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THE POLITICAL ECONOMY OF FEDERAL ASSISTANCE:

DEMAND-SIDE DETERMINANTS OF NEW AWARDS IN THE 110TH CONGRESS

by

MATTHEW A. LENARD

Under the Direction of Jeffrey Lazarus

ABSTRACT

An extensive literature examines how distributive (i.e., "pork barrel") spending is allocated among congressional districts. Much of this research finds evidence that intra-chamber factors like ideology, party, and committee membership are the primary determinants of various forms of distributive spending. However, we know much less about how extra-chamber factors such as district-level demand and the economy impact the distribution of federal outlays. In this study, I find that district-level demand and variation in economic factors, in particular, income and unemployment, significantly predict the distribution of new bureaucratic awards in the 110th Congress. The results support the contention that districts get what they need, and this raises questions about the ability of members of powerful committees to steer awards selectively to their districts. It also provides evidence for the economic "law of increasing state activity," by which districts with higher income levels receive a larger share of federal assistance.

INDEX WORDS: Congress, Distributive spending, FAADS, Government spending, House of Representatives, Legislative studies, Political economy, pork, Pork barrel, Wagner's Law

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2010

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Matthew A. Lenard

2010

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DEDICATION

To my parents

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Introduction

An extensive and distinguished literature on federal spending tends to examine its distribution based on the pork barrel thesis that powerful members of Congress are able to steer funds to their districts based on their positions on powerful committees, seniority, or other positions of authority. In recent years, however, some scholars have begun to examine the ways in which district-level characteristics that are theoretically linked to specific types of agency spending might better explain federal spending patterns. Studies that, for example, include examinations of the impact of hazard levels on EPA superfund spending (Hird 1981), the concentration of farms on agricultural distribution (Gryzki 1991), the impact of flood damage on Corps of Engineers activity (Lazarus 2009), and the allocational characteristics of funds (Lee 2003) have cast some doubt on the overall strength of the traditional pork barrel thesis.

This study advances the idea that district-level characteristics, like member-specific traits, can also be effective predictors of federal spending. It does so by examining a dataset of new federal awards from the 110th Congress and measures their variation against district level variables developed by Adler (2002). In the case of federal awards distributed through the various federal agencies and bureaucratic divisions, it is reasonable to imagine that constituents should get what constituents need. Stein (1981, 341) argued that "rather than relying exclusively on a supply-side approach, policy makers might consider the recipients' perspective." The overreliance on intra-chamber factors has led others to argue that "discretionary grant programs are perhaps unlikely places to find strong supply side effects since these awards are made in the byways of bureaucracies, insulated to some degree from congressional and presidential political pressures" (Lowry and Potoski 2004, 517).

In an attempt to move beyond any narrow focus of political determinants, I attempt to situate economic factors more squarely within the literature on distributive spending. Past studies have typically treated district-level economic factors like income and unemployment as control variables. Yet Wagner's Law, an economic theory of "increasing state activity," provides some guidance for why income and federal spending may be directly related. Moreover, macroeconomic theory offers predictions about the relationship between unemployment and federal spending.

This paper is structured as follows: I begin with a brief review of the federal budget process and the broad role Congress is thought to have in it. Second, I review the established literature on intra-chamber factors that have been found to influence the distribution of federal funds. Third, I review the literature that forms the backbone of my first hypothesis: that measures of local demand play a major role in the distribution of federal funds. Fourth, I review the empirical work around Wagner's Law and apply its logic to spending within Congressional districts. Fifth, I derive hypotheses based on the scholarly literature reviewed in sections three and four. Sixth, I introduce my original dataset of new federal assistance from the 110th Congress, specify variables and describe empirical tests. Seventh, I present my results in the aggregate model and across 23 separate federal agencies and bureaucratic divisions. Finally, I discuss the results and their implications for the study of distributive politics.

I. The Federal Budget

At $3.6 trillion, the Unites States boasts the largest level of federal expenditure in the world. In fact, U.S. federal expenditure for the fiscal year 2009 was greater than the combined spending of the world's second and third biggest spenders, Japan and Germany (The World

Factbook 2010). The president has significant amount of power to set the federal spending agenda by revealing his budgetary priorities, and Congress has the power to review this budget and, through committee action, authorize programs and appropriate funds for bureaucratic divisions and federal agencies subsequently to spend (Oleszek 2007, 41). Article 1, Section 8 of the U.S. Constitution provides Congress with the power to spend federal funds, and the 16th amendment to the Constitution created a federal income tax so that federal programs would be sufficiently funded (Kernell and Jacobson 2007, 13 and 190).

The vast majority of the federal budget — about 70 percent — is reserved for so-called "non-discretionary" expenditures: interest on debt, entitlements (social security, Medicare, pensions), and defense contracts. These funds are automatically distributed to the federal agencies responsible for spending them. The remaining 30 percent is considered "discretionary spending" and is allocated among the dozen or so annual appropriations bills. The first step is for Congress to create, continue, or alter programs through the authorization process. The second step is the appropriations phase, during which federal funds are distributed to the bureaucratic divisions and federal agencies responsible for their expenditure. Both stages take place within respective committees and subcommittees that maintain jurisdiction over each federal agency's policy area (Oleszek 2007, 40-47; Davidson and Oleszek 2000, 365-370).

The U.S. Constitution provides a limited starting point for predicting Congressional power over the distribution of federal funds. The so-called "tax and spend clause" grants Congress the power to provide "for the common Defense and general Welfare of the United States." Founders of the republic James Madison and Alexander Hamilton had their own disagreements over how to interpret the phrase, the former treating it narrowly and the latter more broadly. Madison, in *Federalist 41*, argued that the clause by no means granted Congress

autocratic spending powers and that any interpretation of the broad phrase must be contingent on particular enumerated powers that would precede it. He defended one particular presidential veto of transportation and waterway spending through a strict reading of "general welfare," claiming that such projects provide no "advantage to the general prosperity." Hamilton, on the other hand, sought broader Congressional spending powers, arguing that "whatever concerns the general interests of learning, of agriculture, of manufactures, and of commerce are within the sphere of the national Councils as far as regards an application of money."

Two centuries after these two political leaders publically hashed out their interpretations of such a critical constitutional clause, a large and distinguished scholarly literature has contributed substantially to our theoretical and empirical understanding of "who gets what, how much, and under what conditions" (Bickers and Stein 1990, 3). The "who" in this study refers to the 435 members of the House of Representatives who seek to secure funds for their districts. The "how much" refers to the numbers of awards and their associated value. And the "conditions" are the variations in the political, economic, and demand-side variables that researchers have identified as critical to the study of distributive spending patterns.

II. Supply-Side Theory and Evidence

The vast majority of scholarship seeking to explain the distribution of federal funds — whether earmarks, grants, awards, or other forms of spending — analyzes factors intrinsic to Congress. These "supply side" factors include electoral circumstances, committee membership, seniority and ideology. The role of distributive policy in the relationship between voters and politicians seeking reelection has been a topic of widespread study. Distributive policy, according to Lowi (1964), describes those efforts "characterized by the ease with which they can

be disaggregated and dispensed unit by small unit … patronage can be taken as a synonym for distributive in the fullest meaning of the word" (Frisch 1998, 13, n. 4). This particular definition suggests that members of Congress hope to buy loyalty — or votes — through the delivery of benefits to their districts. This idea is consistent with the seminal body of scholarship steeped in the rational choice tradition. Scholars like Anthony Downs (1957) and Mancur Olson (1965), borrowing from economics, applied rational choice theories to the behaviors of parties and interest groups (Arnold 2004). Others, notably Fiorina and Meyhew, applied rational choice theory to legislative behavior. In his classic work on Congress, Fiorina (1977; 1989, 101-107; Frisch 1998, 12) describes member motivations:

> This approach views individuals as the fundamental actors in politics and seeks to explain political processes and outcomes as consequences of their purposive behavior. Political actors are assumed to have goals and to pursue those goals sensibly and efficiently.… individuals have goals appropriate to the institutional positions around which their careers are centered. Congressmen are assumed to have a predominant reelection motive.

