

Organized Interests and the Politics of Federal Discretionary Grants

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Despite their importance in theories of distributive spending, interest groups and other private and public organizations are largely absent from empirical research on the allocation of federal spending to subnational jurisdictions. We find that organized interests are significant determinants of the allocation of federal discretionary grants to states for 1991 through 1998 across seven policy areas. In contrast, we find only meager effects for supply-side variables suggested by the literature. We conjecture that supply-side effects are highly contingent on political circumstances and the type of spending being analyzed.

The allocation of federal spending to subnational political jurisdictions has been a major subject of scholarly scrutiny for some time. In part this interest reflects the intrinsic importance of the subject. But studying federal spending is also worthwhile for what it reveals about politics in the United States, particularly the representation linkages between unorganized constituents, organized interests, and elected politicians.

From early research on iron triangles through more recent studies, an evaluative yardstick for research on federal spending has been the extent to which the supply of federal spending matches constituents' demands. Along these lines, some empirical research focuses on the demand side by investigating how citizens' preferences influence federal spending (e.g., Stein and Bickers 1995). Other empirical research focuses on the supply side by asking how politicians use membership on key legislative committees to channel funds to constituents (Carsey and Rundquist 1999a, 1999b; Rundquist and Carsey 2002), how partisan control affects the flow of federal spending to states and congressional districts (Bickers and Stein 2000; Levitt and Snyder 1995), or how federal spending is affected by electoral competition (Dahlberg and Johannson 2002; Wright 1974). Missing from this research is systematic evidence of the effects of organized interests on federal spending, a striking omission given the theoretical case for the political importance of organizations.

In this paper, we first reintroduce the theoretical rationale for including organized interests in models of distributive federal spending. Our focus is on discretionary grant programs that allocate small, discrete awards. We then investigate the effects of organized interests on federal spending in seven policy areas across the American states for 1991 through 1998. Organized interests significantly influence the allocation of federal discretionary grants in every policy area studied, even after controlling for latent demand by unorganized constituents. In contrast, we find meager effects for supply-side variables, perhaps because of the nature of the federal spending under investigation in this paper. We conclude that future research should incorporate measures of organized interests in empirical studies of distributive federal spending.

In the next two sections of this paper, we survey the research on distributive federal spending and present the theoretical rationale for the importance of organized interests, focusing particularly on discretionary grant programs. We then describe our data and empirical model for investigating how organized interests influence federal distributive spending. The fifth section presents the results and offers some possible explanations for why we find so few supply-side effects. The final section concludes with some implications of our findings.

Supply- and Demand-Side Studies of Federal Spending

A fruitful approach to studying the allocation of federal spending to subnational jurisdictions is to consider both supply- and demand-side factors (Stein 1981). Supply-side studies ask whether the private incentives of well-placed politicians and agency officials affect federal spending patterns. Early iron-triangle theories argued that narrowly focused organized interests “captured” bureaucracies, sacrificing the public good for private gain (Huntington 1952; Lowi 1969; McConnell 1966). In more recent studies, iron triangles have softened into issue networks (Hecklo 1978) and policy subsystems (Stein and Bickers 1995) that allow for more diverse and conditional patterns of cooperation and even conflict among participants. Nonetheless, legislative committee members, backed by favorable rules and norms, may be able to use their positions to funnel disproportionate benefits to their districts (Shepsle and Weingast 1987). The committee membership hypothesis has received some empirical support, particularly in areas such as defense contracting and procurement (Adler 2002; Arnold 1979; Carsey and Rundquist 1999a, 1999b, 2002; Hird 1991; Rich 1989; Rundquist and Carsey 2002). The evidence for committee effects has not always been strong, however, with results varying even within single studies depending on measurement approaches and model specification (e.g., Anderson and Tollison 1991; Hird 1991; Rich 1989; Wallis 1998).

