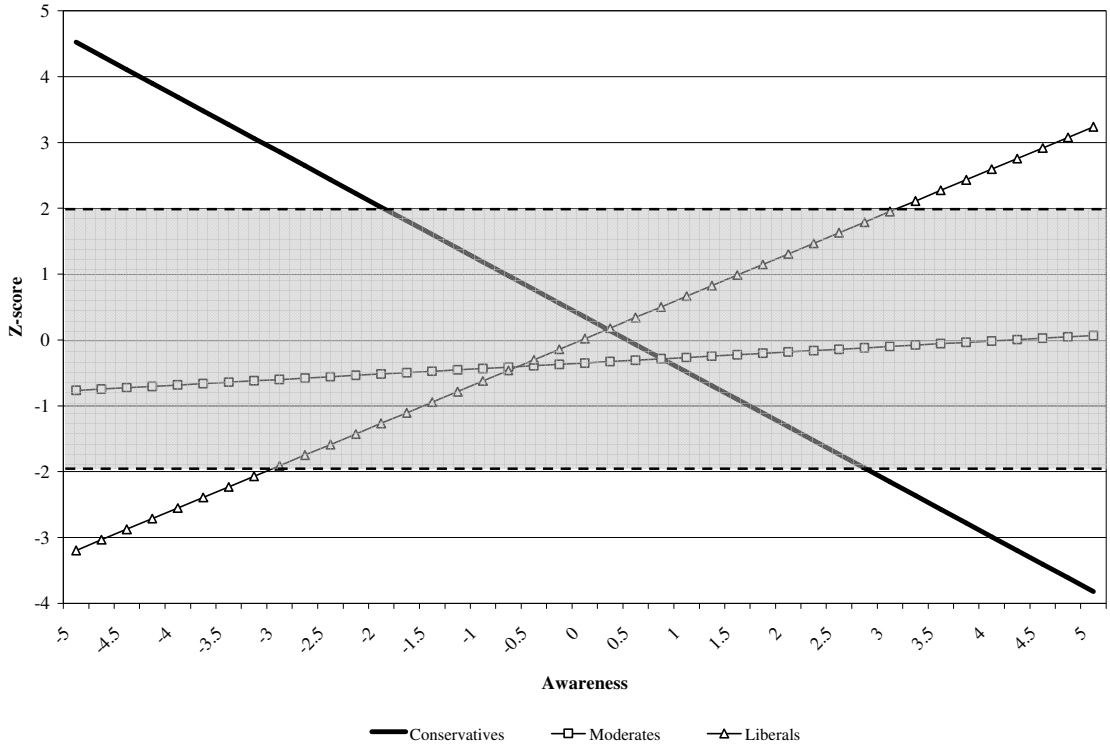

Figure 5.6
Conditional Significance of Distributive Benefits in Democratic Districts
Varying Awareness and Ideological Identification

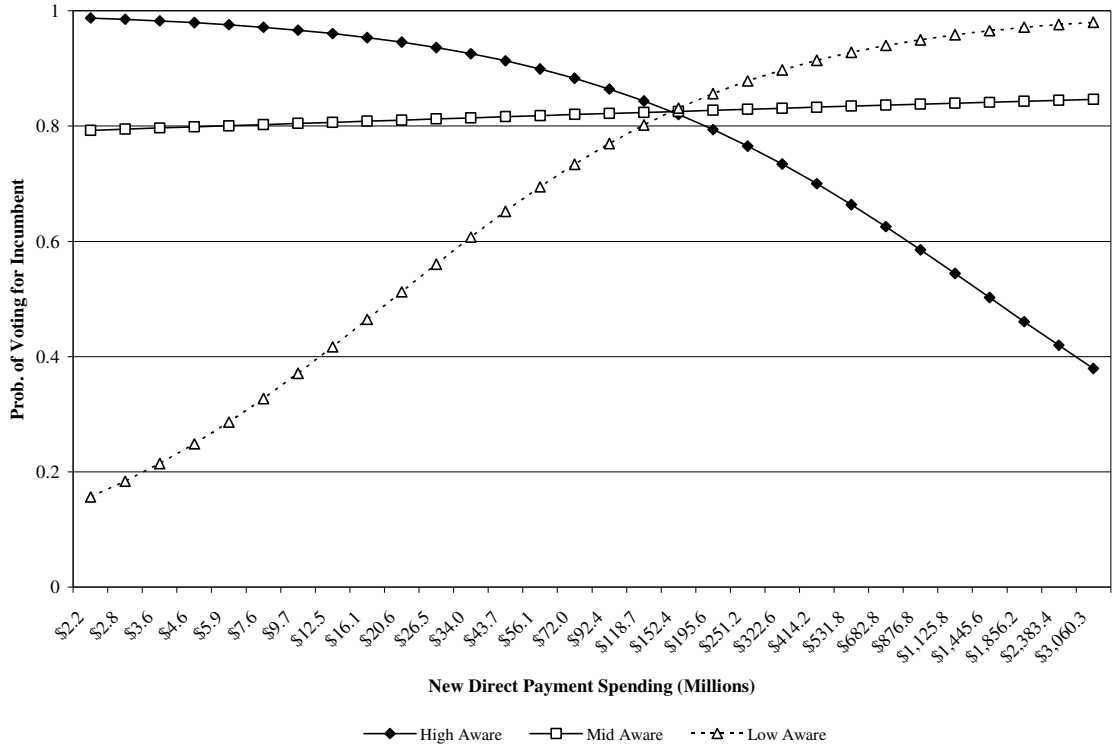

Figure 5.7
Predicted Probability of Conservatives Voting for the Incumbent in Republican Districts

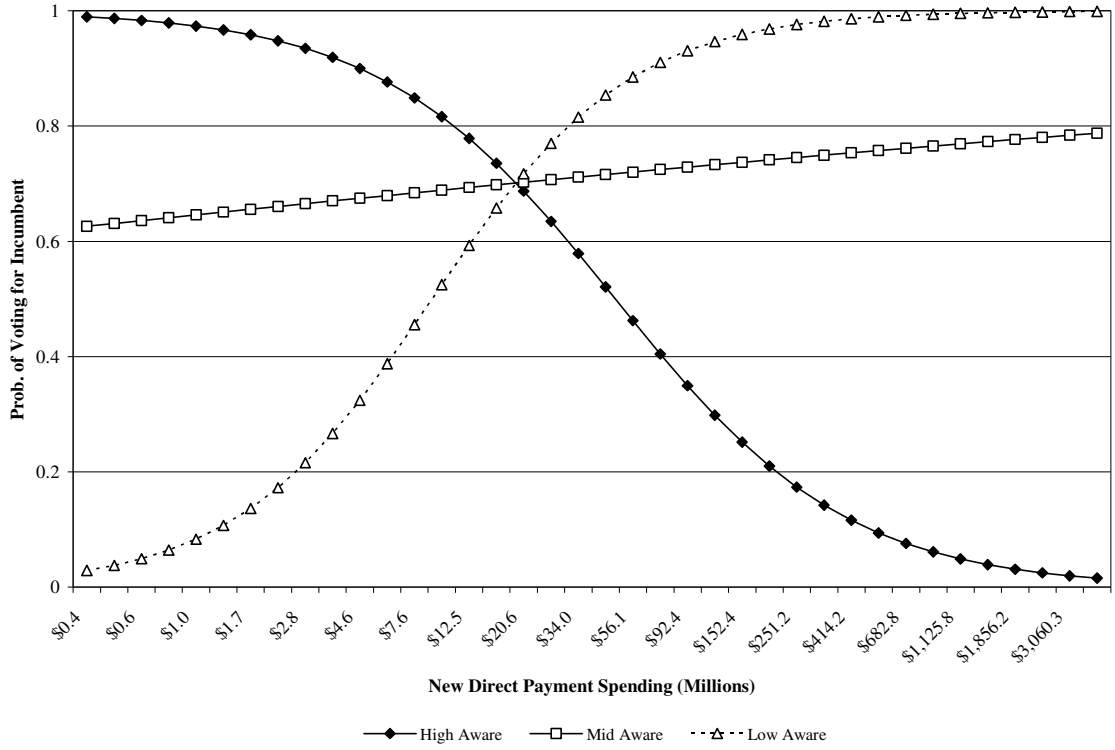

Figure 5.8
Predicted Probability of Conservatives Voting for the Incumbent in Democratic Districts

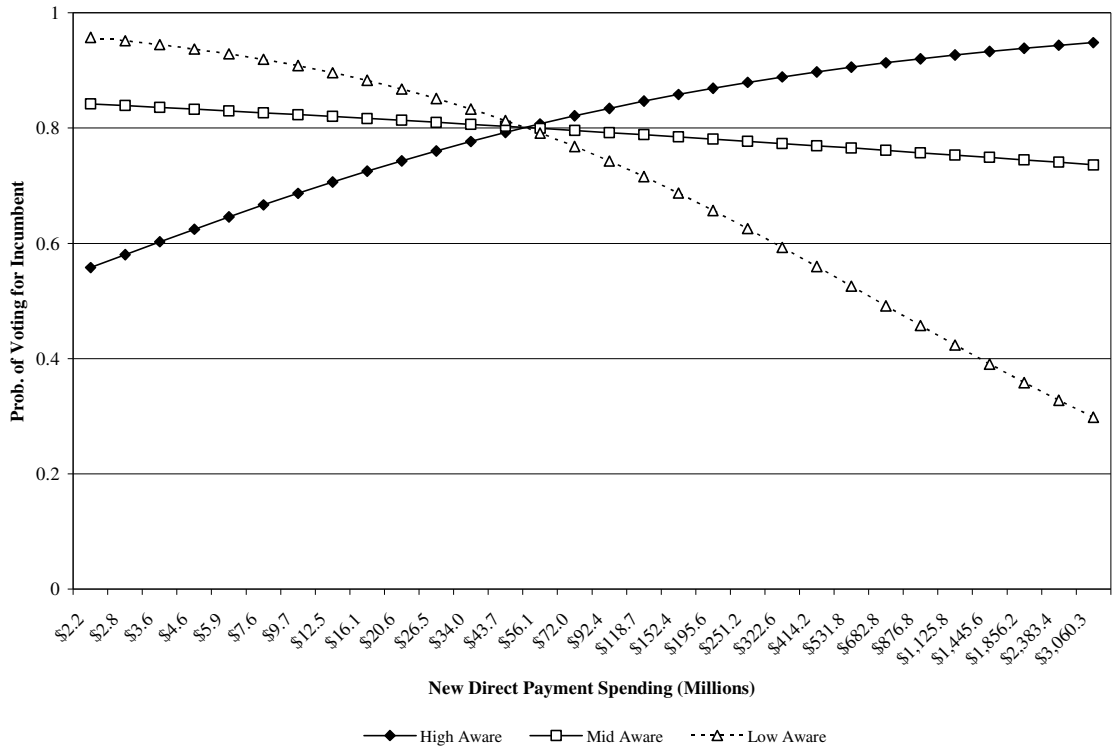

Figure 5.9
Predicted Probability of Moderates Voting for the Incumbent in Republican Districts

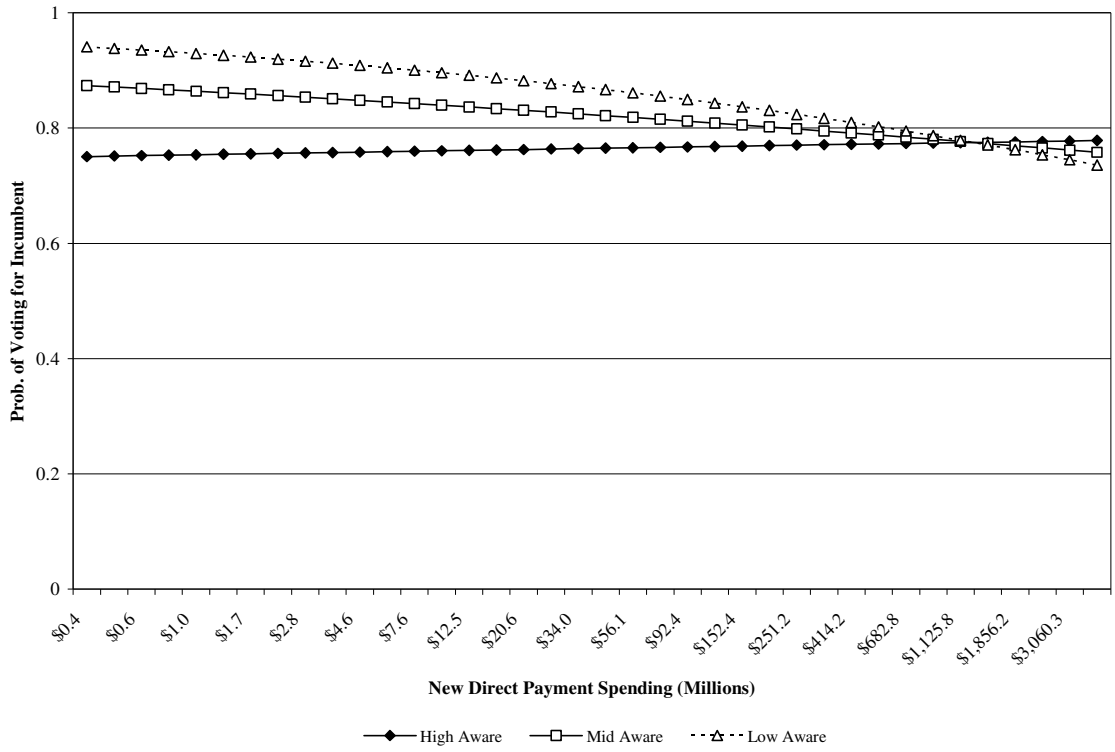

Figure 5.10
Predicted Probability of Moderates Voting for the Incumbent in Democratic Districts

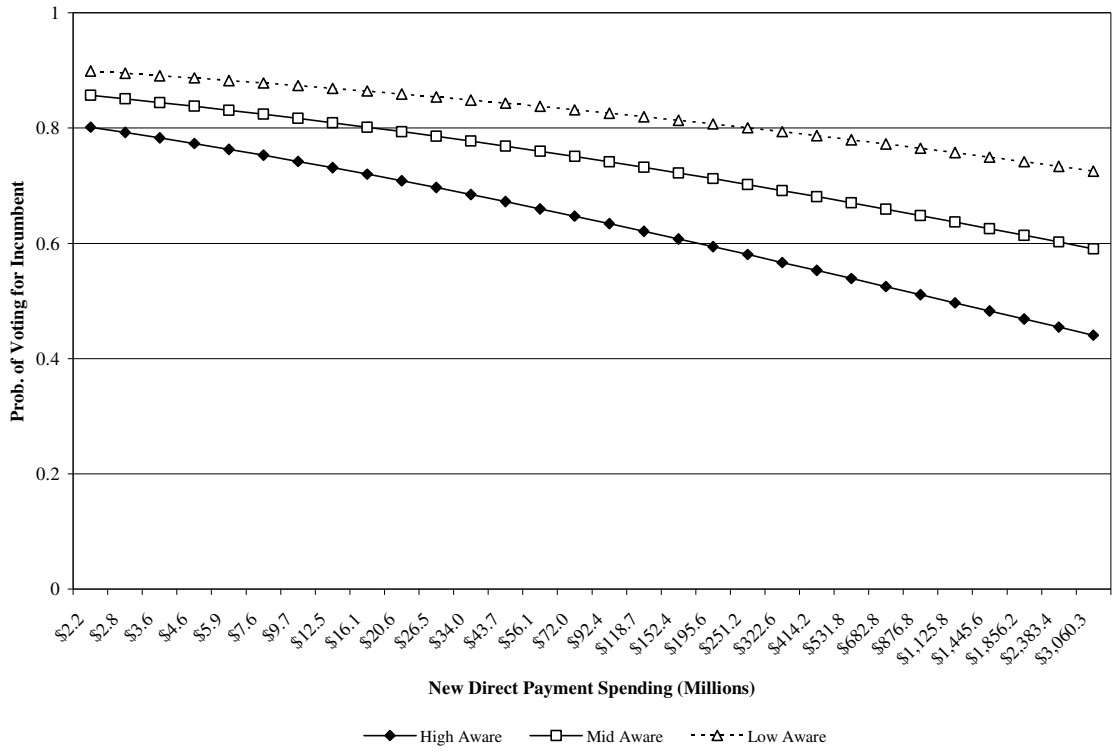

Figure 5.11
Predicted Probability of Liberals Voting for the Incumbent in Republican Districts

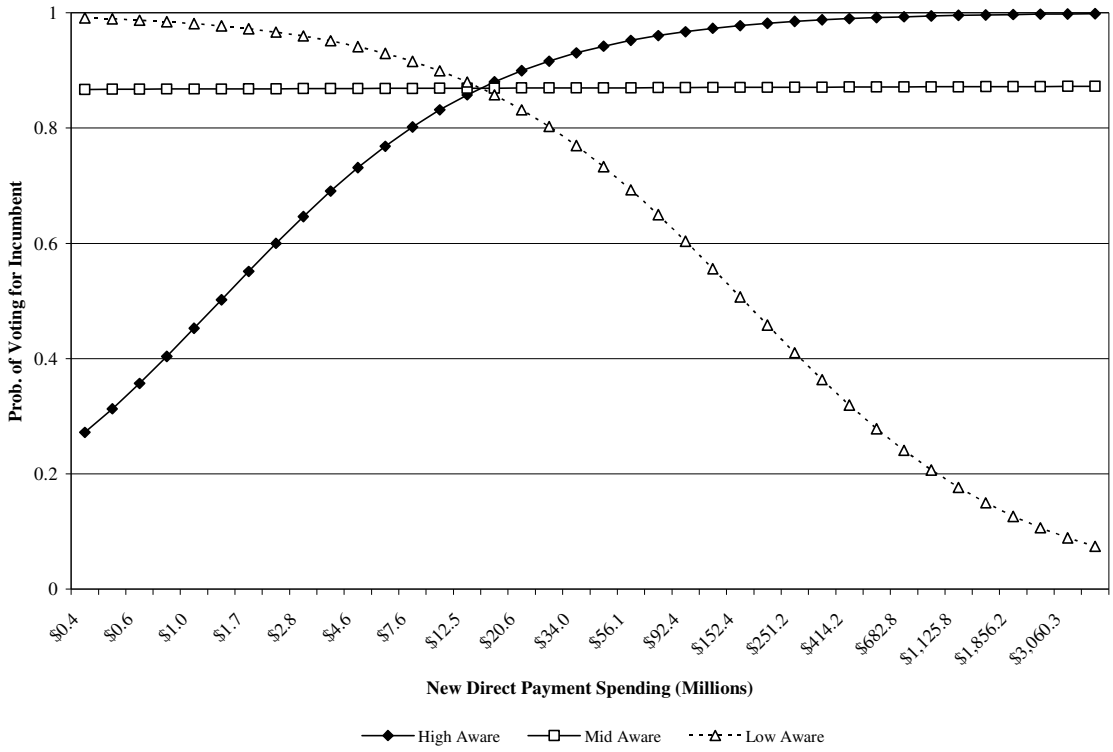

Figure 5.12
Predicted Probability of Liberals Voting for the Incumbent in Democratic Districts