One of the most oft-cited quotes in any political science literature buttresses this remark, that "United States Congressmen [are] single-minded seekers of reelection… establish[ing] an accountability relationship with an electorate" (Meyhew 1974, 6-7). More recent research finds more direct evidence that members use the promise of federal funds as insurance for reelection. Vulnerable members of Congress attempt to acquire more for their districts (Frisch 1998; Lee 2003; Stein and Bickers 1994), Democrats benefit electorally more so than Republicans (Alvarez and Savings 1997), and incumbents can fend off challengers based on their history of delivering to their districts (Bickers and Stein 1996).

Another way in which members seek to use the distribution of benefits is through the formation of coalitions during the passage of large general interest omnibus bills. So-called "minimum winning coalitions" ("MWC") are those in which any member belonging to the

majority-plus-one-vote side comes out a winner (Buchanan and Tullock 1962; Riker 1962; Riker and Ordeshook 1973; Snyder 1991). Yet since such a majority is marginal, it is unstable. In the extreme case, all that is required is for a single member to move from one coalition to the other, and the prior winning coalition becomes the losing one during the budget cycle. Ferejohn (1974) argued that in addition to minimum winning coalitions being unstable, they cannot account for the distribution of veto-wielding members or for the agenda-setting power of committees.

The theory of the MWC contrasts with that of the universalistic coalition, in which every member gets at least some benefit he can deliver to his district (Barry 1965; Ferejohn 1974; Mayhew 1974, 88-89; Weingast 1979; Shepsle and Weingast 1981). The financial nature of pork as an incentive with narrowly targeted benefits and widely distributed costs suggests an arrangement that members of Congress and constituents alike might find disagreeable. Yet despite that, as a former Appropriations staff director remarked, "an earmark is something that flows into 434 congressional districts and not yours. When it comes into your district, it's a federal investment in jobs and education" (Cohn 2006). Thus, universalistic coalition building theory reduces the uncertainty of receiving benefits posed by the minimum winning coalition approach and increases the likelihood that everyone will get at least something (Evans 2004, 11-12).

Members who sit on standing jurisdictional committees are thought to receive more benefits for their districts. Distributive theory predicts that so-called "preference outliers" select themselves onto committees of interest — in particular, those aligned with the primary concerns of their district — and use their post to acquire even larger distributive benefits (Weingast and Marshall 1998; Shepsle 1978; Frisch 1998).

Partisan theories (Cox and McCubbins 1993 and 1995; Rohde 1989 and 1991) would predict that rather than members self-selecting onto committees of interest, parties choose committee members from their ranks. Moreover, majority party leaders have been shown to influence the placement of specific members on influential committees. As noted above, members of the majority party have been found to acquire a larger share of benefits for their district than those in the minority party. (Carsey and Rundquist 1999; Balla, Lawrence, Maltzman and Sigelman 2002; Lazarus 2009 and 2010). On the other hand, legislators may actually refuse pork-barrel projects when voters are strongly attached to their parties (Keefer and Khemani 2009).

A series of studies has found evidence that members of powerful jurisdictional committees can exercise control over certain spending within relevant policy areas. (Weingast and Marshall 1988; Lee 2003; Cohen, Coval and Malloy 2009; Frisch and Kelly 2007; Lee 2003; De Figuerido and Silverman 2006; Lazarus 2008; Masters 1961; Law and Tonon 2006). Authorizing committees are charged with approving new and continuing programs, while appropriations committees determine federal funding levels across bureaucratic divisions and federal agencies. Oleszek (2007, 46-7) summarizes their roles as follows:

> Whether agencies receive the budget authority they request depends in part on the recommendations of the authorizing and appropriating committees.… The authorizing committees are the policy-making centers on Capitol Hill … and advocate what they believe to be the necessary level of appropriations for new and existing federal agencies, activities, and programs, specifying either a specific amount of money or an indefinite level of funding… Each house's Appropriations committee and their twelve parallel subcommittees recommend how much federal agencies and programs will receive in relation to available fiscal resources and economic conditions. The Appropriations subcommittee chairs are collectively known in their respective chambers as the 'College of Cardinals' because of their large influence over spending issues.

Yet despite the numerous studies supporting the claim that standing committee members are able to steer funds to their districts, Adler (2002, 79) argues that the jury is still out: "Years of scholarly work have failed to conclusively establish such a relationship." Perhaps the evidence is mixed because so, too, are the roles that standing committees play. Oleszek (2007, 52) argues that "authorizing committees generally support high levels of spending for the programs they recommend and seek ways to bypass Appropriations Committee domination… [while] appropriating panels often view themselves as guardians of the purse." Legal scholar Fisher (1979, 53) suggests that that "authorization committees have considerable power to force the hand of the Appropriations Committees and, in some cases, even to appropriate."

The strong theoretical and empirical focus on supply-side factors has provided us with a rich understanding of "who gets what, how much, and under what conditions." Yet for the most part, researchers have paid less attention to the roles of district level demand and economic factors. Indeed, one congressional analyst recently remarked, "Congress does not directly control the level of federal spending that will occur in a particular year" (Oleszek 2007, 45). An emerging scholarship has addressed this hole in the literature by testing the impact of carefully designed variables that are directly relevant to specific forms of agency spending.

III. Demand-Side Theory and Evidence

In the halls of Congress or on the campaign trail, it's not uncommon to hear members defend the projects they help steer to their districts. California Democratic Congressman Mike Thompson, in defending a military technology project his district received, issued a statement to the press, remarking "when I support funding for a local project, it's 100 percent based on the benefits it will bring to our district and nothing else" (Payne 2008). The charge from the press

was that Thompson was trading projects for campaign contributions. He was forced to go on the defensive. Evidence (see above) suggests that senior members of Congress and members of powerful standing committees are able to steer significant amounts of pork to their districts. But at the time Thompson defended his earmarks during the 110th Congress, he hardly possessed the characteristics of an influential senior member of the House. By 2008, he had served nine years, less than the average member tenure of 11 years and far less than that which would be considered "senior." He was not a party leader and did not serve on the powerful Appropriations committee. Nor did he sit on the House Armed Services Committee or the Defense Appropriations Subcommittee. This anecdotal case suggests that Rep. Thompson may not have used positions of power or authority to steer what was considered, by the press at the time, a controversial set of defense earmarks valued at nearly $40 million. Perhaps his district just really needed the projects.

It's reasonable to assume that characteristics of the district should play a large part in determining who gets what. Districts with a large share of hospitals might receive a larger share of grants through the Department of Health and Human Services. Large cities with populations dependent on federal housing assistance might receive a larger share of funds from the Department of Housing and Urban Development. Congressional districts found across the U.S. breadbasket could reasonably be expected to receive their fair share of Department of Agriculture awards.

It is somewhat surprising then that so few empirical studies have tested the impact of district demand on the distribution of federal funds. The ones that have, however, have significantly contributed to our understanding of distributive policy based on rarely examined

factors like constituent/district characteristics, geography, size, economic and demographic profiles, and policy demand variables.

One of the earliest treatments of demand side determinants across a large number of policy areas investigated the impact of both local characteristics and committee assignments (Gryski 1991). In less than one-third (9 out of 32) of separate tests did jurisdictional subcommittee membership positively influence the distribution of federal funds in those policy areas. Jurisdictional committee *leadership* significantly predicted distribution in 34 percent of cases (11 out of 32). Yet district-level characteristics were significant more than half the time (70 out of 128 coefficients). Lazarus (2009), building on Adler's (2002) analyses of federal outlays, examined the impact of local factors on earmarks across a similar number of policy areas and found that 13 out of 17 earmarks categories related to at least one measure of local demand. Particularly robust results were found for spending in the Departments of Agriculture, Interior, and Commerce.