Another supply-side argument is that legislators respond to electoral incentives to “bring home the bacon.” Vulnerable incumbents who procure grants for their constituents improve their future electoral prospects, in part by deterring district

elites from recruiting quality challenges (Bickers and Stein 1996; Stein and Bickers 1995). However, this hypothesis has received uneven empirical support (e.g., Anagnoson 1982; Owens and Wade 1984). A different version of the reelection hypothesis posits that incumbents direct federal spending to maximize electoral support by concentrating on swing states or districts. While the theoretical rationale for this hypothesis is strong (Dixit and Londregan 1998; Lindbeck and Weibull 1993), empirical confirmation in the United States has been confined to Franklin Roosevelt's New Deal presidency (Anderson and Tollison 1991; Fleck 1999; Wallis 1987, 1998; Wright 1974).¹

Other supply-side research investigates the role of political partisanship in federal spending. Levitt and Snyder (1995) suggest that federal spending within congressional districts reflects partisan patterns of legislative control at the time the programs were enacted rather than contemporary voter demands. Bickers and Stein (2000) argue that the 1994 election led to shifts in the composition of spending that benefited constituents of the new Republican majority. Balla et al. (2002) find that partisan affiliation has little effect on whether a representative's district receives spending earmarked for higher education, but it does affect the amount of money received.

In short, supply-side studies have expanded from their iron-triangle origins to include a broader range of actors and institutional settings. The strength of the evidence for supply-side effects varies across studies, however, and those effects that are found are often subtle and conditional.

Studies of the demand side of distributive federal spending investigate how constituent characteristics affect the flow of federal money to subnational jurisdictions. These studies measure constituent demand for federal spending through demographic and economic profiles of jurisdictions' citizens to reveal whether higher spending is correlated with higher demand in different policy areas (Arnold 1979; Bickers and Stein 1996, 2000; Carsey and Rundquist 1999a, 1999b, 2002; Hird 1991; Lee and Oppenheimer 1999; Levitt and Snyder 1995; Potoski and Talbert 2000; Rich 1989; Rundquist and Carsey 2002). Some scholars distinguish between "demand" and "need" (e.g., Rich 1989), concepts whose distinctions in practice can be murky and may reflect where one sits. My own district *needs* its program awards; your district merely *demand*s them. We use the term "demand" throughout to refer to both of these concepts.

Constituent demands can be transmitted to policy makers through various channels. We use the term "latent demand" for unorganized constituent demands, generally expressed directly to politicians through voting, letters to Congress, and so on. Constituents can also express demands through formal groups and institutions, which we call "organized interests." Measuring latent demand alone

¹ Cox and McCubbins (1986) argue that risk-averse politicians will steer benefits toward their core supporters rather than uncommitted voters. Dahlberg and Johannson (2002) reject this hypothesis in favor of the swing voter hypothesis after analyzing data for intergovernmental grants in Sweden.

assumes either that organized interests' ability to represent underlying constituent demands is invariant across types of constituent characteristics, jurisdictions, and policy areas, or that organized interests are simply not important in federal spending beyond the underlying demands they represent. In fact, the extent to which latent demand gets translated into organized demand varies due to the collective action problems different interests face (Gray and Lowery 1996, chap. 6; Olson 1965; Salisbury 1969; Walker 1991). We argue below that the latter assumption is also quite problematic on theoretical grounds.

The distinction between latent demand and organized interests does not always translate cleanly into empirical measures. A business firm is an organization that can lobby the government directly, is eligible to receive federal distributive awards, and is also represented by other organizations that lobby government on its behalf (Browne 1998). A farm could be a small, family-run operation or a large corporation, each of which may also be represented by an agricultural association. Other organizations such as a nonprofit job training center or community theater may also look to influence government, but may lack the equivalent of a chamber of commerce that represents their interests. Still other organizations such as environmental groups represent the collective interests of individual members and supporters.

Our analysis includes measures for three types of organized interests: tax-exempt organizations, private establishments, and municipal governments and special districts. Tax-exempt organizations include chambers of commerce that represent businesses, agricultural groups that represent farms, environmental groups that have individual members, and nonmembership organizations such as social service providers and community art museums. Private establishments include farms, business establishments, and other private organizations. They might be considered latent demand measures because they are direct recipients of distributive awards, and they are in some cases represented by other organized groups that lobby government. Yet, these private establishments are also organizations that may lobby government directly on their own behalf. Finally, municipal governments and special districts may lobby the federal government, particularly on issues such as the allocation of federal grant money (Bickers and Stein 2002; Browne 1998).