Table 5.1
Political Awareness Items from the National Election Studies

Item	*Question*	*Years Included*
Political Knowledge: Identification and Factual Knowledge		
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
Political Knowledge: Ideological / Issue Placement		
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
Interest and Exposure to Information		
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
Involvement		
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 5.2
Results for the Random Intercept Models (1984 – 2004)

	Districts:	*All*		*Republican*		*Democrat*	
Variables	***Exp.***	***Coef.***	***SE***	***Coef.***	***SE***	***Coef.***	***SE***
Individual Level Controls							
Resp. Party ID	**0/+/-**	0.030	0.023	0.571*	0.036	-0.526*	0.032
x Inc. Party ID	**+/0/0**	0.598*	0.023				
Female	**0/-/+**	-0.055	0.081	-0.026	0.124	-0.034	0.109
x Inc. Party ID	**-/0/0**	-0.047	0.080				
Black	**0/-/+**	-0.103	0.192	-0.810*	0.302	0.597*	0.241
x Inc. Party ID	**-/0/0**	-0.675*	0.192				
National Economic Retrospections	**0/0/0**	0.007	0.059	0.096	0.088	-0.070	0.080
x Inc. Party ID	**0/0/0**	0.077	0.058				
x Pres. Party ID	**0/+/-**	0.071	0.059	0.275*	0.089	-0.132#	0.081
x Inc. Party ID x Pres. Party ID	**+/0/0**	0.221*	0.059				
Incumbent Feeling Thermometer	**+/+/+**	0.070*	0.002	0.069*	0.004	0.070*	0.003
District & Year Level Controls							
Inc. Party ID	**0/0/0**	0.183*	0.067				
x Pres. Party ID	**0/0/0**	-0.059	0.049				
Challenging Campaign Strength	**-/-/-**	-0.235*	0.075	-0.384*	0.121	-0.149	0.100
Spending Gap	**-/-/-**	-0.057	0.048	-0.010	0.071	-0.090	0.069
Pres. Party ID	**0/0/0**	-0.009	0.050	-0.058	0.078	0.038	0.066
Awareness / Ideology Effects							
Distributive Benefits	**+/+/+**	-0.092*	0.047	-0.089	0.073	-0.086	0.063
Awareness	**0/0/0**	0.046	0.063	0.147	0.097	-0.033	0.083
x Distributive Benefits	**+/+/+**	0.050	0.041	0.092	0.059	0.021	0.056
Liberal	**0/-/+**	0.179	0.230	-0.392	0.402	0.532#	0.307
x Awareness	**0/-/+**	0.022	0.182	-0.254	0.304	0.488	0.304
x Distributive Benefits	**+/+/+**	0.079	0.139	-0.107	0.209	0.091	0.222
x Awareness x Dist. Benefits	**+/+/+**	-0.020	0.109	-0.097	0.160	0.137	0.184
Conservative	**0/+/-**	-0.089	0.159	0.330	0.272	-0.302	0.199
x Awareness	**0/+/-**	-0.370*	0.132	-0.227	0.216	-0.493*	0.184
x Distributive Benefits	**+/+/+**	0.146	0.098	0.140	0.157	0.172	0.128
x Awareness x Dist. Benefits	**-/-/-**	-0.199*	0.083	-0.236#	0.132	-0.225*	0.117
Intercept		-3.152*	0.194	-2.892*	0.300	-3.337*	0.260
Model Statistics							
Std. Dev. of Random Intercept		0.444*	0.086	0.522*	0.129	0.435*	0.115
Rho & p-value (H_0: Rho = 0)		0.057	0.000	0.077	0.003	0.054	0.007
Individuals (N) & District-Years (J)		6,907	1,368	2,938	596	3,969	772
PCP & PRE		0.865	0.519	0.868	0.534	0.867	0.522

* $p < 0.05$, # $p < 0.1$ (two-tailed)
Note: The expectations column contains three expected directions. The first is for the entire sample, the second for Republican districts, and the third for Democratic districts. For the partisan models, if a variable is not included (e.g. incumbent party) the expectation is given as zero.

Table 5.3
Hypothesis Test Results

	Full Sample		***Republican Districts***		***Democratic Districts***	
Hypotheses	***Joint Coef.***	***p-value***	***Joint Coef.***	***p-value***	***Joint Coef.***	***p-value***
C1: $\beta_{01} + \beta_{21} = 0$	0.05	0.54	0.05	0.73	0.09	0.45
C2: $\beta_{01} + \beta_{21} + \beta_{31} + \beta_{51} < 0$	-0.10	0.24	-0.09	0.51	-0.12	0.29
C3: $\beta_{51} < -\beta_{01} - \beta_{21} - \beta_{31}$	C3 is the same test as C2 and is included for the sake of presentation.					
M1: $\beta_{01} > 0$	-0.09	0.05	-0.09	0.22	-0.09	0.18
M2: $\beta_{01} + \beta_{31} > 0$	-0.04	0.40	0.00	0.98	-0.07	0.33
M3: $\beta_{01} > 5\beta_{31}$	0.16	0.42	-0.58	0.09	-0.19	0.54
L1: $\beta_{01} + \beta_{11} > 0$	-0.01	0.92	-0.20	0.32	0.00	0.98
L2: $\beta_{01} + \beta_{11} + \beta_{31} + \beta_{41} > 0$	0.02	0.89	-0.20	0.24	0.16	0.44
L3: $\beta_{01} + \beta_{11} > 5(\beta_{31} + \beta_{41})$	-0.16	0.79	-0.18	0.85	-0.78	0.43

Note: All of the hypotheses are explained in the text. The tests were conducted by assessing the significance of the joint coefficients, the linear combinations presented with the hypotheses.

Chapter 6
Advertising and Credit Claiming in the 2002 House Elections
With Scott J. Basinger

In the previous chapters, it has been demonstrated that distributive benefits can have a powerful effect on election outcomes and voting behavior. Securing benefits, however, is not the panacea for the electorally-challenged incumbent. Republicans, specifically, must be wary of the projects they support because as in-district spending increases, Republican incumbents face stronger challenging campaigns. Republicans also do not receive the same direct electoral benefits from distributive spending as Democrats. The explanation offered for this result was that likely Republican supporters, specifically politically aware conservatives, would be less likely to vote for Republican incumbents who participated in vast expansions of the federal budget. These voters would also be less supportive of Democratic incumbents who secure large amounts of federal spending. The Republican case is more interesting, however, because it would require aware conservatives to act against their more natural political inclinations in favor of an ideological ideal. While the explanation sounded plausible, proof of these assertions was the next step in this research. In Chapter 4, fuller theoretical expectations were derived to explain the conditioning effects of ideology and awareness on the effect of distributive benefits. These expectations were met in the analyses of Chapter 5.

Yet, a final question still looms over this research. Is it realistic to assume that political awareness leads to knowledge regarding in-district distributive spending? In order for incumbents to be rewarded or blamed for levels of spending, voters must have

some knowledge about this spending. Since the introductory chapter, it has been assumed that incumbents who secure programs will seek to advertise their existence.[1] This form of district service goes to the heart of credit claiming, one of the most important advantages incumbents have over their congressional challengers. This chapter represents one of the first attempts to explicitly link the credit claiming activities of representatives to the effects of distributive benefits. We take a significant step beyond mere assumption here and test the proposition that the relationships discovered in Chapter 5 are conditioned by the amount of credit claiming by the incumbent.

Advertising and Credit Claiming

Again, the most pertinent criticism of these expectations is that it is unrealistic to assume that any voters, even the most highly aware individuals, will have knowledge about the level of in-district federal spending. Even if we stipulate that distributive benefits are an obscure topic to voters, however, awareness should only increase an individual's likelihood of receiving political information. In the case of distributive benefits, the primary source of information about new spending and the incumbent's role in procuring that spending is likely to be the incumbent herself. To our knowledge, no studies to date have looked at whether and to what degree incumbents directly claim credit for local achievements in their campaign advertisements, and at the effects of explicit credit-claiming on voter judgment.

Campaigns' moderator effects could work in two possible ways. First, suppose campaign advertising is a *complement* to voter awareness: if incumbents do not claim

[1] Chapter 4 also states that the existence of spending can also be advertised by interest groups who either benefit from or are against the programs supported by congressional incumbents.

credit for distributive benefits, then their constituents will not respond; if incumbents do engage in credit-claiming advertising, then only the politically aware constituents will respond. This first logic, first introduced in Chapter 4, suggests a four-way interaction between distributive spending, voter ideology, voter awareness, and campaign advertising. Additionally, it could be that credit-claiming reaches most voters, even constituents of low awareness. Awareness in this case would have the added effect of helping individuals formulate ideologically consistent responses to information about distributive spending. Second, suppose campaign advertising is a *substitute* for voter awareness: if incumbents do not claim credit for distributive benefits, then only politically aware constituents will respond; if incumbents do engage in credit-claiming advertising, then politically aware and unaware constituents will respond. The second logic suggests a three-way interaction between distributive spending, voter ideology, and campaign advertising.

Given what has been argued about the role of awareness—i.e., that it affects both the likelihood that information is received *and* the ability to formulate an ideologically-appropriate response—our preference is for the first logic. If awareness only affects the voter's exposure to information, however, then the second logic will be revealed to be accurate.

Methods

Given the results presented in Chapters 3 and 5, we expect there to be different effects for most of the variables in Republican and Democratic districts, especially distributive benefits. We therefore estimate six separate models: three dependent

variables, in districts with Republican incumbents and districts with Democratic incumbents.[2] The following equation states our general empirical model:

$$
\begin{aligned}
Evaluations_{ij} &= \beta_0 + \beta_1\, Personal\ Econ.\ Retrospections_{ij} + \beta_2\, National\ Econ.\ Retrospections_{ij} \\
&+ \beta_3\, Respondent\ Party\ ID_{ij} + \beta_4\, Female_{ij} + \beta_5\, Black_{ij} + \beta_6\, Distributive\ Benefits_j \\
&+ \omega_1\, Issue\ Ad\ Balance_i + \omega_2\, (Benefits_j \times Issue\ Ads_i) + \omega_3\, Nationalism\ Ad\ Balance_i \\
&+ \pi_{11}\, Awareness_i + \pi_{12}\, (Aware._i \times Benefits_j) + \pi_{13}\, (Aware._i \times Issue\ Ads_i) \\
&+ \pi_{14}\, (Aware._i \times Benefits_j \times Ads_i) \\
&+ \pi_{21}\, Liberal_i\, [L_i] \\
&\quad + \pi_{22}\, (L_i \times Aware_i) \\
&\quad + \pi_{23}\, (L_i \times Benefits_j) \\
&\quad + \pi_{25}\, (L_i \times Aware_i \times Benefits_j) \\
&\quad + \pi_{24}\, (L_i \times Issue\ Ads_i) \\
&\quad + \pi_{26}\, (L_i \times Aware_i \times Ads_i) \\
&\quad + \pi_{27}\, (L_i \times Benefits_j \times Ads_i) \\
&\quad + \pi_{28}\, (L_i \times Aware_i \times Benefits_i \times Ads_i) \\
&+ \pi_{31}\, Conservative_i\, [C_i] \\
&\quad + \pi_{32}\, (C_i \times Aware_i) \\
&\quad + \pi_{33}\, (C_i \times Benefits_j) \\
&\quad + \pi_{35}\, (C_i \times Aware_i \times Benefits_j) \\
&\quad + \pi_{34}\, (C_i \times Issue\ Ads_i) \\
&\quad + \pi_{36}\, (C_i \times Aware_i \times Ads_i) \\
&\quad + \pi_{37}\, (C_i \times Benefits_j \times Ads_i) \\
&\quad + \pi_{38}\, (C_i \times Aware_i \times Benefits_i \times Ads_i)
\end{aligned}
$$

Let us briefly catalogue our expectations. We expect voters will express more favorable opinions of incumbents with whom they share a party identification, which is represented by the coefficient β_3. We expect voters will express more favorable opinions of incumbents who attain distributive benefits, which is represented by three coefficients: β_6, π_{12}, π_{13}, and π_{14}. To the extent that the effect of distributive benefits is conditional on awareness, π_{12} will be more meaningful; if the effect of distributive benefits is conditional on advertising, or advertising *and* awareness, then π_{13} or π_{14} will be more substantively meaningful, respectively.

Our own theory holds that politically aware conservatives will express *less* favorable opinions of Republican incumbents who attain distributive benefits. Testing

[2] In contrast to Chapter 5, the dependent variables used here are evaluations of the incumbent and Congress as a whole. These variables are described in detail in the following section.

our theory requires inclusion of two four-way interactions, and all constituent two- and three-way interactions, multiplying the interaction of distributive benefits, awareness, and issue advertising, by separate dummy variables for liberal respondents and for conservative respondents. We rely on the self-reported identification of respondents for our ideological measures. If our hypothesized effect is correct then the expected coefficient, π_{35}, will be meaningful in the Republican incumbent equation. Additionally, if the effect of ideology is contingent on the credit claiming activities of the representative— i.e., if campaign advertisements are a complement to awareness— then coefficient π_{38} will be more substantively meaningful. Alternatively, if campaign advertisements act as a substitute for awareness, then coefficient π_{37} will be more substantively meaningful instead. Note finally that if awareness is not a necessary condition to activate conservatives' distaste for pork-barreling incumbents, then coefficient π_{33} will be meaningful.

Data

Testing the implications of our theoretical model requires merging data from three sources. In this section we journey quickly through a survey, a database of distributive expenditures by the federal government, and a database of campaign advertisements, before we arrive at our empirical analysis.[3]

Individual Characteristics: Incumbents, Ideology, and Awareness

We utilize the "Exercising Citizenship in American Democracy" survey conducted by Indiana University during the 2002 midterm election. The 2002 Exercising

[3] Summary statistics for all variables are in Table A2.5 in Appendix 2.

Citizenship Survey focuses almost entirely on Congress, making it a rich source of data on opinions about both individual members and the institution as a whole.[4] For our dependent variables, we adopt the approach of Mondak, et al. (2007), although we develop three separate scales. To create a measure of incumbent performance, we create an alpha-scale using four questions. For congressional performance, we use the same questions as Mondak, et al. (2007), but include an additional question asking whether the activities of Congress have an important impact on the respondent's everyday life. Exploratory factor analysis yields two factors. We call the first factor "Congressional Efficacy," because the items with the largest loadings relate to a sense that Congress is doing the "right" things. We call the second factor "Congressional Work Ethic," because the items with the largest loadings relate to a sense that Congress is working hard. The questions, as well as the factor loadings for the congressional performance items, are presented in Table 6.1. After scaling, we standardized all three variables by subtracting the mean and dividing by the standard deviation. Thus, for incumbent favorability, congressional efficacy, and congressional work ethic, the value for each measure is the respondent's number of standard deviations from the mean value.

[Tables 6.1 and 6.2 here]

Our measure of political awareness is derived from the alpha-scaling of twelve knowledge items, which are listed in Table 6.2. Prior to scaling, we coded correct responses as 1 and incorrect responses as 0. The final measure of awareness is trichotomous, scored 1 if the respondent is more than one standard deviation above the mean of the scale, 0 for within one standard deviation of the mean, -1 for more than one standard deviation below the mean.

[4] A detailed discussion of the survey can be found in Mondak, et al. (2007).

Individual Characteristics: Control Variables

We also control for several factors that should affect how individuals rate their representatives and Congress. First, we include two measures of economic sentiment: personal and national economic retrospections. Responses were coded from -2 (gotten much worse) to 2 (gotten much better). Economic sentiment, given that Republicans controlled both the presidency and the House, should only significantly affect the evaluations of respondents residing in Republican districts. We also include the party identification of the respondent, coded -3 (strong Democrat) to 3 (strong Republican). Naturally, we expect party identification to have a positive effect on evaluations of Republicans and a negative effect on evaluations of Democrats. As in Chapter 5, we also control for demographic characteristics by including two dummy variables, one scored 1 for women and another scored 1 for blacks.

Distributive Benefits and Campaign Advertising

Consistent with the rest of this dissertation, the measure of distributive benefits used is the difference between the log of real spending on new, direct payment programs in each district and the log of the chamber mean of real spending on the same programs.[5] In order to measure credit claiming and political information, we use campaign advertising data focusing on House races, drawn from the Wisconsin Advertising Project. For a given respondent, we include all House advertisements airing in the media market(s) corresponding to the recorded congressional district. In constructing a measure of information, we wanted to ensure that we accurately reflected both the focus and the balance of the messages available to respondents. For focus, we use the percentage of

[5] All terms are defined in Chapter 2.

advertisements addressing issues that could involve distributive benefits. The percentage gives us an idea of how saturated the political information is by the same message. Zaller (1992) posits that responses to information are more consistent when messages are more imbalanced in favor of one position or another; for our purposes, we account for this by measuring information as the *net* amount of credit claiming information. That is, our advertising measure is the difference between the percent of all House-related ads that are pro-incumbent and anti-incumbent that address issues that could involve distributive spending. A list of these topics is provided in Table 6.3.