The influence of powerful committee members over federal spending has been challenged by evidence that agencies and their bureaucrats function as "a legitimate fourth force in government" (Strauss 1984, 640). An analysis of Commerce and HUD spending demonstrated that agency heads were successful in minimizing political manipulation of programs by regulating the timing of program announcements, in some cases against the wishes of powerful committee members (Anagnoson 1982). Others have found evidence that bureaucratic influence can deplete political effects, namely through the ability of agency heads to identify strong applicants for federal grants (Gilbert and Specht 1974). More generally, federal assistance at the application level before the actual distribution of funds has been found both to reduce overall costs and to reduce levels of aid inequalities among districts (Stein 1981). These last two

findings — thought different from measures of district demand — suggest that a significant level of influence can take place at the administrative level before requests even reach the authorizations or appropriations stages. Potoski and Talbert (2000) found that tax-exempt, private, and non-governmental organizations had a more significant influence over the distribution of discretionary grants than did committee members or agency heads.

Several studies are entirely devoted to investigating the impact of local characteristics on one specific policy area — "partial studies" (Owens and Wade 1984, 404) — rather than across a number of agencies. In contrast to some of the findings cited above that found that members of the House Armed Services Committee or the Defense Appropriations Subcommittee received significantly more benefits for their districts, others have demonstrated that local factors drive this distribution. Employment levels and the actual capital expenditure requirements of the military also have significant effects on federal awards (Goss 1973; Rundquist, Lee and Rhee 1996, Hird 1991). With respect to Homeland Security grants, past electoral returns predicted some variation in awards, but more significant were local factors with stronger theoretical links to the national defense, such as airport traffic and population density (Coats, Karahan and Tollison 2006).

In an important study of the determinants of federal superfund expenditures, Hird (1990) found that members of Congress had little influence over the distribution of cleanup funds. Rather, a specific measure of public interest — Hazard Ranking System scores — was found to be a more significant predictor of fund distribution than, for example, membership on the EPA's authorizing committee or appropriations subcommittee. Interest groups, in addition to the public interest, have also been found to influence federal spending while controlling for the various supply-side variables so prominent in the pork barrel literature (Lowry and Potoski 2004).

IV. Theory and Evidence on the Economy, Wagner's Law

The literature on determinants of pork barrel spending tends almost exclusively to focus on political factors, and more recently, on measures of local demand. The role of economics is rarely investigated. Two questions arise from time to time, but none receive serious treatment in the literature. The first asks whether pork barrel projects are economically efficient. That is, do they provide a benefit given the cost? Shepsle and Weingast (1981) argue that "because of the political basis for calculating benefits and costs, 'pork,' in various forms, will always serve as part of the legislator's response to his voters' retrospective question, 'What have you done for me lately?' And, consequently, economic inefficiency will likely be a permanent characteristic of the distributive policies of legislative institutions" (110). The "benefits and costs" to which the authors refer are highly targeted benefits spread over widely distributed costs, which suggests that members of Congress don't care if a project is inefficient. Agencies too, don't appear to consider the true value of a project given their propensity to claim its effectiveness. Evans (2004, 4) notes "the readiness with which federal agencies claim that a project's benefits equal or exceed its costs highlights the practical difficulties of making judgments about project efficiency in any case."

A second question asks whether economic factors are thought to influence the distribution of pork barrel projects specifically, and federal spending in general. Frisch (1998, 85-86) develops a general model of earmark spending in which he hypothesizes that distressed districts will receive more earmarks than affluent ones. Specifically, he argues that "low income districts would be more likely to receive earmarks than wealthier districts, as poor districts have greater need for the economic development that can be associated with government spending." Others have found little evidence that distressed districts receive more earmarks (Boyle and

Matheson 2009). Another view holds that increasing real incomes in U.S. Model Cities during the 1960s led to more projects because higher tax revenues could be used to pay for more services (Friedan and Kaplan 1987). Yet it appears true, as Lazarus (2009, 351) suggests, that "no prior theoretical treatment points to [why economic factors can influence earmark distribution]."

One way to address this theoretical gap would be through the application of Wagner's Law to distributive spending. The law, which reverses the Keynesian causal arrow (government spending leads to increases in income), is based on the ideas of 19th-century German economist Adolph Wagner and his so-called "law of increasing state activity" (Peacock and Scott 2000, 1). He predicted that there existed a long-run relationship between growth in national income and growth in government expenditures. He reasoned that as income went up, public sectors experienced relative growth, which was associated with advances in technology, the growth of political institutions, and increased political participation. Government needed to expand its fiscal participation in response to these trends and expand its fiscal role due to the increasingly complex and administrative functions it would have to assume (Bickers 1991). Moreover, greater urbanization and population growth would require more public spending. Wagner also assumed that the private sector would not be able to keep up with consistent and increasing levels of growth, and so, the government would have to fill in the gaps (Mann 1981; Thornton 1999).

Wagner's theory also assumes that the demand for public goods is income elastic, and therefore, as income grows, so too does state expansion, which is typically modeled as government expenditure (Burney and Al-Mussallam 1999). The simplest model of Wagner's law regresses some measure of government expenditure on some measure of income. Early applications of the theory included population-based variables because Wagner also assumed

that growth in population, as noted above, would also lead to growth in expenditure (Kyzrzaniak 2001). Since the time of Wagner, the "tendency for the public sector to grow relative to national income has become widely accepted as a stylized fact in public finance" (Henrekson 1993, 1; Islam 2001, 509).

One immediate complication that follows from Wagner's theory is how to define the dependent variable: government expenditure. Basic macroeconomic theory informs us that a nation's gross domestic product has five major components: consumption, investment, government spending, exports, and imports. We are interested in the third component, government spending, which itself is one of two components — along with taxes — that make up a nation's fiscal policy (Blanchard 2000, 42-46).

Wagner himself did not limit his definition of government spending to the national level. In articulating his theory, he was careful to account for central government expenditure, local government expenditure, and public enterprises (Peacock and Scott 2000). In a review of more than a dozen studies on applications of Wagner's Law, Peacock and Scott (2000, 2) show that there is little consensus regarding how to operationalize expenditure. The authors note "there are at least 14 different measures of [expenditure] ranging from very narrow definitions such as those excluding transfers or excluding defense expenditure to wider definitions where all expenditure found in the national accounts are included." More bluntly, Mann (1981, 189) argues "the empirical testing of [Wagner's] hypothesis is difficult, for it is not certain exactly what is to be tested." Thus, Wagner's theory leaves room for some interpretation of the dependent variable, which in this paper is operationalized as new federal assistance awards.

Wagner was careful to include local government expenditure in his definition (Peacock and Scott 2000). New federal awards distributed at the level of the Congressional district are a

variant of funds provided "by the Congress for projects, programs, or grants" (OMB 2009) within local districts or states. The history of distributive spending suggests that Wagner himself might have been familiar with distributive spending. Were he to follow American economic development during his lifetime, he would have known that "pork barrel and distributive policy dates from the earliest days of the [American] republic … [when] policies consisted mainly of projects of physical improvements such as lighthouses, roads, and canals, dams and harbors" (Evans 2004, 4).

Since Wagner's writings were translated from German to English in the 1950s, there have been hundreds of studies testing the effects of income growth on government expenditure. Most of them test the effects of income growth on government expenditure in developing countries, but in recent years, many political economy scholars have applied principles of Wagner's law to the United States in general, and to specific states in particular.

The impact of income on expenditure has been found to be strong in the island nations of the Caribbean as well as in Fiji. In a test of nine Caribbean nations, the effect was significant (Legrenzi 2004). In a study of Fiji, Granger causality estimates validated the relationship as well, but the authors caution that higher debt levels lead to decreased explanatory strength, since increasing levels of national income are devoted to debt financing, rather than expenditure programs (Narayan 2008). The Mexican economy appears to have followed Wagner's Law during more than 50 years of mid-century expansion (Mann, 1980), as it did for a large sample of nations at similar levels of economic development. Despite this, the relationship was weak for very poor and very wealthy nations, suggesting that the law might only apply to a specific level of post-industrial development (Abizadeh and Gray 1985).