Note that the efficacy of organized interests in influencing federal grant programs could actually be *inversely* related to their numbers. If funding for federal programs is a public good, then larger numbers of organized interests should experience greater collective action problems (Bickers and Stein 2002). Moreover, for a given level of funding, organized interests in a particular jurisdiction may "waste" resources by competing for grants in a zero-sum game. In practice, bureaucrats and politicians manage programs to avoid such competition, for example by splitting a larger program into smaller ones with narrower eligibility criteria (Stein and Bickers 1995). In any case, whether jurisdictions with more organized interests receive fewer or more awards is precisely the empirical question we address below.

Federal Discretionary Grant Programs

Perhaps the place to begin looking for the influence of organized interests on distributive federal spending is discretionary grant programs. Discretionary grant programs are distinct from formula programs, which allocate funds “to states or communities in accord with a distribution formula prescribed by law or regulation for ongoing activities” (Bickers and Stein 2000, 1075 n. 4). Discretionary programs generally involve many relatively small awards that can be narrowly targeted to specific interests. Conversely, major redistributive programs are often administered through formula grants. In a typical discretionary grant program, an eligible group applies to a government agency for a grant that it promises to spend for specified purposes. One example is the U.S. Department of Agriculture’s Market Access Program, which gives awards for promoting agriculture exports to organizations such as the North American Blueberry Council. Another example is the Department of Education’s Centers for Independent Living Program, which funds centers that assist individuals with disabilities.

A total of 72,654 discretionary federal grants were made in 1991 for the seven policy areas we study, with a current dollar value (excluding contingent liabilities) of \$17.3 billion. While this was less than 10% of domestic, nondefense discretionary spending of \$193.9 billion (U.S. Office of Management and Budget 2003), discretionary grant programs provide an effective way for federal agencies to respond to the demands of private organized interests and local governments. Both the number of grants and their dollar value increased during the early 1990s, but fell after Republicans gained control of Congress in the 1994 elections. In 1998, a total of 58,651 grants were made for our seven policy areas with a current dollar value of \$11.3 billion.

Discretionary programs are valuable to both organized interests and legislators in ways that formula spending is not. Organized interests that are able to obtain discretionary grants can more effectively attract and retain members and patrons. In addition, groups receiving awards can reallocate funds from policy activities to institutional maintenance. Finally, legislators can design discretionary spending programs to allow organized interests a direct, quasi-official role in spending decisions (Stein and Bickers 1995). For legislators, the political return on discretionary grants occurs through organized interests. Most voters are not aware of the grants flowing to their district. Translating program awards into electoral advantage requires organized intermediaries to inform voters of their legislators’ efficacy and perhaps reward legislators with campaign contributions and other political support (Stein and Bickers 1995). The political return on formula programs is more direct because they put money directly in voters’ pockets.

In contrast, 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. Supply-side effects may be stronger where Congress directly deter-

mines allocations to recipients in legislation (Balla et al. 2002; Lee 2000), or under extraordinary political circumstances, such as during the height of Franklin Roosevelt's New Deal presidency (Wright 1974).

Data and Methods

To investigate the influence of organized interests on distributive federal spending, we employ an empirical model of the number of discretionary awards each year in each state for 1991 through 1998. Drawing on data from the Federal Assistance Awards Data System ("FAADS"; Bickers and Stein 1996, 2000; Stein and Bickers 1995), we investigate seven policy areas: agriculture, business and commerce, income security, employment and training, natural resources, environmental protection, and arts and culture. For each policy area, we develop corresponding state-level measures for organized interests, latent demand, and representation on congressional committees. We also include supply-side variables that apply across policy areas to measure swing states and partisan control of Congress. This approach allows us to isolate the effect of organized interests from other demand- and supply-side factors. Note also that this constitutes a fairly stiff test for uncovering organized interest effects, since these measures tend to be correlated with measures of latent demand as well as some supply-side measures such as committee representation. We next describe our dependent variable, independent and control variables, and empirical specification.