[Table 6.3 here]

An important note about the advertising measure is that our dependent variables (i.e. incumbent and congressional evaluations) come from items in the pre-election component of the Exercising Citizenship Survey, which occurred over a two-month period. In order to accurately reflect the information available to respondents at the time they evaluated both their representatives and Congress, we generated our advertising measure so that it only included ads that aired on or prior to the date each respondent answered the survey.[6]

Finally, like our measure of distributive benefit advertising, we include a measure of nationalism advertising. The measure is the same in construction (the difference between percent pro and anti-incumbent), but now we use ads that cover the following topics: defense, military, foreign policy, terrorism, Middle East, Afghanistan, or September 11th. We expect an increasing percentage of pro-incumbent nationalism ads to lead to more positive evaluations of representatives and Congress.

[6] While credit claiming could be a district level, or even media market level variable, constructing a measure that is dependent on the date the respondent answered the survey makes this an individual level measure.

Results and Discussion

Tables 6.4 and 6.5 present the results of our statistical models for districts with Republican incumbents and districts with Democrat incumbents, respectively. Our dependent variables are all continuous scales, therefore we estimate our models using ordinary least squares (OLS). Standard errors are also adjusted for clustering by congressional district. Table 6.4 provides initial evidence that awareness and credit claiming do condition the effects of distributive benefits when respondents evaluate their incumbent directly. Although the interaction terms involving conservatives are not significant, this does *not* mean that conservatives do not respond negatively to distributive benefits, rather it means only that conservatives do not differ significantly from moderates. Liberals, on the other hand, do exhibit significantly *positive* reactions to distributive benefits, but only when interacted with awareness and credit claiming. We expected that the more interesting effects would be for conservatives, due to the emphasis of conservatism on limited government, particularly where the representative is Republican. We observe instead that politically aware liberals in high pork districts, where representatives do a fair amount of credit claiming, reveal more favorable opinions of their representatives than would be expected given their natural disposition against Republican incumbents.[7,8]

[Tables 6.4 and 6.5 here]

When evaluating Congress, however, conservatives in Republican districts are the distinguishable group, as predicted. In the second and third columns, aware liberals and

[7] The interaction between liberal, awareness, ads, and benefits is significant and positive.
[8] The interaction between awareness, ads, and benefits is significant and negative. The null interaction between these three terms and conservative indicates that there are no differences between conservatives and moderates. The baseline effect for moderate, however, does apply to conservatives (as it does for liberals also).

moderates respond favorably to more benefits[9] (*awareness x benefits*) and to credit claiming[10] (*awareness x ads*), especially in high pork districts[11] (*awareness x ads x benefits*). Aware conservatives are less favorable in all of the same circumstances.[12] We also find that economic retrospections, both pocketbook and sociotropic, have direct effects on evaluations of Congress. Our findings also contradict Mondak, et al.'s (2007) findings that awareness has a conditioning effect on other factors, but does not have a direct positive effect. This is true of congressional efficacy evaluations both in Republican districts and, as will be seen later, in Democratic districts.

Turning our attention to Democratic districts, all of the significant effects in Table 6.5 appear with respect to evaluations of the incumbent, and not Congress as a whole. One explanation for this is that constituents are attributing credit or blame for the incumbent's actions to the Democratic incumbent individually, being a member of the minority party in the chamber. For moderates at middle levels of awareness, credit claiming leads to higher evaluations of the incumbent, which is also true for liberals and conservatives at the mean level of benefits. Unaware liberals and conservatives rate representatives less favorably as benefits and credit claiming increase. In this case, campaign advertising acts as a substitute for political awareness, but these unaware individuals cannot necessarily formulate ideologically consistent reactions. Conservatives in Democratic districts are still behaving in an ideologically consistent manner without advanced political knowledge, but liberals in Democratic districts are

[9] This is when information is balanced.
[10] This effect would be for the average amount of benefits in 2002.
[11] What is interesting about these results is that in high pork, high credit claiming districts, moderates are less favorable towards the representative, but more favorable towards Congress. We will discuss this later in the paper.
[12] When information is balanced, the net effect of benefits for aware conservatives is: (0.309 + 0.160 **– 0.284**). The effect of credit claiming when benefits are at their mean is: (0.309 + 0.025 **– 0.062**). The total effect when benefits equal 1 and information equals 1 is: (0.309 + 0.025 + 0.015 **– 0.284 – 0.062 – 0.041**).

not. Among the politically aware, liberals (and moderates) are increasingly favorable as credit claiming increases, especially when credit claiming is coupled with increasing benefits. Conservatives, as expected, are less favorable towards Democrats as credit claiming increases.

With respect to control variables, we find that Democrats who devote some advertising to nationalist themes or discussing issues of national security are typically evaluated more favorably. We did not observe this effect for Republicans, and we conjecture that Republicans already get credit for being strong on national security, so further advertising does not strengthen this effect. Democratic incumbents do, however, benefit personally from a national security focus to their campaign advertisements. These models are complex and contain several interactions many of which are statistically significant. To ease interpretation, we offer Figures 6.1 through 6.8, which graphically present the relationships estimated in Tables 6.4 and 6.5. Generally, all of the figures plot predicted evaluations on the vertical axis and variations in pork barrel spending on the horizontal axis. The values on the horizontal axis are in terms of real, new spending on direct payment programs; we translated specific values of our measure of distributive benefits to their real dollar amounts. Additionally, all of the figures assume "high" credit claiming—that is a complete imbalance in the messages presented during the campaign, all in favor of the incumbent.[13] Figures 6.1, 6.2, and 6.3

[13] To be specific, predicted values for each measure were generated holding all variables at their sample medians for categorical variables (sample mean for nationalism advertising) except ideology, awareness, issue advertising, and distributive benefits. The graphs all plot aware individuals, thus awareness was set to its maximum: 1. Also, credit claiming was set to its maximum which is a value of 100, whereas the variable measures the difference between the percent of ads addressing specific issues run in favor of the incumbent and the percent ads addressing specific issues run attacking the incumbent. The maximum would suggest an incumbent campaign completely focused on "distributive" issues with no ads attacking the incumbent on these issues. For ideology, we set the liberal and conservative dummy variables to 1 or 0 depending on which identifiers we were predicting values for.

respectively plot predicted incumbent favorability, evaluations of congressional work ethic, and evaluations of congressional efficacy in Republican districts for aware conservatives. Figure 6.4 also looks at evaluations of aware conservatives, but for incumbent favorability in Democratic districts. Figures 6.5 through 6.8 are comparable to Figures 6.1 through 6.4 in all respects except the evaluations are for aware liberals. Finally, in addition to the predicted value, standard error bands have also been included for the estimates.

[Figures 6.1 through 6.8 here]

Conservative Reactions to Distributive Benefits

Looking beyond the results presented in Tables 4 and 5, the figures above clearly demonstrate that aware conservatives are significantly more disapproving of their representatives *and* Congress as whole when: (1) they are represented by a Republican, (2) their Republican representative secures larger than average distributive spending, and (3) their representative actively advertises the existence of these projects. Recall that the dependent variables are measured in terms of standard deviation changes from the mean evaluation. In districts with Republican representatives that have actively sought to limit spending, namely by not participating in large scale pork barreling, and likely advertised on this, aware conservatives are far more approving of the representative. Looking at Figure 6.1, at the minimum value of benefits moving almost to the sample mean of benefits, aware conservatives are more favorable towards the incumbent and the standard error bands do not reach zero. Likewise, at the high end of benefits, aware conservatives are far more disapproving of the incumbent—again zero is outside the bounds of the

error. This trend is also observed for both evaluations of Congress with even stronger results; the estimates are themselves larger and the error bands more narrow, particularly at the high end of pork barreling (see Figures 6.2 and 6.3).

Why, however, are results stronger for congressional evaluations? Distributive benefits, as they have been defined in this dissertation and treated throughout the body of literature on the subject, are in their essence particularistic. They are secured by specific representatives to target specific areas thus it is perplexing that shifts in benefits yield stronger reactions for and against the institution than the particular representative. We offer two explanations for these observations, one empirical and one theoretical. Empirically, the questions used to derive the congressional evaluation scales may be more conducive to finding variation caused by reactions to distributive benefits. Three of the four questions relating to incumbent performance are very general in their focus, asking about favorability and a general sense of approval. In contrast, we identified nine questions relating to congressional performance, all of which are substantively distinct from approval-type questions. If we had incumbent performance items that were of the same caliber as the congressional items, we believe the results for incumbent evaluations would be just as strong as the results we obtain for congressional evaluations. To be more specific, items that asked whether congressional activity has an important impact on daily life, whether members are electorally minded, and whether Congress wastes taxpayers' money, which had the highest loading on the efficacy scale, may be more related to pork barreling in the minds of respondents.

Theoretically, "wasteful" spending may be more of a congressional trait than an incumbent trait. When individuals consider how much money the federal government

spends on distributive programs, their reactions might first identify Congress as the culprit. Therefore, when the government behaves in a fiscally responsible or irresponsible manner, Congress is held to account. How then does the representative factor into reactions to distributive politics? First, the representative is, to be redundant, the individual's representative in Congress. What the representative does and claims credit for doing reflects on both her and the institution. Second, from the opposite perspective it may be that congressional performance translates into evaluations of the representative—Congress is not accountable to the individual, but the representative is, which may have more consequences for Republicans in this study both because of reputations for limited spending and their status as the majority party.[14] It is only in Republican districts, recall, that distributive benefits have significant effects on *congressional* evaluations.

Turning to Democratic districts, there appears to be a general increase in favorability towards the incumbent as the incumbent secures more distributive spending. This runs counter to our theoretical expectations regarding ideological consistency, but is consistent with theories of issue ownership and reputation. We never predicted that aware conservatives would become approving of Democrats who secure large amounts of spending, but Figure 6.4 does not show significantly more favorable evaluations. Again, the predicted evaluations increase, yet zero, the scale mean, is within one standard error of the estimate throughout the range of benefits. Thus, considering aware conservatives,

[14] There has been some work describing Fenno's paradox, which posits that individuals tend to be favorable towards their representative while disapproving of Congress as a whole. We find no evidence of that here. We also estimated four seemingly unrelated regressions using incumbent favorability and each of the congressional evaluations as endogenous variables (two models) for Republican and Democratic districts. The results suggest a strong positive relationship between evaluations of the incumbent and evaluations of Congress, consistent with the findings of Born (1990) and McDermott and Jones (2003).

Democrats are no more favorable when they strictly limit or completely unrestrict their distributive spending.

Liberal Reactions to Distributive Benefits

Liberals in Republican districts look a great deal like conservatives in Democratic districts. The slopes of the lines plotted in Figures 6.5, 6.6, and 6.7 are relatively flat, as in Figure 6.4, and there are few values of distributive benefits in which the estimates are more than one standard error away from zero. For incumbent favorability and evaluations of congressional efficacy, there is some propensity on the part of aware liberals to have lower than mean evaluations when benefits are around their sample mean, about $230 million less than the mean of the chamber. It is only around the sample mean that zero remains outside of the standard errors bands and only on these two evaluations. Despite this, there is some evidence that aware liberals do become more favorable towards Republican incumbents and Congress as benefits increase, given a high amount of credit claiming. The results, however, are quite different for evaluations of Democratic incumbents, contrary to what we expect. In Figure 6.8, we see that aware liberals are significantly more favorable towards Democrats who limit spending and credit claim, with evaluations becoming less favorable as benefits increase until, at around the chamber mean, they become indistinguishable from the mean evaluation. An important note to make is that, statistically, awareness is not a conditioning factor on the observed effects; aware liberals react the same as those with low or moderate awareness (values of -1 and 0). Yet we must still consider why aware liberals appear to behave in

an ideologically consistent manner, forming evaluations we might expect for the unaware.

One possible explanation is that aware liberals are not behaving inconsistently; they are just not statistically differentiated from unaware liberals. Given the small sample size (257) and the complexity of the model, there are not enough aware liberal respondents in Democratic districts. The general observation is that self-identified liberals moderate their evaluations of Democratic incumbents as pork and credit claiming increase. And this result is based off of thirty-eight liberals, only nine of which are above one standard from the mean of political awareness. We favor this explanation given the results reported in Chapter 5. Over the period from 1984 to 2004, liberals, aware or otherwise, do not show any tendency for punishing Democrats electorally who secure larger amounts of distributive benefits. We expect that those who cannot form ideologically consistent views become more approving of representatives who secure more benefits. Adding advertisements as a conditioning factor, however, may necessitate formulating more specific hypotheses. We have assumed, and reasonable so, that our issue advertisements in favor of the incumbent are reflective of credit claiming. It may be that Democrats who focus on credit claiming for distributive projects are not getting the credit they deserve because of the national political environment surrounding the 2002 congressional elections. We report in Table 6.5 that Democrats who focus advertisements on national security or foreign policy themes are evaluated more favorably. We speculated that Republicans already have a strong reputation on national security thus it is more important for Democrats to bolster their credentials in this policy arena. Running too many credit claiming advertisements and actively seeking

distributive benefits in the year following September 11th could cause constituents to think that the representative is not attending to the most important issue of the day.

What about congressional evaluations in Democratic district? Clearly, we were selective in the figures we presented, opting to focus on high credit claiming and aware individuals, although in some instances the results would mirror the unaware. We also look only at incumbent evaluations for Democratic districts. The reason for this is that constituents in these districts do not seem to vary in their evaluations of Congress based on distributive benefits. Distributive benefits do have a significant effect on evaluations of congressional efficacy, but this effect is not conditioned by ideology, awareness, or advertising. As alluded to above, we suspect that pork barreling only effects incumbent evaluations in Democratic districts because Democrats are in the minority.[15]

The Effects of Credit Claiming on Evaluations

What effects does explicit credit claiming by the incumbent have on evaluations of the incumbent and Congress? Credit claiming serves as the catalyst to observing our hypothesized effects. Pork barreling hurts Republicans among conservatives (and moderates) *if they advertise the existence of these projects*. Looking within each level of benefits, it is only when there is an imbalance of information in favor of the incumbent (credit claiming) do we see the "correct" effects for benefits. These effects can be observed simply by looking at the coefficients presented in Tables 6.4 and 6.5. Look, for example, at the effects for aware conservatives on congressional work ethic evaluations

[15] At the time the pre-election surveys were given, Democrats held a majority of the Senate. The House, however, remained in Republican control thus we find it very likely that respondents considered Democratic representatives members of the minority party in *Congress*. In fact, 52.1% of respondents to the pre-election survey said that Republicans were the majority party in the Senate.

in Republican districts. The coefficient is -0.041. Holding our benefits measure constant at its minimum (-3.81), conservative at 1, and awareness at 1, we see the following effects. When credit claiming is at is maximum (100), the effect is equal to: -0.041 x 1 x 1 x -3.81 x 100 = **15.62**. Moving credit claiming to its minimum (-68.28), the effect becomes **-10.67**. Distributive benefits are still at their minimum, but the lack of advertising on the part of the incumbent has lead to negative evaluations.

Put another way, in the absence of credit claiming, and when the incumbent is under attack in the campaign, distributive benefits have the opposite effect of we expected. Consider again Republicans who limit spending in their districts. Advertising this would appeal to aware conservatives, who seem eager to reward their representative for being fiscally conservative. Not supplying this information, however, leaves representatives open to claims that they have not done an adequate job addressing the needs of the district. Thus the same aware conservatives become less favorable towards the incumbent because they do not have enough information to credit their representative for working to limit government.

Conclusion

It is, again, widely accepted that distributive spending and the electoral fortunes of incumbent congressmen are positively linked, and it is also because of the purported electoral benefits that we observe the steady increase of distributive spending over time. Traditionally, the theoretical literature assumes that constituents are rational *economic* actors in that they always prefer receiving more benefits to less, while the mechanisms that control how individuals react to distributive spending in their districts remain a black

box. Only Stein and Bickers (1994a) provide some explanation about what motivates individual behavior; they find that recall of incumbent activity significantly increases favorability towards the incumbent and the likelihood that an individual will vote for the incumbent. In this chapter, we take several important steps to open the box.

In Chapter 3, it was discovered that there is a partisan bias in these effects; Republican incumbents do not benefit in the same way as Democrats. In Chapter 5, the link was made to individual voters with findings that politically aware conservative voters are less likely to vote for Republican incumbents that secure large amounts of distributive benefits. In this chapter, we further explain the mechanisms through which individuals come to be cognizant of their representative's distributive activities. Throughout this dissertation, several factors that condition the effects of distributive benefits have been identified generating more accurate explanations about how *different* individuals respond to distributive benefits. Republicans who increase their share of the distributive pie do not receive the same increases in favorability that Democrats receive, because of the negative reactions of politically aware conservatives, who are more likely to oppose government spending generally. Awareness acts as a critical moderator, however, in that only politically aware conservatives are able to link Republicans to a reputation for limited government, link their conservatism to preferences for less spending, and, combining these, evaluate Republicans who obtain more benefits less favorably. In this chapter, we help to explain the mechanisms through which individuals become knowledgeable about distributive benefits by including campaign advertisements, an important source of information on the activities of Congress and representatives. We find that aware conservatives, who are exposed to credit claiming by

the incumbent, evaluate incumbents who attain a great deal of pork less favorably. While our results apply only to representative evaluations in 2002, we are confident that we have identified a major source of information on the distributive activities of representatives and demonstrated relationships that generally apply to the electoral effects of distributive benefits.