A review of the European countries has shown that the law has particularly strong

explanatory power for many developed countries on the continent. The evidence is mixed for the less developed nations like Greece and Portugal (Courakis, Moura-Roque and Tridimas 1993). In a study of the law at the industry level in Greece, the law was found only to apply to the defense industry (Chletsos and Collias 1997).

In historical and more contemporary tests of the United Kingdom, the law was found to have strong explanatory power. One author found that "unidirectional causality ran from income to public expenditure … [which provides] unambiguous support for Wagner's Law … for Britain during the period 1870-1913" (Oxley 1994, 295). Gyles (1991; also see Chang 2002; Chang Lui and Caudill 2004) demonstrated that in the UK, Wagner's Law is highly significant as an input-output mechanism. A study of six nations in 19th century Europe showed that "Granger-causality was mainly unidirectional from income to government expenditure. Thus, there is considerable support for Wagner's Law" (Thornton 1999, 416). Finally, Wahab (2004) observed the presence of Wagner's Law in the OECD countries was strong in periods of accelerating national income (also see Kolluri 2000).

Until this point, it may appear to be pure conjecture to apply the principles of Wagner's Law to any study of the United States. Yet, a few scholars have demonstrated its validity at the national and state levels. In a comparative study of four Asian nations, plus the UK and U.S., strong support was found for the validity of Wagner's law in five of those nations studied, with the exception of Thailand (Chang 2002; Chang Lui and Caudill 2004). The United States has also been studied in a non-comparative model, and strong support for Wagner's Law was found. (Islam 2001). In justifying the application of the law at the state level, Abizadeh and Yousefi (1988) argue that since Wagner himself assumed that his "law" applied to peaceful nations with generally homogeneous cultural and institutional characteristics, then the theory could be applied

to the American states. Indeed, they find that increases in income do lead to even larger increases in public expenditure in a study of a dozen states.

Unemployment

While Wagner's Law provides theoretical justification for the inclusion of income in a model of distributive politics, macroeconomic theory provides some justification for also including unemployment. Assume that an increase in unemployment could lead to members of Congress increasing their requests for projects in order to shore up the lot of the jobless in their districts. The economic logic is that rising unemployment places downward pressure on wages since unemployed workers have less bargaining power than employed workers. This relationship is captured in the nominal wage determination,

$$W = P^e F(u, z)$$

where W = wages; P^e = expected prices; u = unemployment, inversely related to wages; and z = all other variables, positively related to wages (Blanchard 2000, 114). As wages decline in environments of high unemployment, when consumers have less disposable income, firms face reductions in output. Lower output levels and the costs associated with holding excess inventory causes downward pressure on prices, and in the end, profits. This description, in large part, echoes the economic environment occurring during the U.S. recession that took hold in 2008. Given these conditions, one might conclude that members of Congress would be tempted to dole out earmarks to those businesses and organizations suffering during the economic slump. In this case, then, rising unemployment might lead to district level increases in federal funding. Such logic would be consistent with the fiscal stimulus hypothesis, in which weak economic conditions could help explain pork barrel spending (Frisch 1998; Martin 2003).

V. Hypotheses

This paper has three main hypotheses of interest. The first is drawn from the premise that characteristics of the district should be considered alongside intra-chamber political factors in determining who gets a certain class of federal awards and how much. For example, a district with more farm acreage and rural land is expected to receive more new awards and a greater share of Department of Agriculture funding than a district that is, for example, primarily urban. Similarly, a district with a greater than average percentage of blue collar workers or members of a union would be expected to receive more awards in both count and value from the Department of Labor. Table 4 (below) contains the predicted direction for each of the district-level variables and the actual results.

The second hypothesis centers on income effects. The income effects predicted by Wagner's Law are frequently tested in the economics literature. Based on the theoretical analysis outlined above, districts with higher median income levels are expected to receive a larger share of government spending. Higher median incomes lead to growth in the public sector and associated advances in technology. At some juncture, it is the role of government to increase its participation in this relative growth by expanding its administrative functions as indicated by a rise in federal spending. Thus, districts with larger per capita income would receive both a greater number of new awards in addition to more aggregate funding.

The third variable of interest in unemployment. As unemployment rises, corporate output declines and districts are expected to receive more projects in order to make up for lost production. Frisch (1998) too argues that high levels of unemployment can lead to increases in pork barrel spending. Thus, I expect to see the number and value of projects rise as a response to rising levels of unemployment.

My primary controls are the political variables that research has shown significantly impact the distribution of various types of federal funds. Prior vote share has been shown to influence spending in a variety of ways, from award type (Lazarus and Reilly 2009), to shares accruing to vulnerable members (Martin 2003; Stein and Bickers 1994; Lazarus 2008), to benefits for political parties (Levitt and Snyder 1995; Keefer and Khemani 2009). Members of the Democratic Party and more liberal members of Congress are expected to deliver more federal money to their districts than are Republicans or conservatives. Members of the majority party have been shown to use their majority party status to overcome collective action issues in order to direct benefits to their districts (Cox and McCubbins 1991 and 1995; Levitt and Snyder 1995; Bickers and Stein 2000). Members who hold powerful leadership posts, such as those on relevant authorizing and appropriating subcommittees, are expected to receive more funding for their districts (Carsey and Rundquist 1999, Rundquist and Carsey 2002, Adler 2002; Arnold 1979). I add a number of additional committee positions as controls, such as membership on Rules, Budget, Ways and Means, and Appropriations. More senior members of Congress and members of the prestigious "Cardinals" coterie should also be able to deliver more pork to their districts than non-members. An exception to this hypothesis is that some powerful Cardinals may be able to force members to relinquish awards (Savage 1991). Finally, districts with larger land area should receive more awards because new assistance projects, like earmarks, are well suited for large geographic areas (Frisch 1998; Gryzki 1991; Lazarus 2009).

VI. Data, Variables and Empirical Model

The focus of this study is to measure the effects of variation in demand side variables and select economic factors on the distribution of new federal grants and awards. The dependent

variable is operationalized twice: once as a district-level count of new federal awards, and again as a district-level aggregate dollar value of new awards. The unit of analysis is the U.S House district and the sample size is 435 for the total number of districts. This analysis proceeds in two parts. First, I estimate a single model in which I test the impact of political and economic factors on distributive spending within a single model. Next, I separate the data into 23 separate federal agencies and bureaucratic divisions and for each category test the impact of characteristics of local demand, in addition to the political and economic variables tested in the single model.

Data on these awards are drawn from the Federal Assistance Award Data System (FAADS). The system represented a sea change in financial accountability, as reporting of such awards up until 1981 was conducted with paper and film and were often hard to track down. Weissert (1981, 76) summarized the new data collection effort at the time: "The FAADS system is an outgrowth of an aid information study under the Federal Program Information Act which requires the executive branch to improve distribution of federal assistance information … the Office of Management and Budget provides policy oversight and guidance for the development and implementation of FAADS" (See Bickers and Stein 1991 for a comprehensive review of the history of federal record keeping).

For the 2008 fiscal year, these data covered more than 600 separate programs across thirty-three departments and agencies. The entire FAADS database includes itemizations for 1.5 million awards valued at $3 trillion dollars. Awards can be for single Congressional districts or spread across multiple districts. More than half of awards and 40 percent of the total value of awards went to single districts. The data can be aggregated a number of ways, but perhaps the most important breakdown, besides by Congressional district or agency, is by the type of award.

FAADS award type is classified in one of four ways: (1) as a new assistance action; (2) as a continuation from a previous award; (3) as a revision, representing a change in funding; or (4) as a funding adjustment to an already completed project. In the 2008 fiscal year, there were 531,000 new awards – about one-third of the total awards – valued at $262 billion. Table 1 provides a summary of new award counts and values across the 23 agencies and divisions studied in this paper. The table also includes jurisdictional authorizing committees and appropriations subcommittees for each agency.