Dependent Variable: Discretionary Program Awards

Our dependent variables are drawn from the Stein and Bickers FAADS data and are structured to measure yearly discretionary awards in each state across our seven policy areas, as coded in the Catalogue of Federal Domestic Assistance (CFDA). We chose these categories because they reflect a diverse range of policy areas and correspond well to available measures for organized interests and latent demand. Following Stein and Bickers (1995) we exclude programs allocated at least partly by formulae and programs whose recipients include individuals or whose recipients include only governments, as indicated in the CFDA. This means we exclude redistributive programs such as Social Security (see Stein and Bickers 1995).

There are two approaches to measuring federal spending across jurisdictions. Some scholars measure spending in terms of dollars and so equate the political value of federal spending with economic value. However Stein and Bickers (1995) argue convincingly that the number of awards is a better indicator of political salience than dollars for programs targeted towards organized interests, largely because the marginal political value of additional dollars declines as the number of dollars increases, particularly for discretionary programs (see also Potoski and Talbert 2000). We do not intend to resolve whether awards or dollars

is the proper metric for the dependent variable for other studies; it depends on the particular focus of inquiry.

Another data issue concerns the handling of contingent liability programs. In the FAADS data, new and continuing contingent liability awards are not distinguished in the same manner as new and continuing awards for other programs (Stein and Bickers 1995). Similarly, the FAADS data do not consistently record the value of contingent liability awards. For example, in some cases the data record the value of an asset insured by the programs, while in other cases the data reflect federal expenditures to cover defaulted loans. This provides further reason to analyze the number of new and continuing awards rather than their dollar value. However, our key results do not hinge on whether we measure the dependent variable as dollars or awards.

Demand Measures

We measure organized interests using data from several different sources. We measure latent demand via state demographic and economic profiles, as discussed below.

TAX-EXEMPT ORGANIZATIONS. Virtually every farming organization, trade association, professional association, or citizen group, as well as traditional charities and social service providers, has the legal status of a corporation exempt from paying federal income taxes, regardless of the nature of the interests represented. The Internal Revenue Code contains specific subsections for different kinds of tax-exempt corporations, including charitable and religious organizations (26 U.S.C. § 501c3), social welfare organizations (26 U.S.C. § 501c4), labor and agricultural organizations (26 U.S.C. § 501c5), and business leagues (26 U.S.C. § 501c6). The National Center for Charitable Statistics at the Urban Institute has made available annual files obtained from the Internal Revenue Service that include the statutory subsection and activity codes for every tax-exempt corporation having at least \$25,000 in revenues for 1989 onward. These files include the applicable statutory subsection, as well as up to three activity codes for each organization identifying its substantive interests in more detail (National Center for Charitable Statistics 2003).

We use the number of tax-exempt organizations germane to each policy area per 1,000 residents as one measure of organized demand for federal grants. We use section 501c5 organizations having activity codes for “Farming and Related Activities” for our analysis of agriculture grants; section 501c6 “Business promotion (chamber of commerce, business league, etc.)” associations for business and commerce grants; section 501c3 organizations providing gifts and social services to individuals for income security and employment and training programs; tax-exempt organizations devoted to environmental protection and conservation for natural resource and environmental protection grants; and organizations devoted to arts and cultural activities for arts and culture grants. The latter two categories include organizations qualifying under various subsec-

tions of the tax code.² Note that a tax-exempt organization such as a farming organization or business promotion association has for-profit institutions for members and thus represents for-profit interests. Examples of 501c6 business promotion associations in Alabama include the Alabama Wholesale Distributors Association, the Montgomery Area Chamber of Commerce, and the Southeastern Carwash Association, Inc. Each tax-exempt organization is only counted once, in the state where it is incorporated. While this likely results in an undercount of the actual number of relevant organizations in a given state, we have no reason to believe the variation across states is systematically biased.