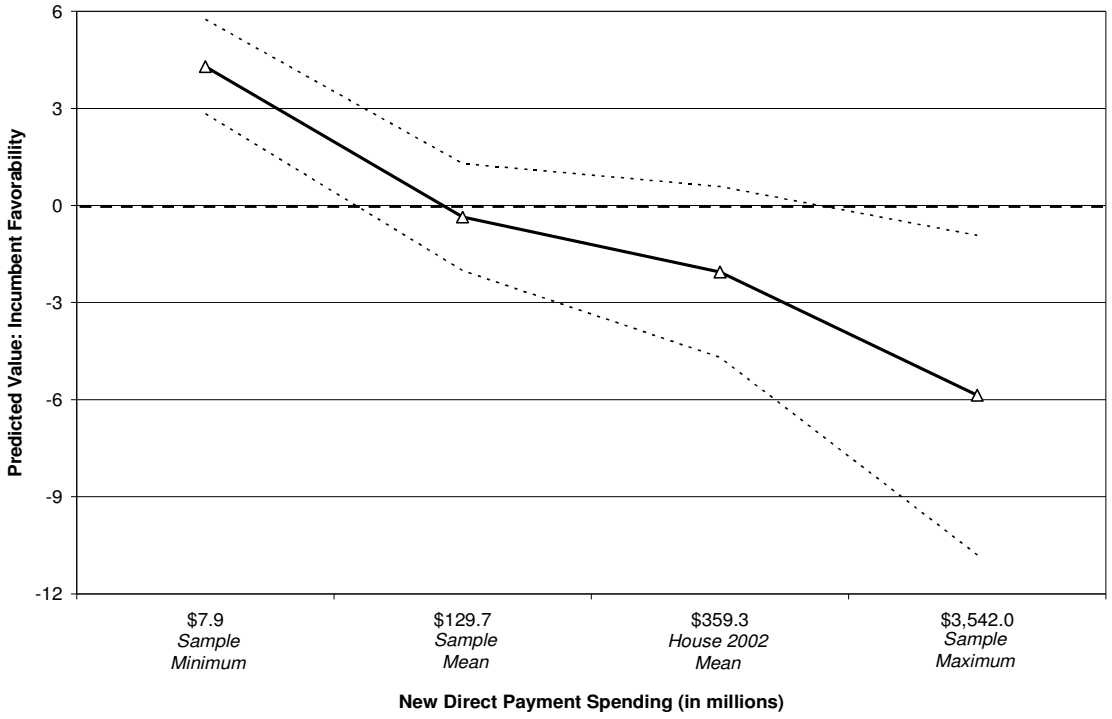

Figure 6.1
Aware Conservative Evaluations of Incumbents in Republican Districts

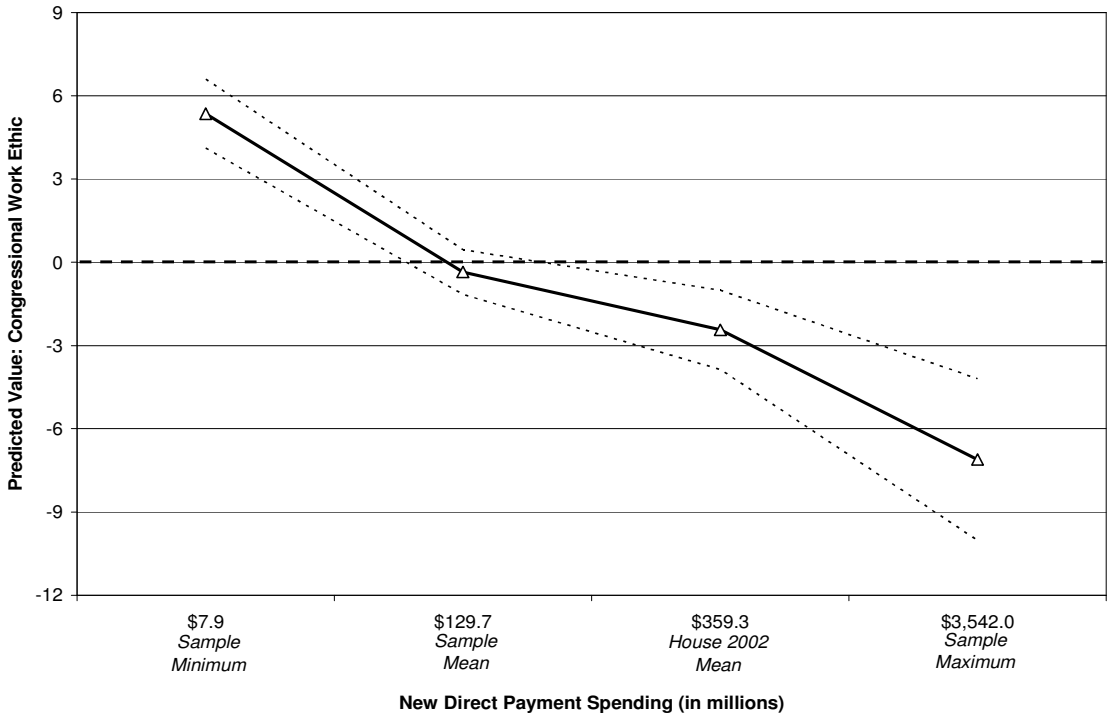

Figure 6.2
Aware Conservative Evaluations of Congress in Republican Districts (Work Ethic)

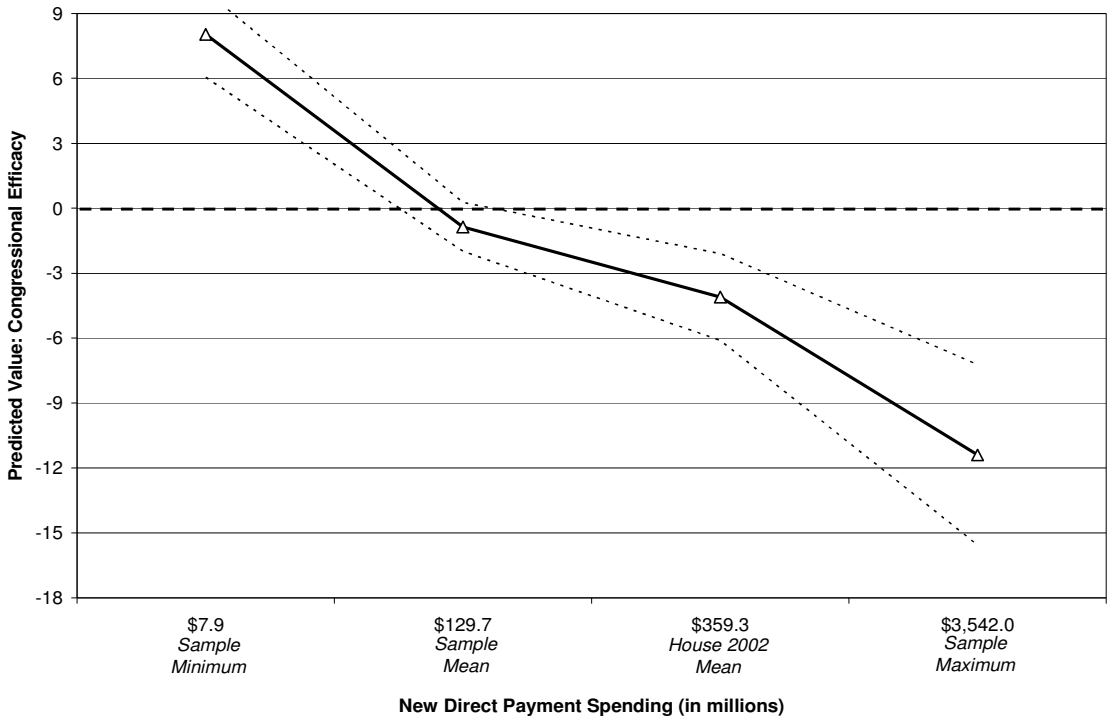

Figure 6.3
Aware Conservative Evaluations of Congress in Republican Districts (Efficacy)

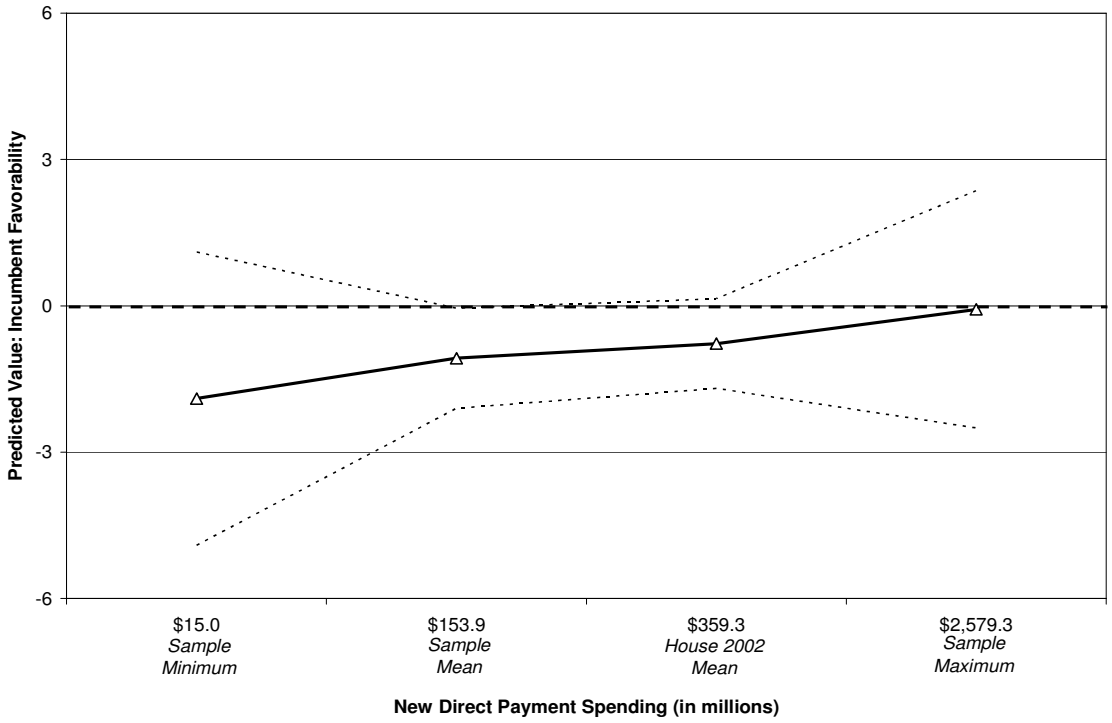

Figure 6.4
Aware Conservative Evaluations of Incumbents in Democratic Districts

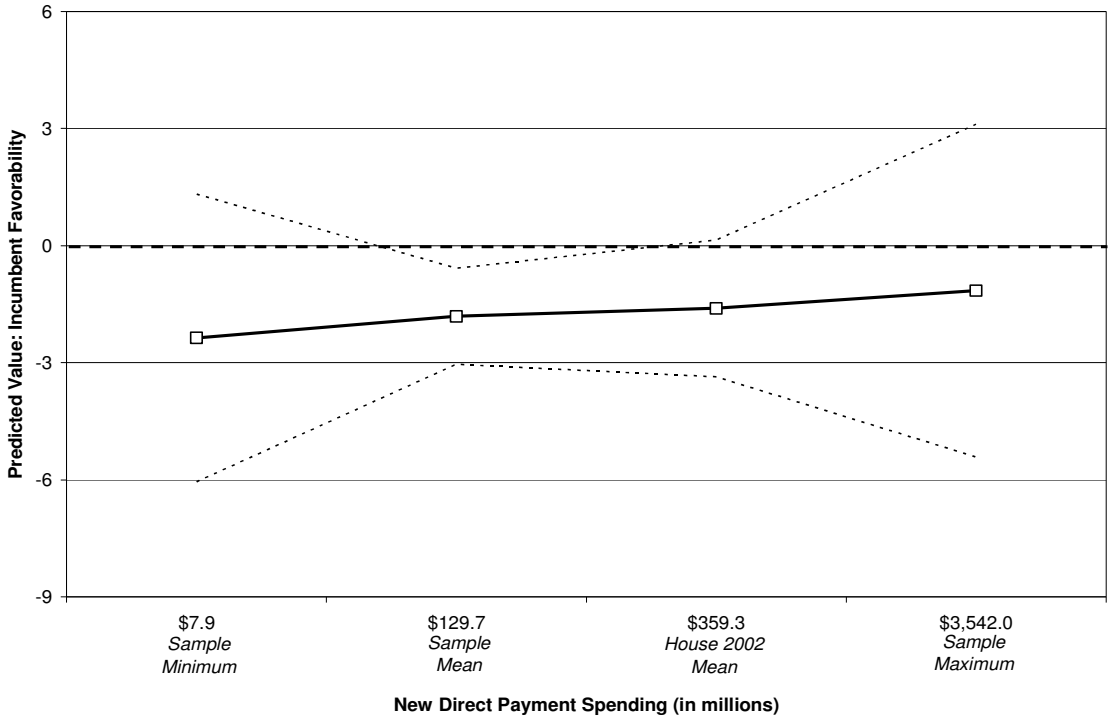

Figure 6.5
Aware Liberal Evaluations of Incumbents in Republican Districts

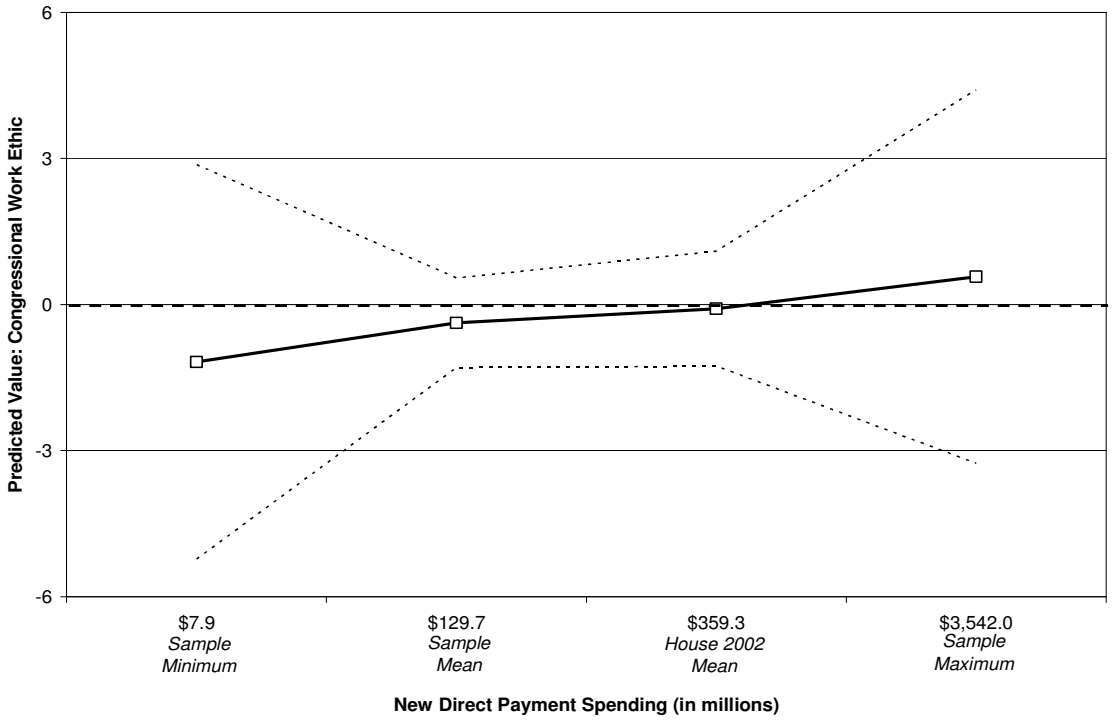

Figure 6.6
Aware Liberal Evaluations of Congress in Republican Districts (Work Ethic)

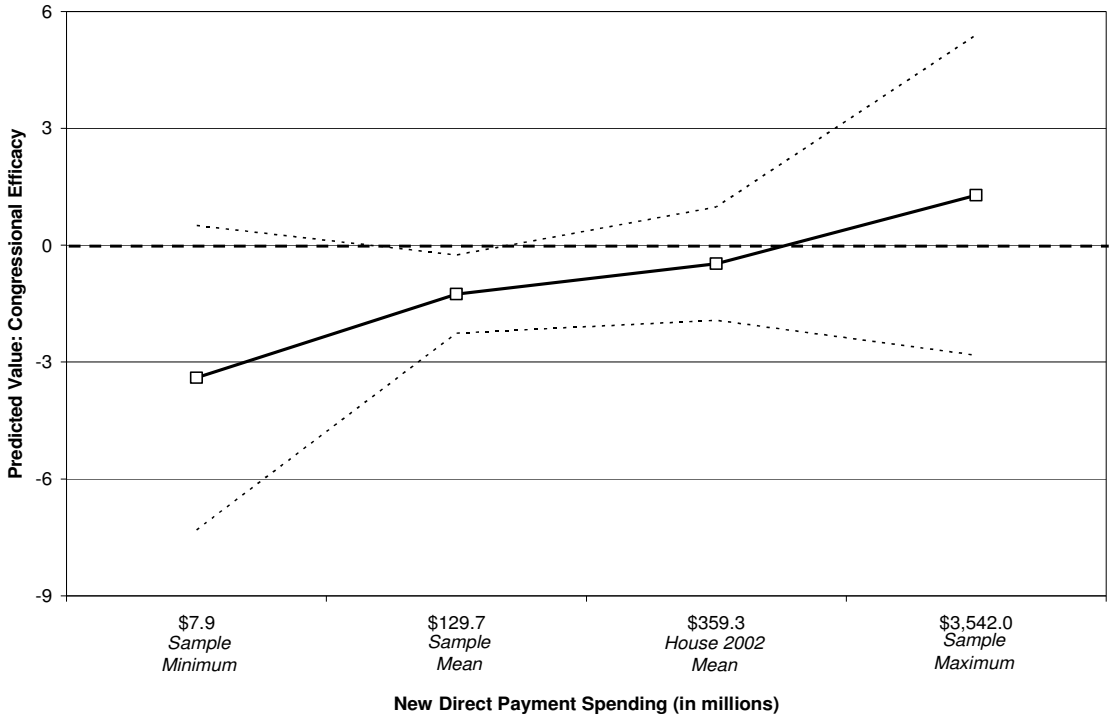

Figure 6.7
Aware Liberal Evaluations of Congress in Republican Districts (Efficacy)