Table 1
Summary Statistics for Dependent and Independent Variables

Dependent Variables	**Mean**	**Min**	**Max**	**SD**
FAADS counts	1,222	149	6240	893
FAADS dollars	$600,000,000	$57,578,270	$9,445,000,000	$660,000,000
Independent Variables				
Prior Vote — Democrat	.397	0	1	.387
Prior Vote — Republican	.294	0	1	.323226
Democrat	—	0	1	—
NOMINATE	.016062	-.73	.999	.438557
District Ideology	49.3057	21	90	14.2579
Party Leader	—	0	1	—
Appropriations	—	0	1	—
Ways & Means	—	0	1	—
Budget	—	0	1	—
Rules	—	0	1	—
Committee Chair	—	0	1	—
Majority Party Cardinal	—	0	1	—
Minority Party Cardinal	—	0	1	—
Seniority	11.1	1	52	8.4
Income	$43,437	$19,311	$80,397	$10,939
Unemployment	2.81	1.24	6.76	.86
Land Area	8,335	12	663,267	34,411

Bickers and Stein (1994; also see Lowi 1964) argue that scholars should use new, not existing, awards in studies of distributive politics. A new award "is an indicator of the flow of resource commitments by the federal government" (Bickers and Stein 2004, 810). There is some

debate over the merits of using dollar values in addition to counts. Bickers and Stein (1994, 394) argue that in the mind of an election-seeking member of Congress, the ability to deliver many new awards of lesser value is more important than a small number of large awards. That it is "the occurrence of an award not its dollar size that is usually salient to constituents" is challenged by Alvarez and Saving (1997, 815). They argue that voters "would prefer a program in their district with a large dollar amount to a program with a small dollar amount." I thus employ a dependent variable that measures the total value of new district level awards, in addition to the number of awards (see also Adler 2002 for the use of dollars as a dependent variable).

As noted above, not all federal awards go to single districts. Of the 435 Congressional districts, 273 received single-district awards, while in 162 districts, awards were distributed in an unspecified manner. This method of distribution leaves open the possibility of error in each of the two dependent variables. Bickers and Stein (1991) address this error by distributing such awards (coded "90" by FAADS) according to county-level population data. That approach, while useful, requires data collection and assimilation resources that are beyond the scope of this paper. To address this issue, I evenly distributed multiple-district awards across each district within a state. An alternative to this approach would be to run each test with a sample size equal to 273. While such an approach might generate conclusions about federal funding within a segment of Congress, it makes it hard to draw conclusions about the entire institution.

Independent variables of interest are drawn from Lazurus's (2009) dataset used in his study of the effects of district level demand on earmark distribution during the 2008 fiscal year of the 110th Congress (see also Adler 2002). That study investigated effects across 16 different federal agencies. This study includes most of those agencies, in addition to a few more for a total of 23 separate tests. For the most part, I was able to use the same existing data and test its effects

against distributions that theoretically might be impacted by similar levels of local demand. For example, my study includes a number of military departments – Navy, Army, Air Force – that were not included in Lazarus. So for example, levels of local demand used in the estimate of Army awards are also used for the three other departments of the military. On at least a few occasions, I developed new independent variables for authorizing committees and appropriations subcommittees that were not included in Lazarus' study of earmarks. An example of this is the authorizing committee for the Department of Homeland Security.

I add variables for median income to test the effects of Wagner's Law and employment to test whether district-level joblessness results in members of Congress creating new programs in an effort to generate jobs. Both economic variables are drawn from the annual American Community Survey, which collects national data for the Census on non-decennial years.

Control variables include measures of electoral vulnerability, ideology, seniority, committee membership, party, and leadership. Existing theories of pork barrel politics and logrolling predict that increases in or the presence of these measures results in home districts receiving a larger number of awards or more awards. The first aggregate model of counts and dollars will include political and economic predictors to account for demand for government spending, broadly construed.

Aggregate model (Table 3):

New Awards = *f* (Democratic vote share, Republican vote share, party, district ideology, party leader, authorizing committee, appropriations subcommittee, Appropriations, Ways & Means, Budget, Rules, committee chair, major Cardinal, minor Cardinal, seniority, income, unemployment, land area)

Demand-side variables added to aggregate model (demand-side results reported in Table 4):

New Awards = *f* (variables from aggregate model + 1st demand-side variable, 2nd demand-side variable (if applicable) and 3rd demand-side variable (if applicable))

All estimations of the number of new awards are performed using negative binomial regression with robust standard errors. Histograms of the dependent variable reveal overdispersion parameters greater than zero, rendering NBR the appropriate estimation method for counts (Lowry and Potoski 2004; Lazarus 2009). All estimations of the value of new awards are performed using ordinary least squares (OLS) regression with a logged dependent variable (Achen 2000, Martin 2003, Lowry and Potoski 2004; Lazarus 2009).

VII. Empirical Results

Summary statistics for dependent and independent variables are found in Table 1, above. In Table 2, each federal agency or bureaucratic division is followed by summary data about new FAADS awards in addition to the relevant jurisdictional committees that are included in unique estimations across the separate agencies. Three agencies — HUD, Agriculture, and HHS — received more than 100,000 new federal assistance awards for FY 2008. These three agencies, along with Transportation and Education, received awards totaling more than $10 billion. The Department of Education was the only agency with an average award exceeding $2 million. Four other agencies — Labor, Transportation, Commerce and the Army — received awards averaging more than $1 million each.

The regression in Table 3 presents results (with robust standard errors in parentheses) of the aggregate test of intra-chamber and economic variables. Columns 2 and 4 include all

Table 2 Agencies, Awards, and Committee Jurisdiction, FY 2008					
Agency / Division / Department	**FAADS**			**Jurisdictional Committees**	
	Number of New Awards	**Value of New Awards ($)**	**Avg. Award Value ($)**	**Authorizing Committee**	**Appropriations Subcommittee**
HUD	141,166	38,827,114,698	275,046	Finance	Transportation
Agriculture	138,744	71,565,552,427	515,810	Agriculture	Agriculture
HHS	137,445	58,406,268,709	424,943	Energy & Commerce	Labor
Transportation	32,383	47,660,078,178	1,471,762	Transportation	Transportation
NSF	12,746	2,394,351,783	187,851	Science	CJS
Education	8,363	18,701,424,829	2,236,210	Education & Labor	Labor
Interior	7,879	2,185,686,147	277,407	Natural Resources	Interior
DHS	5,502	4,325,792,927	786,222	Homeland Security	Homeland Security
Justice	5,345	2,641,631,625	494,225	Judiciary	CJS
Arts-related	3,574	1,187,921,256	332,379	Education & Labor	Labor
EPA	2,074	2,044,592,386	985,821	Science	CJS
Commerce	1,832	2,278,391,056	1,243,663	Energy & Commerce	CJS
Labor	1,599	2,875,276,439	1,798,172	Education & Labor	Labor
Energy	1,141	1,036,870,069	908,738	Energy & Commerce	Energy
Army	1,035	1,123,037,493	1,085,060	Armed Forces	Defense
Navy	989	287,266,935	290,462	Armed Forces	Defense
Air Force	980	143,247,037	146,170	Armed Forces	Defense
NASA	766	57,873,665	75,553	Science	CJS
Defense	598	97,554,399	163,134	Armed Forces	Defense
National Service	501	142,341,625	284,115	Education & Labor	Labor
Small Business	220	179,125,127	814,205	Finance	Finance
Treasury	168	8,504,393	50,621	Finance	Finance
Army Corps	121	43,754,510	361,608	Transportation	Transportation
Not tested	26,274	3,952,839,119	150,447	—	—
Totals:	**531,418**	**262,166,496,832**	**493,334**	—	—

coefficients for counts and dollars, respectively. Neither is directly interpretable because negative binomial regression was used to estimate counts, and the dependent variable for dollars

is logged. Substantive effects are estimated through the use of Clarify software (Tomz, et al. 2001) and are represented in Figures 1-11.