PRIVATE ESTABLISHMENTS. Our second measure of organized interests uses data from the Census Bureau's *County Business Patterns* on the number of private "establishments" in each state aggregated by Standard Industrial Classification (SIC) Code.³ An establishment is defined as "a single physical location at which business is conducted or services or industrial operations are performed" (U.S. Census Bureau 2002). Organizations with multiple locations are therefore counted multiple times. The data set includes only establishments with at least one full-time employee and excludes agricultural production, self-employed persons, and most government offices.

For several of our policy areas we include data on private establishments per 1,000 residents aggregated by two-digit SIC codes. For business and commerce, we include all private establishments except those in agriculture, forestry and fishing, mining, public utilities and transportation, and membership organizations. For natural resources and environmental protection, we include forestry, fishing, and mining establishments.⁴ In addition, we include the number of farms from the U.S. Department of Commerce (various) as a measure of private establishments in agriculture. Data on private establishments providing social services and amusement and recreational services are also available, but obtaining a good match to policy areas would require disaggregation beyond the two-digit SIC code level, and there would be a great deal of overlap between these measures and our data on tax-exempt social service or arts and cultural organizations.

² Specific activity codes include 230–249 for farming and related activities, 200 for business promotion, 560–573 for social services, 349–380 and 529 for environmental protection and conservation, and 59–120 for arts and culture (U.S. Department of the Treasury 1996a, 1996b). Visual inspection of the data suggested that records are incomplete for all tax-exempt organizations in CT in 1993 and 501c3 organizations in CA and HI in 1991–1995. Inquiries to the National Center for Charitable Statistics failed to clarify the issue. We therefore use values for the number of organizations based on linear interpolation for these states and years. Omitting these observations altogether reduces our sample size, but does not change the substance of our conclusions.

³ Establishments are classified using North American Industry Classification System (NAICS) codes after 1997. Because our dependent variable is measured for 1991 through 1998 and we use lagged values for all explanatory variables, we use data on establishments classified by SIC Code for 1990 through 1997.

⁴ SIC Codes are 1500-3999, 5000-8299, and 8400-8999 for business and commerce establishments and 0800-1499 for fishing, forestry, and mining.

LOCAL GOVERNMENT ORGANIZATIONS. We also include measures of local government organizations as an additional measure of organized interests. It is not clear on theoretical grounds how best to measure local government organizations. All states have counties, but their importance varies widely; some states have townships whereas others do not; and the use of special districts also varies widely. After some experimentation, we settled on the number of municipal governments plus the number of special districts that are directly relevant to each policy area.⁵ Data come from the 1987, 1992, and 1997 *Census of Governments* (U.S. Census Bureau) and were interpolated to fill in missing years.

LATENT DEMAND. We also include a number of variables to measure latent demand for discretionary grants. We include the percentage of the population living in metropolitan areas for agriculture, natural resources, and environmental protection; income per capita and the percentage change in income per capita for business and commerce, income security, and employment and training; and income per capita and the percentage of adults with college degrees for arts and culture. Data are from the U.S. Department of Commerce (various), and U.S. Census Bureau (various). We experimented with other measures such as per capita farm income for agriculture, unemployment and poverty rates for income security and employment and training, and population density for natural resources and environmental protection, but these did not improve the fit of our models or affect our results for organized interests.

Supply-Side Measures

Our analysis also includes variables chosen to measure the various supply-side effects hypothesized by other researchers. Each equation includes the z-score for the state's electoral margin in the last presidential election. Electoral margin is measured as the absolute value of .5 minus the proportion of major party votes cast for the Democratic candidate, so the swing state hypothesis predicts a significant, negative coefficient. We also include the proportion of each state's congressional delegation affiliated with the majority party in both the House and Senate, and the proportion of each state's delegation on relevant congressional committees for each policy area. If partisan effects and committee representation are important, then we should estimate significant, positive coefficients for these variables.