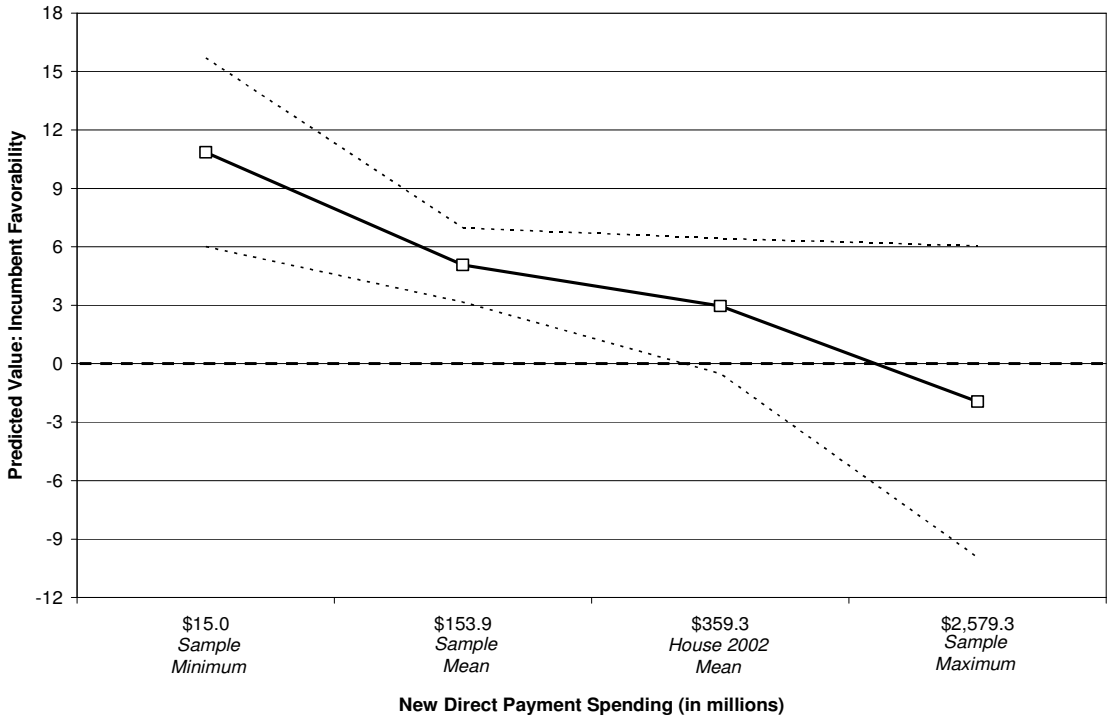

Figure 6.8
Aware Liberal Evaluations of Incumbents in Democratic Districts

Table 6.1
Incumbent and Congressional Evaluation Scales

Incumbent Performance Questions

How (favorable) do you feel towards your current representative in the U.S. House?
(Do you strongly approve, somewhat approve, somewhat disapprove, or strongly disapprove of) the job your current representative in the U.S. House is doing:
… as a legislator in Washington D.C.?
… in taking care of specific needs at home in the district?
How well does your House member represent your views?

Alpha 0.78

Congressional Performance Questions	*Factor 1 Efficacy*	*Factor 2 Work Ethic*
Senators and House members don't care much what people like you think.	**0.58**	0.06
The problem with Congress is that the House members and Senators spend all their time bickering instead of cooperating.	**0.56**	-0.07
Most members of Congress will tell lies if they feel the truth will hurt them politically.	**0.53**	0.09
Most members of Congress work hard at their jobs.	0.17	**0.46**
Most members of Congress are poorly informed about important issues.	**0.39**	-0.03
Most members of Congress are honest.	0.18	**0.47**
Most members of Congress spend more time trying to get reelected than doing work in Congress.	**0.59**	0.11
Most members of Congress waste a lot of taxpayers' money.	**0.60**	0.10
How much of that activity (in Congress) has an important impact on your daily life.	-0.12	**0.18**

Note: All questions were four or five point scales and were recoded so that higher values reflected more favorable ratings of representatives and Congress. Cells in the Congressional Performance panel are factor loadings. Bold cells denote items that correlate highly with the underlying factor.

Table 6.2 **Political Knowledge Questions**	
Who has the final responsibility to decide if a law is unconstitutional or not? Whose responsibility is it to nominate judges to the Federal Courts? Which one of the parties is more conservative than the other at the national level? How much of a majority is required for the U.S. Senate and House to override a presidential veto? What is the main duty of the U.S. Congress? Which party has the most seats in the U.S. House of Representatives? Which party has the most seats in the U.S. Senate? How long is the term of office for a United States Senator? How long is the term of office for the U.S. House? If the House and Senate pass different versions of a bill, what happens? Where in Congress does most of the work on legislation take place? If there is a tied vote in the Senate, who casts the tie-breaking vote?	
Alpha	0.72

Table 6.3 **Topics Addressed in Credit Claiming Advertisements**
Accountability of Government Programs
Agricultural Food Markets
Agriculture
Agriculture Issues
Aid to Homeowners
Big Government
Business (e.g. Friend of)
Constituent Service / Casework
Deficit / Surplus / Budget / Debt
Farm Subsidies
Farming (e.g. Friend of)
Federal Funding for Local Issues
Government Spending
Local Issues
Pork Production
Special Interests
Special Interests Money
Taxes
Transportation, Affordable Housing
Transportation, Agriculture, Small Business
Transportation, Better Roads
Transportation, Research and Development
Transportation, Tolls
Transportation Funding
Transportation Issues

Table 6.4
The Effects of Credit Claiming and Distributive Benefits in Republican Districts

Variables	*Incumbent Favorability*		*Congressional Work Ethic*		*Congressional Efficacy*	
	Coef.	*SE*	*Coef.*	*SE*	*Coef.*	*SE*
Personal Retro.	0.003	0.032	0.076**	0.038	0.081**	0.035
National Retro.	-0.017	0.050	0.090*	0.047	0.082*	0.049
Resp. PID	0.085***	0.026	-0.009	0.029	0.015	0.023
Female	0.187*	0.102	0.153	0.105	0.105	0.096
Black	-0.230	0.245	-0.684**	0.293	-0.624***	0.194
Benefits	0.017	0.050	-0.031	0.051	0.049	0.041
Issue Ads	0.009	0.008	-0.007	0.009	0.003	0.007
x Benefits	0.004	0.004	-0.001	0.005	0.003	0.004
Nationalism Ads	0.003	0.006	0.006	0.006	0.002	0.006
Awareness	-0.093	0.145	0.309**	0.142	0.237*	0.133
x Benefits	0.032	0.091	0.160*	0.087	0.144*	0.082
x Issue Ads	-0.016	0.012	0.025*	0.014	0.018*	0.010
x Ads x Benefits	-0.013*	0.007	0.015**	0.007	0.007	0.005
Liberal	0.009	0.263	0.091	0.152	0.139	0.206
x Awareness	0.204	0.311	0.285	0.219	0.340	0.290
x Benefits	0.020	0.152	0.052	0.118	0.051	0.137
x Issue Ads	-0.042**	0.018	-0.009	0.014	-0.018	0.015
x Aware x Benefits	0.025	0.170	-0.040	0.148	-0.118	0.174
x Aware x Ads	0.030	0.021	-0.018	0.019	-0.015	0.020
x Ads x Benefits	-0.017**	0.008	-0.004	0.008	-0.006	0.007
x Aware x Ads x Benefits	0.027*	0.014	-0.009	0.012	0.003	0.013
Conservative	0.147	0.146	0.178	0.115	0.100	0.123
x Awareness	0.053	0.270	-0.206	0.209	-0.361	0.251
x Benefits	0.029	0.080	0.056	0.075	0.022	0.085
x Issue Ads	0.000	0.010	0.016	0.013	0.001	0.011
x Aware x Benefits	-0.034	0.161	-0.284*	0.147	-0.358**	0.170
x Aware x Ads	-0.016	0.029	-0.062**	0.024	-0.064**	0.025
x Ads x Benefits	0.004	0.006	0.007	0.007	0.000	0.006
x Aware x Ads x Benefits	-0.012	0.013	-0.041***	0.012	-0.041***	0.012
Intercept	-0.099	0.106	-0.047	0.099	0.089	0.091
Individuals (N)	457		446		446	
Districts (J)	82		82		82	
Avg. N per J	5.573		5.439		5.439	
R^2	0.100		0.116		0.129	

* p < 0.1, ** p < 0.05, *** p < 0.01
Note: Standard errors are robust and adjusted for clustering by congressional district.

Table 6.5
The Effects of Credit Claiming and Distributive Benefits in Democratic Districts

Variables	*Incumbent Favorability*		*Congressional Work Ethic*		*Congressional Efficacy*	
	Coef.	*SE*	*Coef.*	*SE*	*Coef.*	*SE*
Personal Retro.	-0.019	0.042	0.015	0.049	0.075	0.048
National Retro.	-0.059	0.071	0.006	0.069	0.008	0.070
Resp. PID	-0.018	0.043	0.026	0.040	0.023	0.041
Female	0.211*	0.122	0.024	0.107	0.028	0.092
Black	-0.529**	0.214	-0.301	0.272	-0.309	0.243
Benefits	0.071	0.061	0.083	0.075	0.162*	0.083
Issue Ads	0.014*	0.008	-0.006	0.010	-0.014	0.008
x Benefits	0.008	0.006	0.000	0.008	-0.003	0.008
Nationalism Ads	0.009*	0.005	0.003	0.003	0.004	0.004
Awareness	-0.098	0.098	0.040	0.151	0.283*	0.155
x Benefits	-0.024	0.064	-0.079	0.082	-0.040	0.085
x Issue Ads	0.028***	0.007	0.012	0.010	-0.002	0.008
x Ads x Benefits	0.011*	0.006	-0.002	0.008	-0.002	0.007
Liberal	-0.053	0.175	-0.311	0.195	-0.192	0.228
x Awareness	0.474	0.352	0.237	0.331	0.070	0.370
x Benefits	-0.057	0.091	-0.097	0.104	-0.125	0.106
x Issue Ads	0.007	0.012	0.019	0.017	0.012	0.019
x Aware x Benefits	0.302	0.216	0.060	0.244	0.084	0.201
x Aware x Ads	-0.023	0.043	0.015	0.035	0.023	0.040
x Ads x Benefits	-0.025***	0.008	-0.012	0.011	-0.005	0.011
x Aware x Ads x Benefits	-0.021	0.028	0.020	0.025	0.010	0.022
Conservative	-0.046	0.214	-0.317	0.204	-0.499**	0.212
x Awareness	-0.182	0.195	-0.311	0.279	-0.326	0.262
x Benefits	-0.053	0.124	-0.068	0.109	-0.076	0.095
x Issue Ads	-0.007	0.012	0.018	0.013	0.022*	0.013
x Aware x Benefits	0.125	0.159	-0.023	0.176	0.028	0.158
x Aware x Ads	-0.042***	0.011	-0.027**	0.012	-0.003	0.010
x Ads x Benefits	-0.017*	0.010	0.000	0.010	0.009	0.010
x Aware x Ads x Benefits	0.000	0.012	0.009	0.012	0.001	0.011
Intercept	-0.112	0.125	0.300*	0.156	0.354**	0.140
Individuals (N)	257		250		250	
Districts (J)	55		55		55	
Avg. N per J	4.673		4.545		4.545	
R^2	0.178		0.09		0.117	

* p < 0.1, ** p < 0.05, *** p < 0.01
Note: Standard errors are robust and adjusted for clustering by congressional district.

Chapter 7
1984 through 2004 in Perspective

1984 through 2004 proved to be a particularly interesting period of American history to examine, especially with respect to Congress and congressional elections. Many studies on the electoral effects of distributive benefits have focused on one election, usually 1988 or 1990. Those that examine multiple elections have exclusively studied periods in which Democrats held majorities in Congress. If for no other reason, this dissertation is an improvement over past work because it looks at a period of time in which Democrats *and* Republicans are in control of Congress. The findings reported throughout have been surprising, given the existing theoretical and empirical literature.

First, it was discovered that there are significant partisan differences in distributive spending. Certainly, one can find members of both parties that enjoy the excesses of the pork barrel. Yet Republicans are found, on average, to secure fewer benefits than Democrats. What is even more remarkable is that the significant differences appear *after* Republicans gain the majority in the House. Majoritarian theories would predict that Republicans during this period secure more spending; universalism would hold that the partisan distinctions are minimal. Neither would expect the majority party to limit its share of the distributive pie. To explain this important result, a district level analysis of the electoral effects of distributive benefits was conducted. Why would Republicans, when they are in a position to secure spending that is thought to bolster the electoral prospects of representatives, limit themselves? The answer lies in how the pork barrel affects election outcomes. Both Republicans and

Democrats benefit directly from increasing the amount of distributive benefits in their districts, although not equally. Democrats derive more direct electoral benefits than Republicans. This result has been addressed by the literature. A new development reported here is that distributive spending has very different indirect effects on elections. While Democrats who increase their districts' share of distributive spending generally face weaker challenging campaigns, Republicans who dip to heavily into the pork barrel face challengers with *more* resources available to them, leading to a decreasing share of the vote for Republican incumbents.

Why do Republicans not receive the same electoral benefits as Democrats? Republicans represent a party that cherishes limited government, particularly in terms of government spending. Republicans also have as their core supporters individuals that are likely to prefer less government spending. But why would individuals prefer less in-district spending? The case is easy to make for general, national government spending, but existing theories of distributive politics are unable to answer the question of why individuals would prefer less spending in their own districts. Thus a theory of distributive benefits was developed stressing the conditioning effects of ideology and political awareness. As expected, it was found that politically aware conservatives are less likely to vote for incumbents as distributive benefits increase, which helps to explain the district level findings for Republicans. Aware conservatives are already unlikely supporters of Democratic incumbents, thus increasing distributive spending produces very few real political losses. Republicans, on the other hand, need the baseline of votes they typically receive from conservative constituents. Losing them risks losing elections.

A final question that was considered involved the role of information. Distributive benefits are often obtained without fanfare and presented to the public in terms of how the incumbent has worked for the district. Aware conservatives, however, are able to see through the clouds created by credit claiming and see distributive projects for what they are: more government spending. Credit claiming, coupled with increasing distributive benefits, leads to more negative evaluations of incumbents and Congress on the part of aware conservatives residing in Republican districts. The relationships uncovered here give detailed explanations for the effects of the pork barrel on elections and voting and help us assess how distributive benefits will impact future elections.

Explaining the 2006 House Elections

In the introductory chapter, I provided a quote from Senator John McCain and some discussion relating to the 2006 elections. Since taking control of Congress in 1995, the amount of strict pork barrel spending, as reported by the Citizen against Government Waste, has increased 260% to $29 billion. "Conservative" wisdom, if not the conventional wisdom, holds that Republicans lost Congress in large part because of wasteful government spending—not sticking to their conservative principles. The results reported here do support this assertion. At the district level, spending could have lead to stronger challenging campaigns against Republican incumbents; twenty-three Republican House incumbents failed to hold their seats in 2006. Many of these races were lost by very small margins. Chapters 5 and 6 show that conservatives, particularly politically aware conservatives, are less favorable towards and less likely to vote for pork-barreling incumbents, especially Republicans. Had Republicans simply gone too far over the

distributive cliff in 2006 to keep their power? The answer could be yes; without the data for 2006, it is impossible to say what impact distributive benefits had on voting. If Republicans have over-spent and tried to claim credit for their production, it is entirely within the results reported here that Republican incumbents lost support among those from whom they need it most—conservatives. At the district level, if distributive benefits were high, Republicans also faced stronger challenging campaigns. The current political climate (e.g. the War in Iraq, President Bush's approval, and the page scandal) already provided opportunities for strong Democratic challengers. These issues alone could be enough to weaken Republican incumbents and on top of that, vast distributive spending provides additional grounds to convince conservatives not to vote for Republicans and groups to donate money to Democratic challengers.

Republicans and Credit Claiming

What then are Republicans to do? Do they yield the realm of distributive politics to Democrats with partisan battles in Congress between how much to add and how much to cut? Republicans seem to do alright when they spend, but not over-spend. Recall, the important effects occur when in-district benefits are greater than the chamber mean. Even still, are there programs that Republicans *can* claim credit for without fear of electoral retribution? Bickers and Stein (2000) seem to have an answer. It was reported in Chapter 2 that Republicans have, on average, received fewer benefits than Democrats since becoming the majority party. What have they done since 1995? Bickers and Stein (2000) point to the growth of contingent liability programs. These are discussed briefly in Chapter 2 and constitute insurance and loan programs supplied by the Federal

Government. Given that insurance programs only pay out when there is a loss and loans eventually get repaid, these are programs that fiscal conservatives may not oppose on ideological grounds. Bickers and Stein (2000) report that spending on these programs had started to outpace more traditional distributive spending after Republicans gained control over Congress. Perhaps in the future, Republicans will look back on the last ten years and realize that their constituents are far more comfortable with certain types of programs. Not every district requires a large amount of distributive spending—some projects are always necessary, but one would think that rarely do most districts require far more than the chamber mean ($405 million in 2004). While Democrats are expected to secure more projects, and rewarded for doing so, Republicans may need to work hard at finding a better balance between distributive programs and contingent liabilities.

Given what was found in Chapter 6, it may also be that Republicans should spend less advertising money on traditional credit claiming. Some credit claiming certainly needs to be done, but Republicans appear better served giving just enough time to credit claiming while not saturating voters with information on local projects. All told, Republicans may simply need to be the party of moderation; moderation in their distributive spending and in their vociferousness regarding local benefits. All politics may be local, but local need not imply bloating of the federal budget.