The results for the effects of changes in income suggest that Wagner's Law of "increasing state activity" is supported for the distribution of dollars but not of counts. This is the expected result, since past empirical tests almost universally test the predictive power of Wagner's law on the expenditure of dollars, not the growth in projects. For dollars, districts with higher incomes receive more total dollars, as increasing income one standard deviation above the mean results in $81 million more in new federal assistance. For counts, an increase in one standard deviation above mean district income results in a decline of about 34 new awards per district, all else equal. The relationship is monotonic but possibly non-linear, as adding a quadratic control for income results in a null relationship between income and counts. Adding a quadratic control for income to this estimation reveals that Wagner's Law may have some explanatory power — to a point. Because the coefficient for the quadratic is negative instead of positive, there exists the possibility that beyond a certain point, it is no longer politically expedient to fund increasingly wealthy districts, despite the developmental need.

The estimation of counts reveals that districts with higher levels of unemployment also receive fewer new assistance awards — 22 fewer, all else equal. This result runs contrary to the fiscal stimulus hypothesis that districts in need of jobs-generating stimulus will receive more awards. On the other hand, the estimation of dollars does support the fiscal stimulus hypothesis. In this case, an increase of one standard deviation from the mean results in $58 million more in new federal assistance for the district. The finding suggests that dollars may be a more important indicator of economic stimulus than project counts. Taken together, districts with higher incomes and higher unemployment receive fewer awards, but more dollars.

Table 3
Negative Binomial Regression Results for New FAADS Award Counts and OLS Regression Results for New FAADS Award Dollars, FY 2008

Independent Variable	Number of awards	Dollar Value of Awards
Prior Vote — Democrat	**.774*** **(.276)**	**.924*** **(.329)**
Prior Vote — Republican	.034 (.339)	.075 (.563)
Democrat	**-.759*** **(.324)**	-.469 (.429)
NOMINATE	**-.665*** **(.220)**	-.207 (.215)
District Ideology	-.003 (.004)	**-.011** **(.004)**
Party Leader	-.122 (.120)	-.020 (.124)
Appropriations	-.022 (.077)	-.002 (.075)
Ways & Means	-.024 (.087)	-.043 (.105)
Budget	-.108 (.083)	-.171 (.103)
Rules	-.118 (.129)	.082 (.090)
Committee Chair	.015 (.120)	-.163 (.156)
Majority Party Cardinal	.271 (.258)	-.035 (.206)
Minority Party Cardinal	-.004 (.128)	-.106 (.199)
Seniority	-.003 (.004)	-.001 (.004)
Income	**-9.36e-06*** **(3.27e-06)**	**.00001*** **(2.94e-06)**
Unemployment	**-.147*** **(.041)**	**.102*** **(.039)**
Land Area	**.212*** **(.024)**	**.066*** **(.020)**
Constant	**6.559*** **(.615)**	**19.140*** **(.569)**
N	435	435
Pseudo R^2	.04	—
R^2	—	.09
Log Pseudolikelihood	-3,299	—
Wald χ^2	450	—

The results reveal that a number of political factors heavily influence the distribution of counts and to a lesser extent, dollars. Democrats with higher vote share during the previous election were able to acquire more benefits for their districts — both in terms of counts *and* dollars. A one standard deviation increase in prior vote share for Democrats translated into 550 extra awards and $180 million. No such effects were found for Republican prior vote share. This result is contrary to a body of evidence suggesting that vulnerable members tend to acquire greater benefits for the districts (Stein and Bickers 1994 and 1996; Levitt and Snyder 1997; Lazarus 2009; Lazarus and Reilly 2010). On the other hand, it may be true that during the 110th Congress, districts that delivered strong results for Democrats were rewarded with new federal assistance. Voters did, in fact, give Democrats a majority in both the House and the Senate (by caucusing with Independents) for the first time since the end of the 103rd Congress in 1995.

As predicted, liberal members (those with increasingly negative NOMINATE scores) received more awards than more conservative members. A one standard deviation decrease from the chamber's mean NOMINATE score is associated with an increase in new awards by 392. Members of the Democratic Party appear to receive fewer awards — 453 as the code moves from 0 for Republicans to 1 for Democrats. Districts in which John Kerry received a higher vote share in 2004 received $48 million less in new federal assistance, all else equal.

The most surprising finding is the absence of significant committee membership effects in the controls for all standing and jurisdictional committee posts. Neither party leaders, nor powerful committee members, nor chairmen, nor Cardinals, nor senior members of Congress can be shown, by virtue of their jurisdictional standing, significantly to impact the distribution of new federal awards for their district. These results, as later tests show, are consistent across

Figures 1-6
Substantive Effects of Significant Independent Variables on FAADS Counts

Figure 1
Prior Democratic Vote

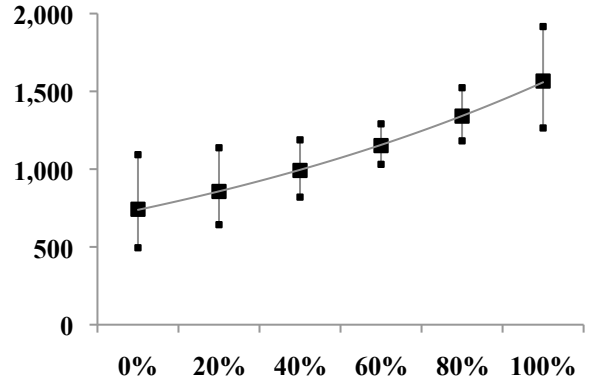


Figure 2
Democratic Party Membership (1 = Democrat)

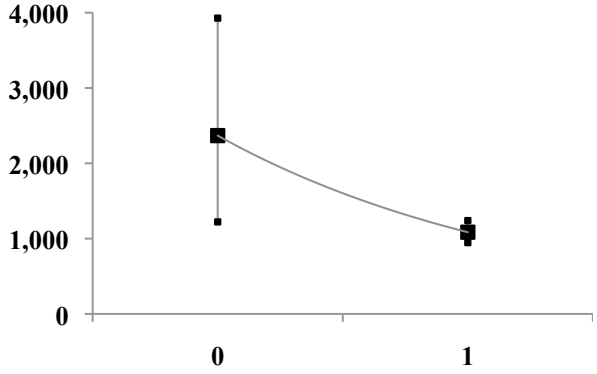


Figure 3
Ideology (NOMINATE)

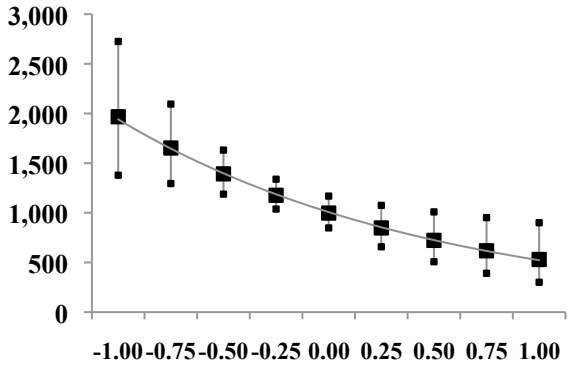


Figure 4
Income

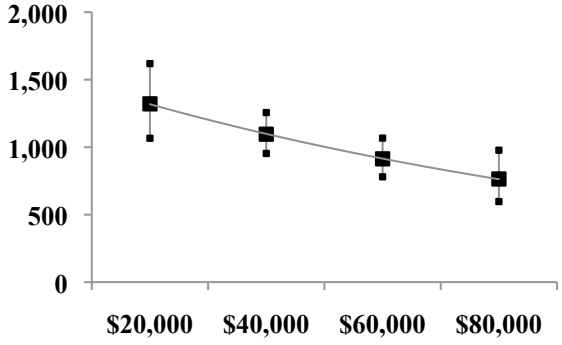


Figure 5
Unemployment (%)