Different researchers have measured supply-side concepts in different ways, and there is no single approach that is obviously correct across all contexts. In

⁵ There are no special districts for agriculture or arts and culture. For business and commerce, we used industrial development and mortgage credit districts. For income support and employment and training, we used special welfare districts. For natural resources, we used the sum of irrigation, drainage and flood control, soil and water conservation, and other natural resources districts. For environmental protection we used sewerage, solid waste control, and water supply districts. We experimented with including special natural resources districts in the agriculture equation as well, but it made no difference.

the case of committee representation, for example, Anderson and Tollison (1991) use the cumulative months of seniority of committee members, Fleck (1999) uses the proportion of each state's delegation that is on a relevant committee, and Rundquist and Carsey (2002) and Carsey and Rundquist (1999a, 1999b, 2002) use a dummy variable for whether a state is represented by a Democratic or Republican member of a committee. We have experimented with different measures for each or the supply-side concepts of swing states, partisan connections, and committee representation, as well as different combinations of these concepts.⁶

Overall, we found no systematic pattern that leaves us willing to make strong claims about supply-side effects. In different permutations of our analysis we found that individual supply-side coefficients were sometimes significant, but they were sometimes significant in the "wrong" direction, and we discerned no overall pattern in the results. Just as important, the results we obtain for our demand-side variables were basically unchanged by any of our experiments with different measures and specifications for the supply side. We therefore include these as control variables and focus on our demand variables, particularly those measuring organized interests.

The Empirical Model

For each policy area, we estimate a negative binomial regression model of the number of discretionary grants allocated to each state in each year. Our models take the form $E[G_{i,t}] = G_{i,t-1}^{\alpha_1} \text{POP}_{i,t-1}^{\alpha_2} \exp(X_{i,t-1}\beta)$, where $E[\]$ denotes expectations, G is the number of grants awarded, POP is state population, X is a vector of independent and control variables that may affect the number of grants received relative to population, α_1 , α_2 and β are (vectors of) parameters to be estimated, and subscripts i and t denote states and years, respectively (see Cameron and Trivedi 1998; King 1989; Maddala 1983). While the number of awards in some policy areas is sufficiently large that we could use a linear regression model, we use an event-count model for all equations for the sake of comparability across policy areas. Some policy areas have a handful of cases where $G_{i,t-1}$ equals zero.

⁶In addition to the measures used by previous researchers, we also tried majority party and committee members per capita. As an example of how none of these measures are obviously appropriate for all circumstances, consider Carsey and Rundquist's dummy variable for committee representation. First, they assume that a given state receives the same number of dollars per capita regardless whether it has one representative on a House committee or a dozen. Second, because their dependent variable is dollars per capita, they assume that a member of Congress from California is able to secure more than 50 times as many dollars as his or her counterpart from Wyoming. We follow Fleck (1999) in measuring committee representation by the proportion of the state delegation on a given committee. One could allow for diminishing marginal effects by including a quadratic term and perhaps adjust for other factors, but we see no reason to believe that further adjustments would generate systematic, statistically significant results.

In these cases we recode $G_{i,t-1}$ as one, and we include a dummy variable coded one for these cases to allow the intercept to shift (Cameron and Trivedi 1998, 239–40).

All explanatory variables are lagged one year to account for the fact that decisions about the allocation of grants in fiscal year t are usually made in year $t - 1$ (Stein and Bickers 1995). In addition to the demand and supply-side variables discussed above, we include dummy variables for fixed year effects. These dummy variables capture changes over time that affect the total number of grants to all states, such as the change in majority control of the House of Representatives following the 1994 election.

It could be argued that states are not the optimal units of analysis, as many grant awards have local impact. Some previous studies have focused on the allocation of federal spending to congressional districts (Levitt and Snyder 1995; Bickers and Stein 1996, 2000; Stein and Bickers 1995), or counties (Carsey and Rundquist 2002). Still, we use states as our units of analysis for both practical and theoretical reasons. From a practical standpoint, our data on private establishments are only available by state. Our data on tax-exempt organizations include the address of the home office, but some organizations have branch offices elsewhere while others, such as the Iowa Soybean Association, have a single office but represent a statewide constituency. In order to use counties or congressional districts as units of analysis, we would need to know which of the many thousands of organizations underlying our data represent only local constituencies, and which represent statewide constituencies. On theoretical grounds, Lee and Oppenheimer (1999, 168–69) argue that Members of Congress often have incentives to work together to get funds for their entire state.