The Future of Distributive Benefits Research

The inevitable question, even after the amount of the work presented over the last seven chapters, is what's next? As full as an examination as this was, there is one major place that the majority of empirical work on the electoral effects of distributive benefits

has not ventured: the Senate. Money spent by the federal government does not just go to specific districts; these districts are located within states. Thus the actions of representatives have implications for senators. Likewise, when senators are funding projects, the recipients live not only in a state, but in a district. Thus senators also affect the distribution of benefits to districts. Analysis of senatorial elections should proceed in a manner similar to the analyses presented here. There are likely to be partisan differences in the effects of benefits. Voters too probably vary in their voting behavior in Senate races based on levels of distributive spending, ideology, awareness, and credit claiming. Adding the Senate to the analysis, however, creates a variety of substantively interesting questions that future research should address.

Looking within the institution itself, do the same relationships estimated here exist for the Senate? Distributive benefits are inherently a local issue, albeit with national implications. Districts consider local politics, but how much of this carries over to the Senate? There is also the issue of how benefits are distributed. How do institutions like the filibuster, unanimous consent, and the six-year term change the nature of the pork barrel? Since bills require passage in both the House and the Senate, what are the implications of Senate procedures for distributions among districts? Are there coalitions that develop across chambers and do these coalitions later have an affect on the advertisements run during campaigns? What are the spillover effects across chambers within a state—for example can pork barreling, credit claiming senators do harm to fiscally conservative representatives from their state?

These are but a few of the questions that I hope to consider in future research. As important as understanding the rich variation in the House is, the work will not be

complete without considering the dynamics between the chambers and how these relationships play out among the American voters. What can be said regardless of how these questions are answered is that political awareness is the key to making distributive politics meaningful to the average American. There are large roles for legislators, challengers, candidates for open seats, interest groups, and commentators in disseminating political information and increasing the awareness of the mass public. In the realm of distributive benefits, there are varied preferences for the pork barrel, preferences that become clear as awareness increases and have a significant effect on decisions and outcomes. Legislators would do their best to pay heed to these preferences and give them strong representation, lest they find themselves some election night out of the office they tried to bribe the public to keep.

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Appendix 1
The Federal Assistance Award Data System

The data on distributive benefits in this paper come from the Federal Assistance Award Data System (FAADS), which is freely available from the Bureau of the Census starting from 1996. Data prior to 1996 can be obtained from Policydata.net, a website maintained by Kenneth Bickers and Robert Stein. The best description of the data comes from resources available on the Census website. The following is an excerpt from the FAADS 2005 Users' Guide:

> FAADS is a central collection of selected, computer-based data on Federal financial assistance award transactions, compiled quarterly. Each standard record is identified as being one of two possible types: county aggregate or action-by-action. Each action-by-action record contains such items as the name and location codes for the recipient (but not the address), the amount of awarded or amended Federal assistance (usually on the basis of the obligated amount), the Catalog of Federal Domestic Assistance program under which the award was made, and a project description. For some programs, primarily transfer payments to individuals and large volume loan programs for individual home ownership, data in the record are presented as aggregate amounts for all recipients in each county area. Such aggregate records do not contain all the data elements specified in the standardized format.

Reporting covers approximately 600 federal assistance programs. While primarily concerned with assistance to state and local governments, all major programs providing transfer payments to individuals, discretionary project grants, loans, or insurance are also covered. The long-term objective is to include in FAADS all Federal financial assistance programs. This includes all assistance programs listed in the *Catalog of Federal Domestic Assistance* (CFDA) as well as financial assistance awards made by federal agencies but not included in the CFDA.

FAADS, in addition to listing the assistance program and amount of money disbursed, gives several geographic variables associated with each outlay. Of interest to this research is the congressional district of the recipient. One of the problems with reporting in FAADS is that many outlays are multidistrict and thus have no district listed. Such data could be dropped from the analysis, but this would drastically underreport the amount of benefits flowing to a district. Instead of dropping all of these observations, I "corrected" as many of the district numbers as possible by matching district numbers to other reported geographies.

Specifically, I obtained from the Bureau of the Census and the Missouri Census Data Center a list of every five digit zip code tabulation area matched up to their district number or numbers for the redistricting periods after the 1980, 1990, and 2000 Censuses. Using this list, I assigned a district number to each outlay based on the zip code of the

reported recipient where district information was missing. Many zip codes in the United States are covered by more than one congressional district. In these cases, I applied the same outlay to all districts in the zip code. For example, zip code 01002, which is in Amherst, MA, has two districts associated with it: Massachusetts districts 1 and 2. If there was outlay of $100,000 in zip code 01002, I applied that $100,000 to both districts 1 and 2. While this leads to over reporting of distributive benefits, I felt this procedure was better than the alternative of dropping a significant portion of the data.

A second alternative, to prevent over reporting, would be to assign the outlay to the first district listed. I feel the method used was preferable to this approach. If the outlay was disbursed in the second district, the representative from that district does not get credit for it in the analysis. This result is even less preferable than dropping all of the unidentified outlays because instead of neither district getting credit for the outlay I would be assigning credit to the wrong district—leading to problems of over reporting and underreporting at the same time.

Another issue in the study of distributive benefits, no matter which data source is used, is the identification of redistributive, or entitlement, programs. Given the definition of distributive benefits established in Chapter 2, it was important to identify and segregate such programs from the particularistic benefits I wanted to examine. The list of redistributive programs draws largely from Stein and Bickers (1995), Appendix 3. I took the programs listed there and identified any changes in program numbers for these programs, flagging these program numbers as redistributive. Please see their work for this list of programs. Given that the last year of their analysis was 1990, it was necessary to flag any programs created since 1991 that would be considered redistributive. I used the programs identified in *Background Material and Data on the Programs within the Jurisdiction of the Committee on Ways and Means*, produced by the House Committee on Ways and Means (2004), as the basis for identifying additional programs not reported in Stein and Bickers (1995). The additional programs identified as redistributive are listed with their corresponding CFDA number in Table A1.1 on the following page.

[Table A1.1 here]

Table A1.1
List of Entitlement Programs Excluded from Analyses

CFDA Code	*Program Title*
10.410	Low Income Housing Loans
10.417	Very-Low Income Housing Repair Loans and Grants
10.560	State Admin Expenses for Child Nutrition
10.561	State Admin Matching Grants for Food Stamp Program
10.572	WIC Farmers Market Nutrition Program
10.578	WIC Grants to States
10.609	Trade Adjustment Assistance
11.313	Trade Adjustment Assistance
14.854	Public Housing Drug Elimination Program
17.253	Welfare-to-Work Grants to States & Localities
17.254	Welfare-to-Work Grants - Tribes & Alaskan Natives
17.267	Workforce Investment Act - Incentives Grants
17.802	Veterans Employment
21.006	Tax Counseling for the Elderly
57.001	Social Insurance for Railroad Workers
64.016	Veterans State Hospital Care
64.100	Automobiles & Adaptive Equip. for Disabled Veterans
64.101	Burial Allowance for Veterans
64.102	Compensation for Service-Connected Deaths for Veterans' Dependents
64.106	Specially Adapted Housing for Disabled Veterans
64.109	Veterans Compensation for Service-Connected Disability
64.114	Veterans Housing Loans
64.117	Veterans' Survivors & Dependents Educational Assistance
64.120	Post-Vietnam Era Veterans' Educational Assistance
64.124	All-Volunteer Force Educational Assistance
84.355	Child Care Provider Loan Forgiveness
84.906	Veterans Education
93.041	Special Program for the Aging
93.042	Special Program for the Aging
93.043	Special Program for the Aging
93.044	Special Program for the Aging
93.045	Special Program for the Aging
93.047	Special Program for the Aging
93.048	Special Program for the Aging
93.551	Abandoned Infants
93.558	Temporary Assistance for Needy Families
93.563	Child Support Enforcement
93.568	Low Income Home Energy Assistance
93.569	Community Services Block Grant
93.570	Community Services Block Grant Discretionary Awards
93.571	CSBG Discretionary Awards
93.575	Child Care & Development Block Grant
93.596	Child Care Mandatory & Matching Funds
93.603	Adoption Incentive Payments
93.647	Social Services R&D

Table A1.1 continued	
93.648	Child Welfare Services Training Grants
93.652	Adoption Opportunities
93.667	Social Services Block Grant
93.669	Child Abuse & Neglect State Grants
93.670	Child Abuse & Neglect Discretionary Activities
93.767	State Children's Insurance Program
93.775	State Medicaid Fraud Control
94.011	Foster Grandparent Program
96.001	Social Security - Disability
96.002	Social Security - Retirement
96.004	Social Security - Survivors
96.006	Supplemental Security Income
96.007	Social Security - R&D

Appendix 2
Methodological Appendix

This appendix deals primarily with the measures used in the preceding analyses and pays detailed attention to the methodological issues discussed in the text. The sections that follow are:

- Summaries of the district and election year level variables used throughout the text

- Ancillary analyses from Chapter 3 including:
    - The results of the Deterrence Model for 1990
    - The reduced form equations for the Vote Share System

- Description of the individual level measures taken from the American National Election Studies, including question wording, and the Exercising Citizenship in American Democracy Survey

- More details on the item response models used to create the political awareness measure used in Chapter 5

- Various statistical tests used to assess the appropriateness of random effects models estimated in Chapter 5.

District and Election Year Level Variables

Table A2.1 shows the summary statistics for the district and year level variables used throughout the book. Before the table, I have included as a reference short descriptions of each focusing primarily on operationalization.

- *Distributive Benefits*: measured as difference of the log of spending on direct payment programs in district *i* during Congress *t* and the log of mean amount of spending for all districts during Congress *t*.

- *Index of Challenging Campaign Strength*: scores from a factor analysis of challenger experience and the logs of total contributions, number of individual contributors, party support, and PAC contributions.

- *Experienced Challenger*: equals 1 if the challenger previously held an elective office, 0 otherwise.

- *Spending Gap*: the log of challenger spending minus the log of incumbent spending

- *Incumbent Vote Share*: the share of the two-party vote received by the incumbent

- *Freshman in Previous Congress*: equals 1 if the incumbent was a freshman in the previous Congress (t-1), 0 otherwise.

- *Seniority*: equal to the number of terms served by the incumbent including the current Congress

- *Republican*: equal to 1 if the incumbent is a Republican, 0 otherwise.

- *Leadership*: equal to 1 if the incumbent was Speaker of the House, Majority or Minority Leader, or Majority or Minority Whip, 0 otherwise.

- *Chair*: equals 1 if the incumbent chaired a standing committee or the Permanent Select Committee on Intelligence (PSI), 0 otherwise.

- *Ranking Minority Member*: equals 1 if the incumbent was the RMM on a standing committee or the PSI, 0 otherwise.

- *Ideology*: measured using the first dimension of the incumbent's DW-Nominate score for the current Congress.

- *Ideological Extremity*: measured using the absolute value of the first dimension of the DW-Nominate score.

- *Party Unity Score (t-1)*: the party unity score from Voteview.com from the previous Congress.

- *Log of War Chest*: the log of the amount of money the incumbent had at the beginning of the current Congress.

- *District Characteristics*: these are the percent of the district population falling under each category; for example, the percent of the population over the age of 64.

- *Population per Square Mile*: the amount of people in thousands for each square mile encompassed by the district.

- *Log of Median Income*: the log of the median income of the district.

- *Proportion Voting for the Democrat Presidential Candidate*: the share of the vote received by the Democratic presidential candidate in current election if *t* is a presidential election year or in the last election if *t* is a midterm election.

- *Proportion Voting for the Incumbent Party Presidential Candidate*: the share of the vote received by the presidential candidate from the House incumbent's party.

- *Member of President's Party (In-Party)*: equals 1 if the incumbent is a member of the President's party, 0 otherwise.

- *Presidential Approval (by In-Party)*: the interaction between In-Party and the percent of respondents from the Gallup poll closest to Election Day saying they approve of the job the President is doing; approval is rescaled to run from -50 to 50.

- *Midterm Election Year (by In-Party)*: the interaction between In-Party and a dummy variable scored 1 if the current election is a midterm election, 0 otherwise.

- *Percent Change in RDI (by In-Party)*: the interaction between In-Party and the annual percent change in real disposable income.

[Table A2.1 here]

Ancillary Analyses from Chapter 3

As referenced in the text of Chapter 3, in order to reconcile the differences between the findings reported for the Deterrence Model and those reported in Bickers and Stein (1996), I reestimated the Deterrence Model for the 1990 election. Naturally, the only change made was to drop the election year fixed effects. The results are reported in Table A2.2. Note that the coefficients for distributive benefits and the interaction with party are significant ($\alpha < 0.1$) and in the predicted direction. This suggests that the differences between the findings are not related to measurement of the concepts, but the period under examination.

[Table A2.2 here]

Also included in Chapter 3 is a discussion of the reduced form equations for the Vote Share System. In two-equation systems, there are straightforward tests of the instruments used. This is not the case for more complex systems. 2SLS is a consistent estimator given the instruments used predict the instrumented variables, but not the other endogenous variables in the system. I order to ascertain whether variables excluded from certain equations qualify as good instruments, the reduced form of each equation, derived

by substituting in the predictors of the endogenous independent variables, was estimated using OLS. These results are presented in Table A2.3.

[Table A2.3 here]

Individual Level Variables

In Chapters 5 and 6, the dependent variable is measured for individual survey respondents and several characteristics of the respondents are included in the estimated models. The data from Chapter 5 are taken from the National Election Studies and the data from Chapter 6 are taken from the Exercising Citizenship in American Democracy Survey conducted by Indiana University in 2002. The Exercising Citizenship data use many of the same variables taken from the National Election Studies with a few additions. Briefly, the variables taken from both include:

- *Party Identification*: coded -3 for self identified strong Democrats to 3 for strong Republicans.

- *Female*: coded 1 for female respondents, 0 for male respondents.

- *Black*: coded 1 for black respondents, 0 otherwise.

- *National Economic Retrospections*: in the National Election Studies data, this is coded -1 if the respondent said the national economy had gotten worse, 0 for the same, 1 for better over the last year; Exercising Citizenship data add -2 for much worse and 2 for much better.

- *Liberal*: coded 1 for self identified liberals, 0 otherwise.

- *Conservative*: coded 1 for self identified conservatives, 0 otherwise.

In addition to these variables, the Exercising Citizenship data also include personal economic retrospections, which ask whether the respondent's personal financial situation has gotten (much) better, (much) worse, or stayed the same. It is coded in the same manner as national economic retrospections (-2 to 2). Finally, the awareness scale derived from the Exercising Citizenship data is different. The awareness scale, described in Chapter 6, is based on several political knowledge items that appeared in the survey. These items were alpha-scaled with the final measure a trichotomous coding: -1 represents respondents less than one standard deviation from the mean of the scale, 0 is within one standard deviation, 1 is greater than one standard deviation.

Chapters 5 and 6 also have different dependent variables. Chapter 5 exclusively uses whether the respondent, assuming she voted for a candidate for the House of Representatives, voted for the incumbent, coded 1, 0 otherwise. Use of a vote variable in Chapter 6, given the limited nature of the advertising data, would have severely limited the sample size. Thus the approach of Mondak, et al. (2007) was adopted. Several questions evaluating incumbent and congressional performance were scaled, creating

three dependent variables, all of which are described in the text of Chapter 6. Summary statistics for all of these measures are presented below in Tables A2.5 and A2.6.

[Tables A2.5 and A2.6 here]

Item Response Model for Political Awareness

As of now, the only variable that has not been given enough attention is the measure of political awareness used in Chapter 5. As discussed in the text, a measure like the one used in Chapter 6, based on political knowledge, could not be used with the bulk of the National Election Studies data. Instead, I opted to create a measure of awareness along the lines of Zaller (1992). Specifically, twenty-five items addressing knowledge, interest, and involvement were selected and scaled using item response models. These twenty-five items and the years in which they were asked are reported again in Table A2.6 below.

[Table A2.6 here]

Each item was dichotomized prior to estimation so that responses indicative of higher awareness were coded 1, 0 otherwise. The knowledge items were already dichotomous. For ideological and issue placement, respondents were asked to place the two major parties and the President on seven-point scales similar to the self-placement scale. Correct responses place Republicans to the right of Democrats, Republican presidents right of center, and Clinton left of center. The only other items that were not dichotomous were the questions asking how many days respondents watched the news or read a daily newspaper. Reponses of 3 or more days were coded as 1, 0 otherwise. After recoding the items, two parameter item response models were estimated for each election year, following the same logic described in Chapter 3 with the creation of the Index of Challenging Campaign Strength. Rather than complicate the awareness models by adding group effects for election years, a separate scale was estimated for each year. Table A2.7 reports the discrimination and difficulties parameters for each item in each year.

[Table A2.7 here]

Tests of Model Specification

The final issue that will be addressed in this Appendix relates to the various tests of model specification employed in selection of the random effects logit models estimated in Chapter 5. As explained in the text, the structure of the data could yield a wide variety of models depending on the treatment of heterogeneity at the district and election year levels of analysis. At one extreme, heterogeneity is completely ignored and simple pooled logit models would be estimated. At the other, district and year level variations in voting behavior, as well as random variation in slopes, could be accounted for using multilevel models. Moving from one extreme to the other allows for models

that better address and make better use of the structure of the data, but sacrifice parsimony and require heftier assumptions. Thus the prudent strategy involved testing various specifications to gauge how complex models had to be to accurately reflect the world of elections. The methodological issues that must be considered are summarized in the following questions:

Will random coefficient models yield consistent estimates?

The key independent variable is measured at the district level, while the dependent variable is an individual behavior. This implies that district fixed effects cannot be used; the fixed effects would not permit the inclusion of distributive benefits, which would be perfectly collinear with the fixed effects. If district level variation is to be accounted for, it must be in the form of a random intercept. Random effects and random coefficient models, however, assume that the stochastic term of the intercept is uncorrelated with the other variables included in the model. Violating this assumption could lead to inconsistent estimates (Wooldridge 2002). To examine this possibility, fixed and random effects models were estimated in which individuals were clustered in district-years, as described in the text, and simply in election years. Hausman tests were then used to measure the presence of systematic bias in the coefficients. The null hypothesis in these tests is that there is no systematic bias, leading to the conclusion that the random effects model is consistent. Clearly, meaningful interpretation necessitates consistent estimates. Results of these tests are presented in Table A2.8 below.