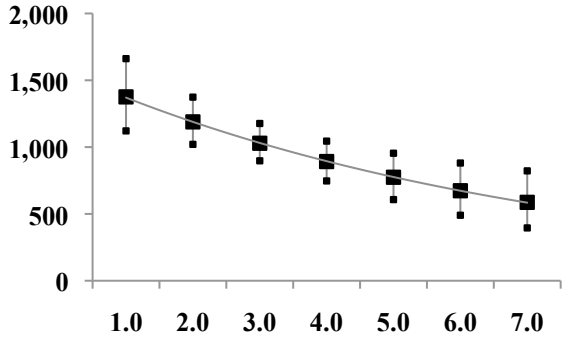
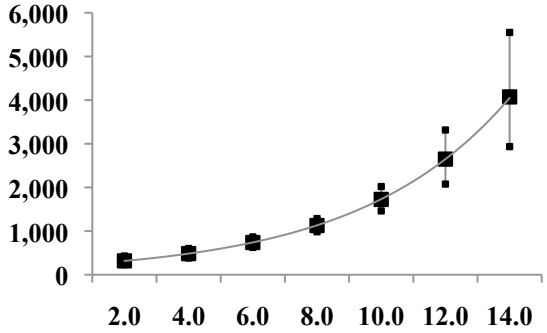


Figure 6
District Size (Logged Square Miles)



Figures 7-11
Substantive Effects of Significant Independent Variables on FAADS Dollars ($000,000)

Figure 7
Prior Democratic Vote

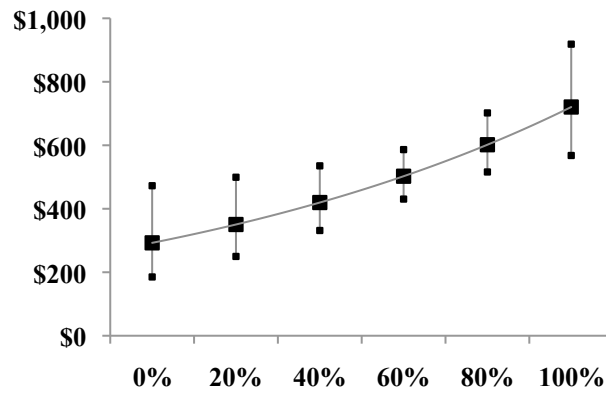


Figure 8
District Ideology

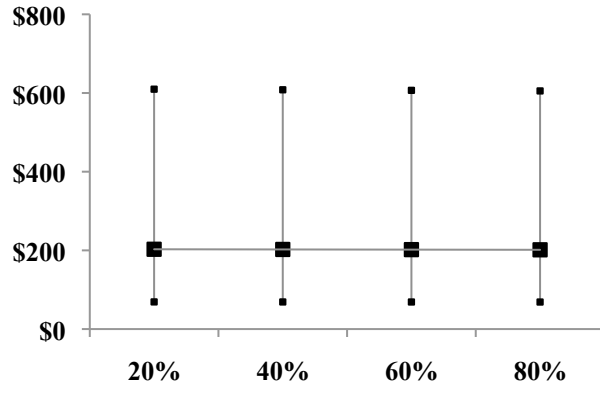


Figure 9
Income

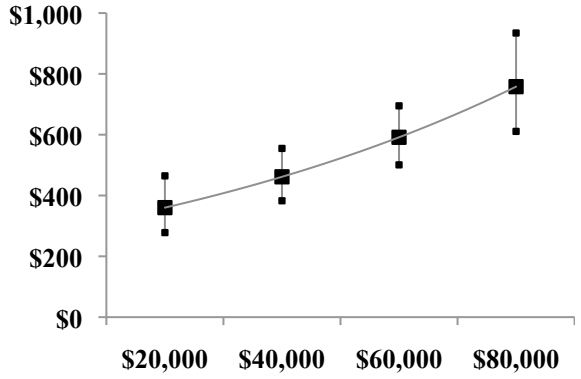


Figure 10
Unemployment (%)

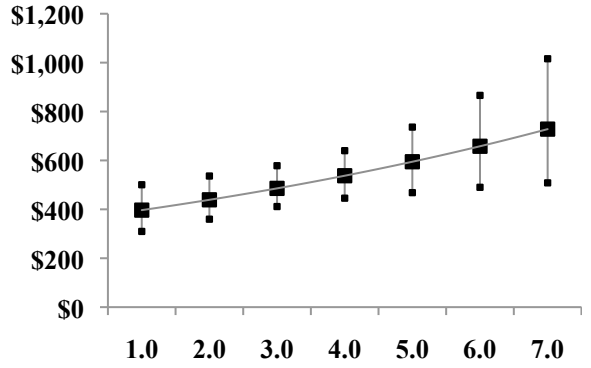
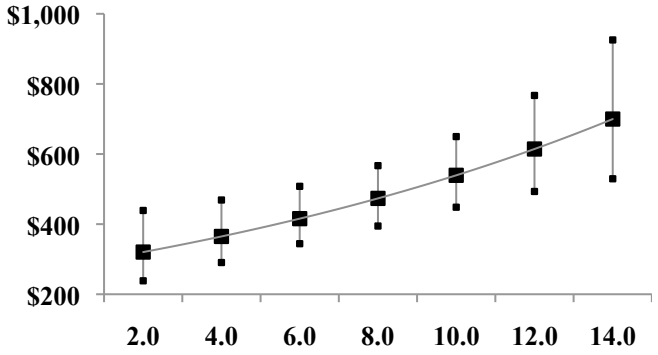


Figure 11
District Size (Logged Square Miles)



virtually all agencies with the exception of a few cases. The results are somewhat at odds with the standard pork barrel thesis that powerful politicians take advantage of their assignments in order to steer funds to their districts and supports the emerging view that other factors matter (Owens and Wade 1984).

A final variable demonstrates highly consistent significant effects for land area. In the case of both counts and dollars, larger districts get more. A one standard deviation increase in logged land area corresponds with 380 more new awards in terms of counts and $89 million in terms of dollars. Frisch (1998) argues that earmarks — a separate though related form of distributive spending — "involve projects suited to large geographic areas." Land area was logged to minimize the possibility of skew effects from large states, and separate tests removing the congressional district from Alaska (largest state; 18 percent of total U.S. territory) do not impact levels of significance in the original aggregate estimations of counts or dollars. The significant findings with respect to land area are consistent with several empirical tests of earmark distribution in the House (Frisch 1998; Gryzki 1991; Lazarus 2009).

Effects across Federal Agencies and Bureaucratic Divisions

Table 4 presents the results of 23 separate tests of district level demand across nearly all agencies and divisions present in the FY 2008 FAADS database. Counts and dollars across districts are regressed on the same variables found in Table 3 with the addition of one to three demand-side variables for each agency. Each agency, its associated demand-side variables and expected coefficient direction are listed in columns 1-3. The first expected direction refers to the hypothesis that counts will increase along with larger values of demand-side variables, while the second expected direction refers to the expected changes in dollars. All hypothesized directions

are positive. Substantive effects for select hypothesized relationships are included in Table 5, below.

The last column presents the results of 23 separate estimations including all relevant variables. As noted above, independent variables are drawn from Adler (2002) and Lazarus (2009). The entire model reveals significant relationships in more than one-third of total cases — 21 out of 56 for both counts and dollars. That is, the model of both counts and dollars included 56 demand-side variables across the 23 agencies and in 21 cases, the effect was positive and significant. Both significant and non-significant signs are reported in Table 4, with significant outcomes denoted with an asterisk. The most robust results in which at least half of hypothesized indicators are significant and positive occurred for HUD, HHS, NSF, Interior, the arts, Labor, Energy, and Treasury. Results were positive and significant for both counts and dollars for 12 separate demand-level indicators. In a number of cases, the same indicators that correlate with the distribution of the number of earmarks (Lazarus 2009) also correlate with the distribution of the number of new federal assistance awards. They are HUD (population density), Agriculture (rural population), Energy (has research university), Interior (parks area), and Commerce (has research university and borders ocean).

As was the case with aggregate model, increases in income are strongly correlated with the distribution of new dollars, consistent with the predictions of Wagner's Law. In 17 out of 23 agencies, income is positively correlated with new award dollars. Income and counts are positively correlated in 7 of 23 agencies. The most robust results, in which both dollars and counts are greater in districts with higher incomes occur for HHS, NSF, Education, the arts, Commerce, Energy, and the Navy.