Finally, Lee and Oppenheimer (1999) test for the effect of the overrepresentation of small states in the Senate by using the ratio of national population to state population as an independent variable (see also Lee 2000). If we include Lee and Oppenheimer's variable in our model, its effects are negligible. This is likely because the correlation between their measure and the natural log of population is $-.89$. We therefore include only the latter variable.

Summary of Model Specification and Data

Table 1 summarizes the variables used to estimate the number of discretionary grants in each policy area. Summary statistics are not presented in order to conserve space, although means and standard deviations for our dependent variables are shown in the notes to Figure 1 below.⁷ The distributions of our dependent variables are highly skewed, with some extreme outliers at the upper ends. Close examination of the data reveals large year-to-year fluctuations in the number of grants awarded to the same state for the same program. Of course, these fluctu-

⁷ Summary statistics for all other variables are available on request from the authors.

TABLE 1
Summary of Model Specification

Policy Area(s)	Organized Interests	Latent Demand	Committees
Agriculture	501c5 agricultural organizations Farms Municipal governments	Metropolitan population	Agriculture
Business & Commerce	501c6 business associations Private, nonagricultural establishments Municipal governments + special districts	Income Pct. Change in income	Small business Commerce
Income Security; Employment & Training	501c3 social service organizations Municipal governments + special districts	Income Pct. Change in income	Education & Labor
Natural Resources	501c environmental organizations Forestry, fishing and mining establishments Municipal governments + special districts	Metropolitan population	Interior (House) Nat. resources (Senate) Commerce
Environment	“	Metropolitan population	Public works Commerce
Arts and Culture	501c arts and cultural organizations Municipal governments	Income College graduates	Interior subcommittee of Appropriations

All equations include the z-score of the electoral margin in the last presidential election, the proportion of the state delegation belonging to the majority party in the House of Representatives and the U.S. Senate, state size (population), and the lagged number of grant awards. Measures of demand and committee representation vary across policy areas as follows (all demand variables are measured relative to state population).

ations could reflect changes in demand or the punctuated nature of subsystem spending (Jones, Baumgartner, and True 1998), but they may also reflect factors such as changes in eligibility criteria, accounting rules that affect the year in which grants are recorded, and other idiosyncratic events.

We calculated correlation coefficients for pairs of our organized interest variables within the same policy area in order to check for multicollinearity. This proves to be an issue for agriculture, where each of the three correlations exceeds .67, and business and commerce, where both correlations involving 501c6 business promotion associations exceed .51. None of the other correlations between organized interest variables in a given policy area exceed .5.

Finally, we analyze arts and culture grants for the years 1991–1995 rather than 1991–1998. Following the 1994 elections, the Republican congressional leadership severely criticized the National Endowment for the Arts, and even held hearings on its possible elimination (Wuthnow 1999). As a result, there were literally no discretionary grants recorded for this category of the FAADS data during 1996, and only a handful in 1997 and 1998.

Empirical Analysis

Table 2 presents the results of our analysis of federal discretionary grants across seven policy areas. All equations were estimated using negative binomial regression with robust standard errors. The estimated overdispersion parameter (α) is significantly greater than zero at the 99% confidence level for every equation, indicating that a negative binomial model is appropriate (Long 1997, 237).

Reviewing and interpreting all demand- and supply-side coefficients across all policy areas is a daunting task and is probably not necessary since our focus is on whether organized interests significantly influence federal programs after controlling for latent demand and supply-side effects. The most notable feature of our results is that in all seven of our policy areas, at least one organized interest variable is statistically significant at the 95% confidence level in the expected (positive) direction. The coefficients for tax-exempt organizations are statistically significant and positive for all policy areas except business and commerce and natural resources, while private establishments is significant at the 90% confidence level or greater for both business and commerce and natural resources. Government organizations are significant at the 95% level for all areas except agriculture and arts and culture. While a few of our organized interest coefficients have the “wrong” (negative) sign, only farms per capita is significant at even the 90% confidence level. This is likely due to the multicollinearity noted above. If we omit 501c5 farming organizations from the agriculture equation, the coefficient on farms falls to .6 times its standard error.