Do district and year heterogeneity in voting need to be accounted for?

Given the consistency of estimates, we can also question the inclusion of random effects at all. Clearly, pooling observations creates a simpler model both to estimate and interpret, especially in the calculation of marginal effects and predicted probabilities. Therefore, pooled models were estimated for the full and partisan samples. The results of these models were tested against the respective random effects models (both for district-year variation and year variation) using likelihood ratio tests. Significant results suggest that inclusion of the random district-year or year variation produces a better performing model. Additionally, the presence of unaccounted for variation could lead to autocorrelation and the inability to perform hypothesis tests on estimates. In addition to the likelihood ratio tests, year fixed effects were included in the random effects models described in Chapter 5. Wald tests were used to assess the joint significance of year fixed effects in addition to random district-year variation. These results are also reported in Table A2.8.

Are key slopes homogeneous?

This question truly gets at the usefulness of the multilevel model. Given the three level structure, a multilevel model would be needed to account for random intercepts at

the district and year levels simultaneously. Another justification for the use of multilevel models is the estimation of random coefficients. It may be the case that the slopes of interest, the three-way interactions between ideology, awareness, and distributive benefits, are different in different years. For example, maybe aware conservatives are only less likely to vote for pork barreling incumbents in years when there is a large budget deficit. Since the size of the deficit is not included in the model, this effect would be captured by significant variation in the slope by year. Another possibility, given the conclusions of Chapter 6, is that the national campaign, either congressional or presidential, focuses on government spending (wasteful spending, deficits, etc.). In these years, the three-way interactions might have significantly different effects than in other years. To test for the possibility of heterogeneous slopes, the three-way interactions were interacted with dummy variables for election years. These models were tested against models with homogeneous slopes using likelihood ratio tests. Results reported in Table A2.8 below.

[Table A2.8 here]

Table A2.8 gives the tests, χ^2 statistics for the Hausman, likelihood ratio, or Wald tests, p-values of the tests, and the results. There are three panels, one for each sample (full and partisan samples). The conclusions to be drawn are that random effects models are consistent for all three samples. There is significant district-year heterogeneity, but no clear variation strictly by year. Finally, the effects of the three-way interactions also do not vary significantly by year. Taken together, the results suggest that random effects models, nesting voters within district-years, with homogeneous slopes are sufficient to model all of the important variation not explicitly included in the independent variables.

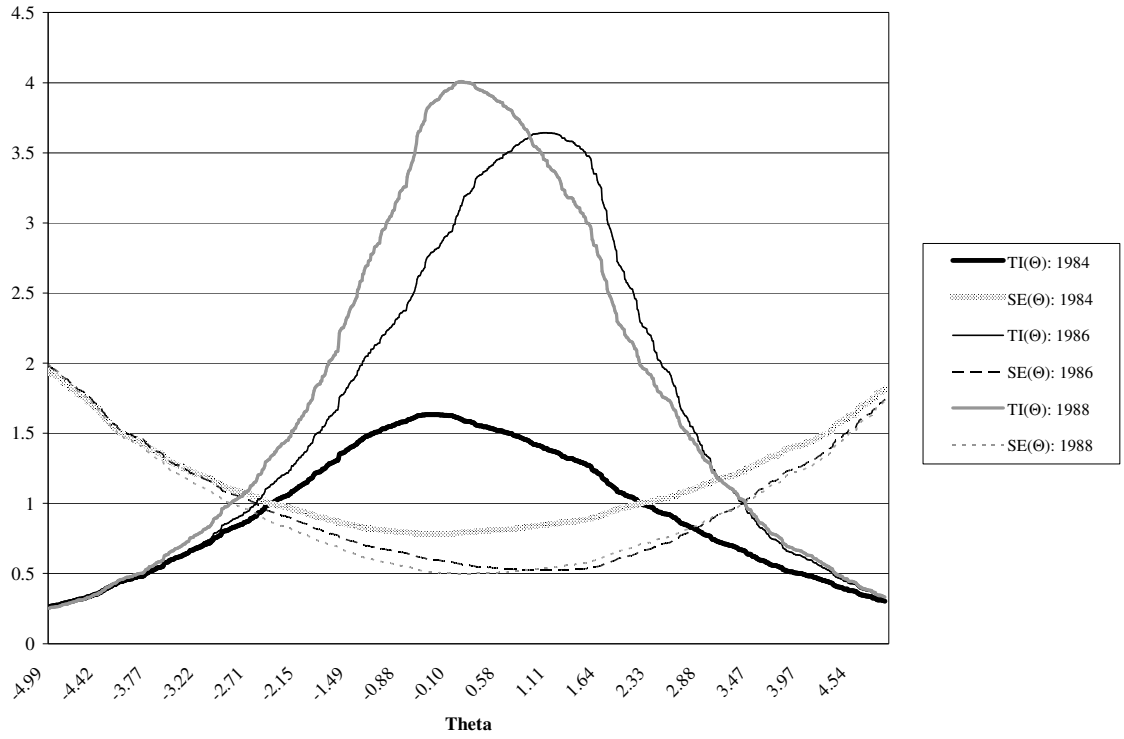

Figure A2.1
Information Curves for Awareness Models (1984 to 1988)

Note: TI curves give the total information function for a given value of theta. SE curves give the standard error of the total information function

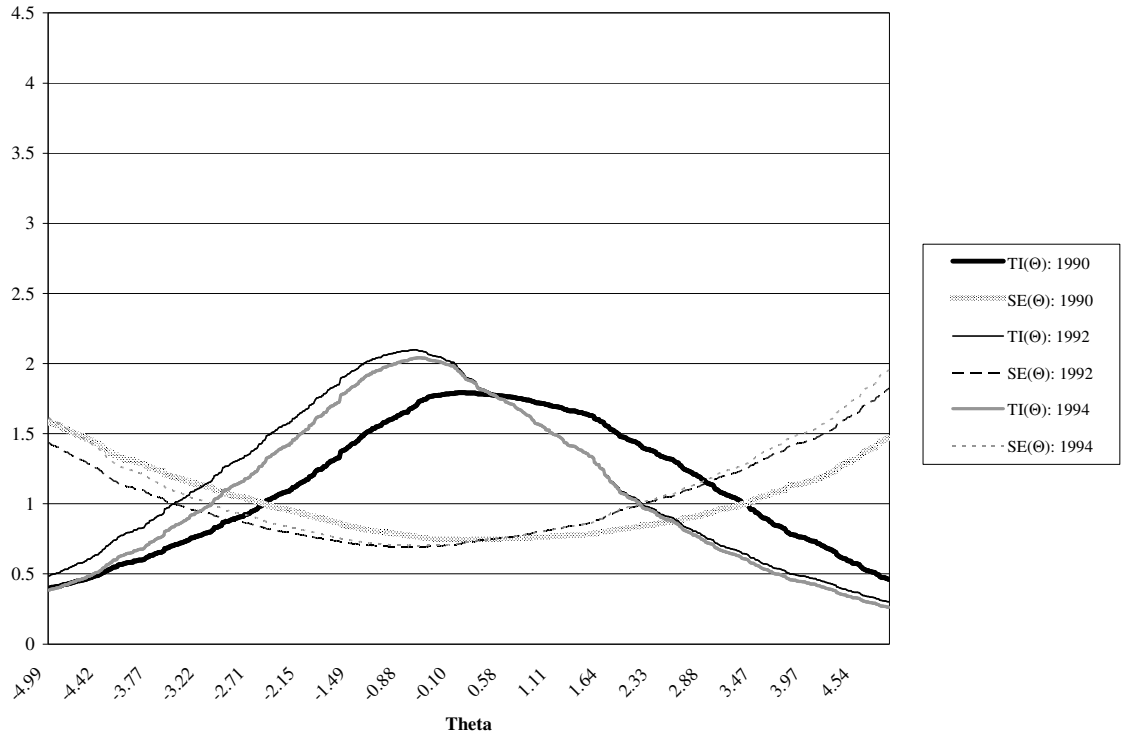

Figure A2.2
Information Curves for Awareness Models (1990 to 1994)

Note: TI curves give the total information function for a given value of theta. SE curves give the standard error of the total information function

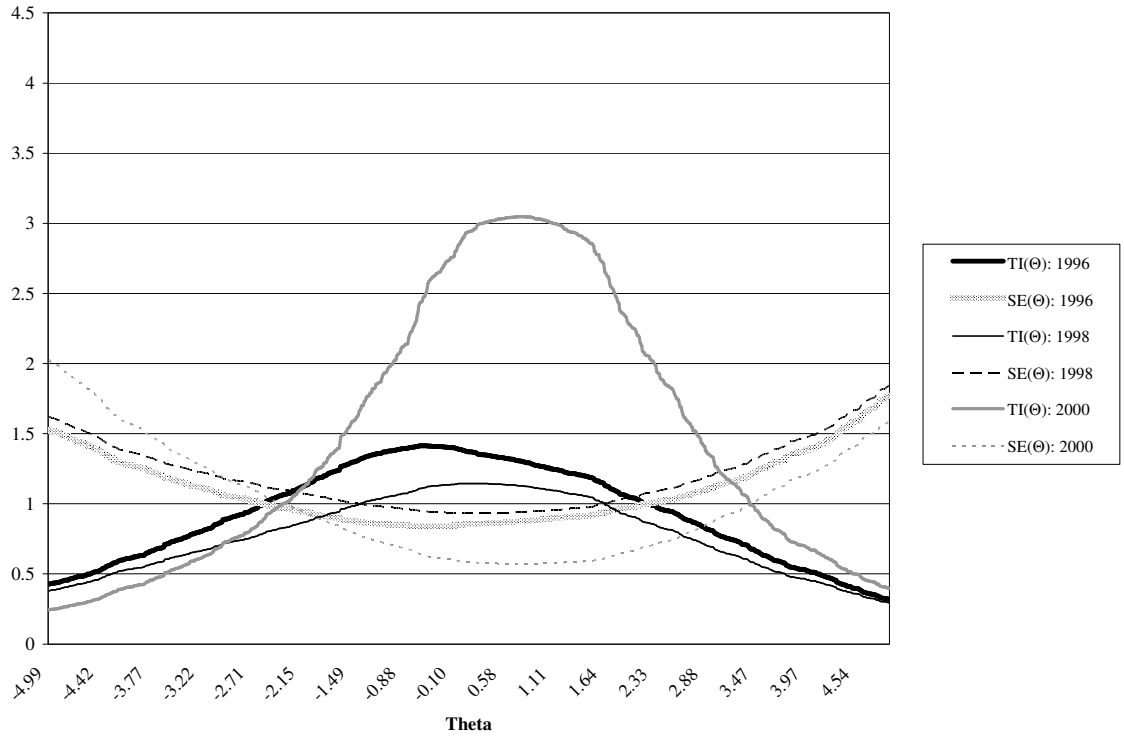

Figure A2.3
Information Curves for Awareness Models (1996 to 2000)

Note: TI curves give the total information function for a given value of theta. SE curves give the standard error of the total information function

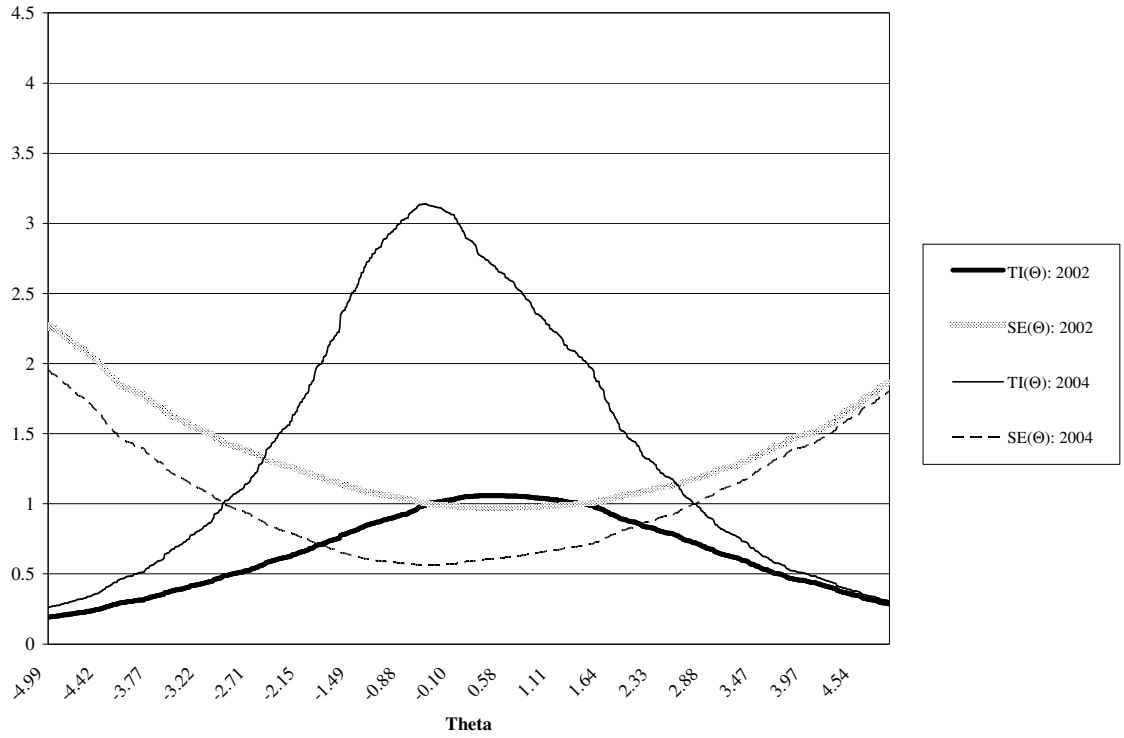

Figure A2.4
Information Curves for Awareness Models (2002 to 2004)

Note: TI curves give the total information function for a given value of theta. SE curves give the standard error of the total information function

Table A2.1
Summary Statistics for District and Year Level Variables

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Minimum*	*Maximum*
Endogenous Variables (γ)					
Distributive Benefits	4,292	-1.027	1.298	-6.560	3.595
$$ on New DP Prog. (000's)	4,292	251,205	587,050	206	8,022,881
Mean $ per Congress (000's)	10	251,205	92,905	98,462	405,518
ICCS	3,255	0.000	0.999	-2.305	2.127
Experienced Challenger	3,938	0.164	0.370	0	1
Spending Gap	3,559	-2.376	1.594	-6.670	4.228
Inc. Share of the 2-Party Vote	3,239	66.060	9.561	9.789	97.077
Previous Electoral Variables (β)					
Inc. Vote Share (t-1)	3,478	71.497	14.274	9.789	100
Spending Gap (t-1)	3,344	-2.368	1.527	-6.540	4.228
Log of Inc. Spending (t-1)	3,574	12.906	0.786	8.651	15.535
Challenger Experience (t-1)	3,400	0.158	0.365	0	1
Incumbent Characteristics (φ)					
Freshman in Prev. Congress	4,292	0.139	0.346	0	1
Seniority	4,292	5.612	4.310	1	28
Republican	4,292	0.414	0.493	0	1
Leadership	4,292	0.011	0.104	0	1
Chair	4,292	0.049	0.216	0	1
Ranking Minority Member	4,292	0.049	0.216	0	1
Ideology	3,856	-0.009	0.416	-0.881	1.338
Ideological Extremity	3,854	0.381	0.166	0	1.338
Party Unity Score (t-1)	3,549	85.974	12.875	21.181	100
Log of War Chest	3,852	10.812	2.152	0	14.824
District Characteristics (δ)					
% Over Age 64	4,287	14.652	4.739	4.117	43.806
% Black	4,287	11.750	15.359	0.067	92.069
% Enrolled in K-12	4,287	17.515	3.120	3.837	27.523
% Working on Farms	4,287	1.025	1.107	0.010	8.150
% Working in Financial Serv.	4,287	2.957	1.255	0.790	10.429
% Foreign Born	4,287	8.176	9.492	0.218	60.754
% Working in Government	4,287	7.068	1.939	2.604	19.628
% in Military	4,287	0.615	1.344	0.005	14.613
% Living in Rural/Farm Areas	4,287	1.783	2.789	0	23.873
% Living in Urban Areas	4,287	68.896	28.076	0	100
% Unemployed	4,287	2.904	0.919	1.068	7.886
Pop. per Sq. Mi. (000's)	4,287	2.425	6.850	0.001	73.773
Log of Median Income	4,287	10.290	0.405	9.040	11.295
Pro. Voting for Dem. Pres.	3,844	0.502	0.135	0.170	0.961
Pro. Voting for Inc. Party Pres.	4,144	0.572	0.114	0.228	0.961
National Political Factors (ζ)					
Member of Pres. Party	3,860	-0.077	0.997	-1	1
Presidential Approval	10	54.4	9.371	34	66
Rescaled Approval	10	4.4	9.371	-16	16
Midterm Election Year	10	0.5	0.527	0	1
Per. Change in RDI	10	3.57	1.124	1.9	5.8

Table A2.2
Deterrence of Experienced Challengers: 1990

Variables	***Coef.***	***Std. Error***
Distributive Benefits		
Distributive Benefits	-0.216#	0.127
Distributive Benefits x Republican	0.333#	0.196
Previous Electoral Variables		
Inc. Share of 2-Party Vote (t-1)	-0.017#	0.010
Log of Inc. Spending (t-1)	0.251	0.178
Experienced Challenger (t-1)	0.597*	0.272
Incumbent Characteristics		
Freshman in Previous Congress	-0.135	0.320
Republican	0.257	0.293
Leadership	0.281	0.673
Chair	0.581	0.387
Ranking Minority Member	0.363	0.417
Ideological Extremity	-0.554	0.647
Log of War Chest	-0.005	0.178
Intercept	-3.831	2.689
Model Statistics		
Number of Observations	343	
LR χ^2 (12)	26.49	
Prob. > χ^2	0.009	
PCP / PRE	0.901	-0.030