Table 4
Agencies and Associated Characteristics of District Demand
Predicted and Actual Results

Agency / Department	District Demand Indicator Description	Predicted Result[1]	Actual Result[2]
Housing and Urban Development, Department of	Population density	+ / +	+* / +*
	% of residents living in urban areas	+ / +	-* / +*
	Dummy: district is in one of 50 biggest cities	+ / +	-* / -*
Agriculture, Department of	% of residents employed in farming, fishing and wildlife	+ / +	+ / +
	% of residents living in rural areas	+ / +	+* / +
Health and Human Services, Department of	% of population employed in health care	+ / +	+* / +*
	# of hospitals in district	+ / +	- / +
Transportation, Department of	% of population employed in transportation and public utilities	+ / +	+ / +
	% of population employed in construction	+ / +	- / -
National Science Foundation	% of population who are students	+ / +	+* / +*
	Dummy: district has a research university	+ / +	+* / +*
	% of population who are scientists	+ / +	+ / +
Education, Department of	% of population who are students	+ / +	+* / +
	Dummy: district has a research university	+ / +	+ / +
	Number of major universities	+ / +	+ / +
Interior, Department of the	Population density	+ / +	+* / +
	# of national parks (by state)	+ / +	-* / +
	acreage managed by Bureau of Land Management (by state)	+ / +	+* / +*
Justice, Department of	population density	+ / +	+* / +
	% of residents living in urban areas	+ / +	+ / +*
	dummy: district is in one of 50 biggest cities	+ / +	-* / +
Homeland Security, Department of	population density	+ / +	+ / +
	% of residents living in urban areas	+ / +	+* / +
	dummy: district is in one of 50 biggest cities	+ / +	-* / +
Library Sciences, Arts, Humanities, etc.	dummy: district has a research university	+ / +	+* / +*
	population density	+ / +	+* / +*
	% of residents who are students	+ / +	+ / +
Environmental Protection Agency	dummy: district is in one of 50 biggest cities	+ / +	+ / +*
	population density	+ / +	+ / +*
Commerce, Department of	dummy: district has a research university	+ / +	+* / +*
	dummy: district boarders an ocean	+ / +	+* / +*
Labor, Department of	% of population employed in blue collar professions	+ / +	+* / +*
	% of population belonging to a union	+ / +	-* / -*
Energy, Department of	dummy: district has a research university	+ / +	+* / +*

Table 4
Agencies and Associated Characteristics of District Demand
Predicted and Actual Results

Agency / Department	District Demand Indicator Description	Predicted Result[1]	Actual Result[2]
Army, Department of the	# of military installations in district	+ / +	+ / +*
	# of major military installations in district	+ / +	+* / +
	% of population in the military (noncivilian) workforce	+ / +	+ / +
Navy, Department of the	# of military installations in district	+ / +	+ / +
	# of major military installations in district	+ / +	+ / +
	% of population in the military (noncivilian) workforce	+ / +	+ / +*
Air Force, Department of	# of military installations in district	+ / +	+ / +
	# of major military installations in district	+ / +	+ / -
	% of population in the military (noncivilian) workforce	+ / +	+ / +
National Aeronautics and Space Administration	dummy: district contains a NASA installation	+ / +	+* / +
Defense, Department of	# of military installations in district	+ / +	+ / +
	# of major military installations in district	+ / +	+ +
	% of population in the military (noncivilian) workforce	+ / +	+ / +
Corporation for National and Community Service	population density	+ / +	+ / +
	% of residents living in urban areas	+ / +	- / +
	dummy: district is in one of 50 biggest cities	+ / +	+ / +*
Small Business Administration	size of the state's banking assets	+ / +	+ / +
	% of population employed in finance, insurance, and real estate	+ / +	+ / +*
Treasury, Department of the	size of the state's banking assets	+ / +	+* / +
	% of population employed in finance, insurance, and real estate	+ / +	+* / +*
U.S. Army Corps of Engineers	dollars of damage caused by floods (10-year average, by state)	+ / +	+ / +*
	dollars of flood damage prevented (10-year average, by state)	+ / +	+ / +

Notes:
[1] Predicted results indicate counts first and dollars second.
[2] Actual results indicate counts first and dollars second. All coefficient directions are noted. Only significant directions are represented with asterisk.
* — Significant at $p < .05$.

Higher unemployment levels are significantly correlated with more dollars in 10 agencies, lending support to the fiscal stimulus hypothesis. We know from the aggregate model that districts with higher unemployment receive a smaller *number* of awards and this is also true

for counts for six agencies — the National Science Foundation, Labor, the Army, NASA, the Department of Defense, and the Corporation for National and Community Service.

Political variables that significantly predicted the distribution of counts and dollars are significant across several agencies. In three categories of agency awards — HUD, HHS, and the Army — higher incumbent vote percentages for Democrats result in greater award counts and dollars. This is true across seven agencies for counts and 11 agencies for dollars. Another consistently significant variable is member ideology, where more liberal members secure more benefits. Consistent with the aggregate model, this is much more frequently the case for counts than for dollars. Also consistent with the aggregate model is that Democrats are likely to receive fewer awards than Republicans, likely because of the colinearity between the party and ideology variables.

Membership on standing committees, seniority, and leadership roles are rarely significant across the 23 agencies tested, consistent with the aggregate model, but contrary to a great deal of existing empirical evidence. A surprising result is that membership on the powerful Appropriations committee is significant in only two out of 46 tests (23 tests each for counts and dollars), and in both cases the coefficient is in the wrong hypothesized direction. This is similar with membership on Ways and Means and on Budget. Also contrary to a great deal of empirical evidence is the incredibly weak predictive power of membership on Authorizing committees and Appropriations subcommittees. Members of these committees are thought to influence program creation and funding levels significantly, but only in a handful of cases does this appear to be the case. Only membership on the authorizing committee for Agriculture appears to impact the distribution of new agriculture awards. Membership on Appropriations subcommittees appears to matter only in the cases of arts programs, NASA, community service, and the Army Corps of

Engineers. These programs receive neither a large number of awards nor a large aggregate value of awards.

As expected, larger districts receive more awards and more dollars. The scope of this result is impressive, occurring in 19 agencies for counts and 12 agencies for dollars.

VIII. Discussion

The gains-from-exchange model of distributive theory argues that members of standing congressional committees are able to secure a disproportionate share of federal funds for their districts. Yet the results of the present study offer evidence to the contrary. In aggregate tests of the distribution of new federal assistance and in dozens of demand-side estimations across federal agencies and bureaucratic divisions, this hypothesis finds little to no support. Instead, measures of district demand, variations in economic indicators, and select political factors like vote share, party, and ideology have far more predictive power than membership on jurisdictional congressional committees.

The findings in this study provide evidence that new federal assistance awards are not distributed based solely on political and intra-chamber factors, but on economic and geographic ones as well. The article's test of Wagner's Law of "increasing state activity" demonstrates that districts with higher incomes receive more aggregate funding, but fewer total awards. Such districts, then, receive larger awards on average. This could be due to the fact that districts with greater tax revenue also demand larger federal projects, though not necessarily more. A future analysis could include a more highly specified test of Wagner's Law, in which the distribution of federal assistance is tested against various levels of income growth over time across a number of Congresses.

As a study of the distribution of new federal assistance awards during the 110th Congress in FY 2008, the findings herein are merely a snapshot of distributive effects. Federal assistance in the form of earmarks (Law and Tonon 2006; Boyle and Matheson 2009; Lazarus 2009 and 2010) and contingent liabilities (Bickers and Stein 1996 and 2004; Lazarus and Reilly 2010) has also been tested and such tests should be applied to more recent Congresses. Moreover, Adler (2002) demonstrated that committee effects can vary widely across different agencies during multiple Congresses.

The present study could be improved by adding federal awards for FY 2009 in order to capture the entire 110th Congress, in addition to including the prior, Republican-controlled House in order to search for more robust majority party effects. Future studies of pork distribution should also include a closer inspection of effects in the Senate (Lauderdale 2008 and Lazarus 2009).

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