* $p < 0.05$, # $p < 0.1$ (two-tailed)

Table A2.3
Reduced Form Equations for the District Level System

	Dist. Ben.		*ICCS*		*Spending Gap*		*Vote Share*	
Variable	***Coef.***	***SE***	***Coef.***	***SE***	***Coef.***	***SE***	***Coef.***	***SE***
Inc. Vote Share (t-1)	**0.005**	0.002	**-0.012**	0.002	**-0.019**	0.003	**0.185**	0.018
Spending Gap (t-1)	**0.048**	0.017	**0.085**	0.019	**0.219**	0.029	**-0.306**	0.143
Log of Inc. Spending (t-1)	-0.007	0.034	**0.100**	0.029	**-0.361**	0.043	-0.297	0.212
Experienced Challenger (t-1)	-0.065	0.057	-0.004	0.065	-0.074	0.100	0.110	0.476
Freshman in Prev. Congress	**0.145**	0.069	-0.046	0.059	0.025	0.088	-0.098	0.436
Seniority	-0.014	0.020	-0.008	0.018	-0.007	0.028	**-0.291**	0.135
Seniority Squared	0.001	0.001	0.000	0.001	0.001	0.001	0.006	0.006
Republican	0.015	0.118	**-2.697**	0.862	**-2.733**	1.283	7.937	5.821
Leader	**-0.470**	0.165	0.086	0.177	-0.295	0.274	2.482	1.305
Chair	-0.001	0.095	-0.134	0.103	**-0.255**	0.148	0.810	0.755
Ranking Minority Member	-0.051	0.096	-0.023	0.112	-0.127	0.176	0.280	0.827
Ideology	0.078	0.126	**0.466**	0.199	0.110	0.310	**-5.528**	1.462
Ideological Extremity	0.003	0.195	**0.463**	0.224	0.471	0.335	**-4.658**	1.653
Party Unity Score (t-1)	0.002	0.002	**0.008**	0.003	0.005	0.005	**-0.133**	0.024
Log of War Chest	**0.024**	0.011	**-0.043**	0.009	**-0.096**	0.014	**0.461**	0.071
% Over Age 64	**-0.023**	0.007	-0.014	0.009	**-0.039**	0.014	0.101	0.068
% Black	-0.002	0.002	0.000	0.002	0.001	0.003	0.005	0.014
% Enrolled in K-12	**-0.092**	0.012	0.002	0.013	-0.029	0.019	-0.042	0.096
% Working on Farms	**0.081**	0.036	**0.079**	0.040	**0.162**	0.060	-0.528	0.294
% Working in Financial Services	**0.104**	0.028	0.045	0.030	0.081	0.048	-0.133	0.230
% Foreign Born	**-0.012**	0.003	**-0.008**	0.003	**-0.014**	0.005	0.044	0.024
% Working in Government	**0.284**	0.011	-0.006	0.012	-0.013	0.018	**0.282**	0.088
% in Military	**-0.066**	0.016	-0.017	0.017	-0.004	0.025	0.061	0.129
% Living in Rural/Farm Areas	**0.030**	0.014	-0.020	0.016	-0.030	0.024	**0.389**	0.120
% Living in Urban Areas	0.001	0.001	0.000	0.001	-0.001	0.002	**0.021**	0.011
% Unemployed	**0.247**	0.030	**-0.083**	0.031	-0.083	0.046	**1.016**	0.231
Pop. per Square Mile (000's)	-0.005	0.004	0.005	0.004	0.004	0.006	**0.120**	0.031
Log of Median Income					-0.159	0.204	-1.245	1.001
Pro. Voting for Dem. Pres.	**1.403**	0.293	**-2.660**	0.329	**-3.288**	0.493	-0.946	2.020
Pro. Voting for Inc. Party Pres.							**40.534**	2.068
Member of President's Party							**2.649**	0.776
Pres. Approval (by In-Party)							0.008	0.025
Midterm Year (by In-party)							**-6.493**	0.549
Per. Change in RDI (by In-Party)							**-0.547**	0.156
Interactions of Variables in Dist. Ben. Equation with Republican								
Inc. Vote Share (t-1)			0.004	0.004	-0.002	0.005	-0.037	0.027
Seniority			-0.023	0.031	-0.041	0.047	0.448	0.229
Seniority Squared			0.001	0.002	0.002	0.003	-0.021	0.013
Sending Gap (t-1)			0.009	0.028	-0.070	0.043	0.029	0.207
Experienced Challenger (t-1)			0.118	0.092	**0.287**	0.142	-0.448	0.677
Leader			0.166	0.262	-0.050	0.405	**-4.632**	1.928
Chair			0.283	0.169	0.199	0.253	-0.924	1.240
Ranking Minority Member			0.016	0.160	0.139	0.242	-1.269	1.181
Ideology			-0.389	0.304	0.223	0.475	3.634	2.240
Party Unity (t-1)			-0.005	0.004	-0.004	0.006	**0.060**	0.029
% Over Age 65			0.020	0.013	0.023	0.019	-0.125	0.099
% Black			0.006	0.004	-0.002	0.006	**-0.090**	0.031
% Enrolled in K-12			-0.012	0.023	-0.034	0.035	0.188	0.171
% Working on Farms			-0.084	0.060	-0.126	0.091	**1.142**	0.443
% Working in Financial Services			-0.040	0.048	-0.135	0.074	0.400	0.357
% Foreign Born			0.012	0.007	**0.031**	0.010	**-0.149**	0.050
% Working in Government			**0.043**	0.019	**0.084**	0.029	**-0.473**	0.141
% in Military			0.052	0.032	0.032	0.045	-0.295	0.232
% Living in Rural/Farm Areas			0.032	0.024	0.047	0.035	**-0.812**	0.175
% Living in Urban Areas			0.001	0.002	0.001	0.004	-0.031	0.018
% Unemployed			0.062	0.054	0.010	0.082	**-1.405**	0.399
Pop. per Square Mile (000's)			-0.008	0.008	-0.006	0.013	-0.061	0.062
Pro. Voting for Dem. Pres.			**5.395**	0.562	**7.309**	0.846	—	—

Note: Bold coefficients are significant for at least the 0.05 level.

Table A2.4
Summary Statistics for Individual Level Variables from National Election Studies (1984 to 2004)

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Minimum*	*Maximum*
Vote for Incumbent	9.616	0.719	0.450	0	1
Party Identification	19,869	-0.253	2.074	-3	3
Female	20,258	0.553	0.497	0	1
Black	20,095	0.126	0.331	0	1
National Economic Retrospections	19,786	-0.154	0.791	-1	1
Feeling Thermometer for Incumbent	13,309	62.836	22.243	0	100
Awareness	20,258	-0.049	1.386	-5	5
Liberal	18,551	0.104	0.305	0	1
Conservative	18,551	0.189	0.391	0	1

Table A2.5
Summary Statistics for Individual Level Variables from Exercising Citizenship in American Democracy Survey (2002)

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Minimum*	*Maximum*
Incumbent Favorability	1,511	1.679	0.637	0	3
Congressional Efficacy	1,457	0.000	0.867	-1.597	2.953
Congressional Work Ethic	1,457	0.000	0.718	-1.766	2.205
Party Identification	1,496	-0.037	2.172	-3	3
Female	1,511	0.531	0.499	0	1
Black	1,501	0.072	0.258	0	1
Personal Econ. Retrospections	1,500	-0.709	1.388	-2	2
National Econ. Retrospections	1,499	-0.532	0.948	-2	2
Awareness (3 point scale)	1,511	0.045	0.656	-1	1
Liberal	1,497	0.189	0.392	0	1
Conservative	1,497	0.281	0.449	0	1
Issue Ad Balance	804	4.966	14.550	-68.276	100
Nationalism Ad Balance	804	3.728	9.433	-6.722	100
Distributive Benefits	384	-1.082	1.357	-4.040	2.965

Note: Distributive benefits vary over district, therefore the 384 observations listed are congressional districts, *not* individuals.

Table A2.6
Political Awareness Items from the National Election Studies

Item	*Question*	*Years Included*
Political Knowledge: Identification and Factual Knowledge		
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
Political Knowledge: Ideological / Issue Placement		
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
Interest and Exposure to Information		
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
Involvement		
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 A2.7
Discrimination and Difficulty Estimates from Item Response Models

Item	*Para.*	*1984*	*1986*	*1988*	*1990*	*1992*	*1994*	*1996*	*1998*	*2000*	*2002*	*2004*
1	**α**	0.78	0.84	0.80	0.85	0.70	0.98	0.78	0.86	0.95		
	β	1.21	1.15	1.06	1.26	1.26	0.74	1.07	1.02	1.54		
2	**α**	0.90	0.81	1.51	0.78	0.83	1.00	0.49	0.55	1.22	0.31	0.94
	β	-0.15	0.68	-0.21	-0.77	-1.12	-1.78	-2.63	-2.18	-0.09	1.54	-0.21
3	**α**	0.60	0.81	1.21	0.44	0.54	0.65	0.55	0.37	1.19		0.96
	β	1.04	0.09	-0.06	-1.02	-1.53	-2.13	-2.44	-2.64	0.06		-0.01
4	**α**		1.35	1.33	0.64	0.77	0.70	0.55	0.75	0.96		1.48
	β		-0.94	0.43	-3.80	-3.64	-3.59	-4.62	-3.84	-0.14		-1.28
5	**α**		0.94	1.47	0.38	0.40	0.50	0.32	0.36	1.66		1.24
	β		-0.24	1.37	0.70	-0.66	-1.08	-1.88	-2.52	1.63		1.63
6	**α**		1.37	1.03	0.73							
	β		1.44	-0.63	2.35							
7	**α**		1.70	1.16	0.37	0.53	0.75	0.35	0.46	1.07		1.20
	β		1.28	2.48	3.11	1.57	1.68	2.35	1.63	1.77		0.66
8	**α**		1.31	1.00	0.37	0.21	0.32	0.20	0.13	1.40		1.51
	β		0.56	-0.29	-0.80	-2.23	-1.20	-4.63	-3.28	0.55		-0.45
9	**α**		1.56	1.10	0.45	0.75	0.98					
	β		1.34	-0.69	-2.26	-0.60	-0.50					
10	**α**			1.38	0.50	0.85	0.90					
	β			0.49	1.80	-0.71	-0.61					
11	**α**	0.73	0.70	0.98	0.65	1.08	1.15	0.97	0.86	0.89	0.36	1.15
	β	-0.64	-0.54	-0.53	-0.48	-0.67	-0.67	-0.89	-0.73	-0.65	-2.23	-0.64
12	**α**	0.54	0.69	0.51	0.50	0.72	0.76	0.61	0.58	0.67	0.15	0.74
	β	-1.21	-0.65	-0.66	-0.38	-0.72	-0.42	-1.25	-0.69	-0.09	-0.99	-0.55
13	**α**	0.59	0.52	0.64	0.43	0.72	0.79	0.63	0.39	0.31		1.06
	β	-0.74	-0.69	-0.85	-0.77	-0.76	-0.58	-0.54	-0.41	0.40		-0.52
14	**α**	0.76	0.61	0.73	0.84	0.81	0.66	0.62	0.75	0.78	0.90	0.76
	β	0.67	1.43	1.00	1.24	0.06	1.05	1.14	1.28	0.90	0.60	0.37
15	**α**	1.08	0.91	0.71	1.13	0.75		0.70		0.73		0.65
	β	-0.96	-0.54	-0.41	-0.52	-0.50		-0.22		-0.21		-0.76
16	**α**	0.69	0.51	0.73	0.46	0.72				0.48	0.75	0.54
	β	-1.88	-1.48	-1.36	-0.81	-2.11				-2.12	-0.72	-2.26
17	**α**	0.42	0.35	0.38	0.46	0.42	0.40	0.42	0.44	0.41	0.42	0.33
	β	1.87	1.97	2.01	2.06	2.13	1.66	1.41	1.35	0.83	-0.15	0.38
18	**α**	0.49	0.39	0.38	0.35	0.31	0.17	0.19	0.23	0.26	0.33	0.17
	β	-0.91	-2.05	-2.01	-2.32	-2.16	-4.76	-3.84	-3.72	-2.36	-2.27	-4.13
19	**α**	0.51	0.44	0.50	0.56	0.44	0.48	0.38	0.47	0.47	0.36	0.43
	β	-0.52	-0.77	-0.54	-0.53	-0.37	-0.41	-0.16	-0.35	-0.11	-0.44	0.19
20	**α**	0.44						0.58		0.37	0.47	0.41
	β	1.51						-2.05		0.63	0.06	0.55
21	**α**	0.64	0.52	0.51	0.74	0.55		0.66	0.83	0.48	0.91	0.44
	β	0.88	1.75	1.25	1.58	0.66		1.02	1.32	0.91	0.65	0.11
22	**α**	0.78	0.72	0.73	0.87	0.83	0.73	0.88	0.80	0.69	0.88	0.74
	β	-0.72	-0.96	-0.59	-0.76	-1.41	-1.25	-1.16	-1.34	-1.49	-1.45	-1.38
23	**α**									0.38	0.56	0.45
	β									5.62	3.91	4.49
24	**α**							0.44		0.35	0.55	0.38
	β							1.81		1.91	0.59	1.57
25	**α**	0.71	0.59	0.48	0.90	0.67	0.69	0.96	0.63	0.63	0.94	0.58
	β	2.57	3.05	3.54	2.38	2.60	2.78	2.34	3.10	3.14	2.30	2.94

Note: α coefficients represent item discrimination estimates for each year. β coefficients represent item difficulty estimates for each year. For convenience, the awareness questions summarized in Table 5.1 are presented again in Table A2.6.

Table A2.8
Tests of Model Specification for Individual Level Models

Test	χ^2 *Statistic*	*p-value*	*Result*
Full Sample			
Fixed Effects v. Random Effects (District)[1]	29.07	0.11	RE estimator is consistent
Fixed Effects v. Random Effects (Year)[1]	-0.85	—	RE estimator is consistent
Homogeneous District Level Intercept[2]	11.14	0.00	Intercept varies by district
Homogeneous Year Level Intercept[2]	15.80	0.07	Intercept does not vary by year
Homogeneous Year Level Intercept II[3]	15.09	0.13	Intercept does not vary by year
Homogeneous Year Level Slopes for Ideology x Awareness x Pork Interactions[2]	10.29	0.96	Slopes of interactions do not vary by year
Republican Districts			
Fixed Effects v. Random Effects (District)[1]	13.98	0.60	RE estimator is consistent
Fixed Effects v. Random Effects (Year)[1]	-4.52	—	RE estimator is consistent
Homogeneous District Level Intercept[2]	7.45	0.01	Intercept varies by district
Homogeneous Year Level Intercept[2]	18.33	0.03	Intercept may vary by year
Homogeneous Year Level Intercept II[3]	16.64	0.08	Intercept does not vary by year
Homogeneous Year Level Slopes for Ideology x Awareness x Pork Interactions[2]	26.12	0.16	Slopes of interactions do not vary by year
Democratic Districts			
Fixed Effects v. Random Effects (District)[1]	29.00	0.07	RE estimator is consistent
Fixed Effects v. Random Effects (Year)[1]	13.89	0.84	RE estimator is consistent
Homogeneous District Level Intercept[2]	5.99	0.01	Intercept varies by district
Homogeneous Year Level Intercept[2]	11.10	0.27	Intercept does not vary by year
Homogeneous Year Level Intercept II[3]	11.17	0.34	Intercept does not vary by year
Homogeneous Year Level Slopes for Ideology x Awareness x Pork Interactions[2]	17.90	0.59	Slopes of interactions do not vary by year

[1] Tests between fixed and random effects estimators are Hausman tests for the consistency of estimates derived using the random effects estimator. For two of these tests, the χ^2 statistic is negative. Long and Freese (2006) provide a discussion of negative statistics from Hausman tests in the framework of testing for the independence of irrelevant alternatives in multinomial logit models. They explain that, according to Hausman and McFadden (1984), a negative statistic is support for the null hypothesis—no systematic difference between estimates. The same rationale applies here. The Hausman test is not specific to particular empirical concerns, but a general test between the estimates of competing models. In this sense, we can consider a negative statistic support for the null: no systematic difference between the consistent fixed effects estimator and the efficient random effects estimator.

[2] These statistics are derived from likelihood ratio tests between models. Significant results suggest that the "unrestricted" model performs better than the restricted version. Using district homogeneity in the intercept as an example, a significant statistic means that a model specifying a heterogeneous intercept, by district, yields better predictions than a model specifying a homogeneous intercept.

[3] In addition to the likelihood ratio tests between models, an additional test for year heterogeneity in the intercept was conducted. Specifically, the random effects models reported in Chapter 5 were also estimated with dummy variables for each election year, excluding 1984. The test reported above is a Wald test for the joint significance of the year dummy variables.

Appendix 3
Data Sources

- Campaign advertising: Wisconsin Advertising Project
- Campaign finance: Federal Election Commission
- District level demographics (1986 – 1998): E. Scott Adler: "http://sobek.colorado.edu/~esadler/districtdatawebsite/CongressionalDistrictDatasetwebpage.htm"
- District level demographics (2000 – 2004): Bureau of the Census
- District level election returns (1986 – 1992): Gary King: ICPSR 6311
- District level election returns (1994 – 2000): Gary Jacobson
- District level election returns (2002 – 2004): Federal Election Commission
- FAADS data (1983 – 1996): Kenneth Bickers & Robert Stein: "http://www.policydata.net/"
- FAADS data (1997 – 2004): Bureau of the Census
- Individual level (1984 – 2004): American National Election Studies
- Individual level (2002): Exercising Citizenship in American Democracy Survey, The Indiana University Center for Survey Research
- Zip code to congressional district match-up (1986 – 1990): Missouri Census Data Center using the Master Area Block Level Equivalency (MABLE) database and Geocorr90
- Zip code to congressional district match-up (1992 – 2004): Bureau of the Census