Our results for organized interests are quite robust to changes in model specification. As discussed above, we experimented with many different measurement approaches and specifications for the supply-side and latent demand measures. We also experimented with different treatments of the lagged dependent variable,

TABLE 2

Negative Binomial Regression, Number of Discretionary Grants

	Agriculture	Business & Commerce	Income Security	Employment & Training
Tax-exempt Organizations _{t-1}	23.52** (3.58)	.13 (.06)	3.04** (2.60)	3.80** (2.68)
Private Establishments _{t-1}	-11.28* (1.67)	.05** (2.39)	—	—
Government Organizations _{t-1}	.11 (.18)	1.25** (2.11)	.47** (3.19)	.62** (3.42)
Income _{t-1}	—	-5.4e-5** (2.61)	-9.4e-6 (.93)	-2.0e-5* (1.85)
Other latent demand _{t-1}	-.006* (1.67)	-.028 (1.48)	-.017** (2.24)	-.008 (.93)
Presidential margin _{t-1}	-.028 (.80)	.017 (.64)	.010 (.63)	.012 (.71)
House majority Party _{t-1}	.102 (.70)	-.117 (.93)	.012 (.22)	.039 (.56)
Senate majority Party _{t-1}	-.254* (1.95)	.029 (.42)	.089** (2.27)	.090** (2.20)
House Committee 1 _{t-1}	.013 (.06)	-.027 (.18)	.083 (1.16)	-.003 (.03)
Senate Committee 1 _{t-1}	.066 (.46)	.000 (.01)	-.103* (1.92)	-.164** (2.46)
House Committee 2 _{t-1}	—	-.042 (.22)	—	—
Senate Committee 2 _{t-1}	—	.181 (1.38)	—	—
Ln(Population _{t-1})	.290** (3.57)	.333** (3.97)	.068** (2.26)	.066** (1.96)
Ln(Grants _{t-1})	.513** (4.71)	.605** (9.85)	.837** (2.26)	.864** (16.99)
Intercept shift for Grants _{t-1} = 0	-14.64** (13.05)	—	—	—
Fixed year effects	Yes	Yes	Yes	Yes
Constant	-.089 (.27)	-.611 (1.02)	.064 (.30)	-.058 (.27)
Alpha	.418** (7.01)	.185** (5.71)	.076** (7.91)	.083** (6.61)
Cases	400	400	400	400
Pseudo-R ²	.092	.114	.143	.173
Tax-exempt Organizations _{t-1}	2.52 (.84)	—	8.58** (4.18)	2.74** (3.75)
Private Establishments _{t-1}	.31* (1.84)	—	-.12 (1.21)	—
Government Organizations _{t-1}	.70** (2.65)	—	.75** (3.23)	-.08 (.62)
Income _{t-1}	—	—	—	-9.1e-6 (.86)

TABLE 2 *continued*

	Natural Resources	Environmental Protection	Arts & Culture
Other latent demand _{t-1}	-.010** (2.68)	.006** (2.78)	.010** (2.09)
Presidential margin _{t-1}	.049 (1.42)	.008 (.33)	.001 (.10)
House majority Party _{t-1}	-.056 (.43)	.122 (1.28)	-.097 (1.61)
Senate majority Party _{t-1}	.072 (.65)	.065 (.98)	-.34 (1.06)
House Committee 1 _{t-1}	-.578** (4.20)	.250 (1.62)	.170 (.72)
Senate Committee 1 _{t-1}	-.058 (.42)	.031 (.32)	-.004 (.06)
House Committee 2 _{t-1}	.935** (2.61)	.477** (2.43)	—
Senate Committee 2 _{t-1}	.197 (1.41)	.043 (.45)	—
Ln(Population _{t-1})	.256** (4.43)	.135** (3.62)	.184** (4.30)
Ln(Grants _{t-1})	.614** (1.92)	.625** (16.43)	.827** (2.92)
Intercept shift for Grants _{t-1} = 0	-.291 (.32)	-.964** (6.04)	—
Fixed-year effects	Yes	Yes	Yes
Constant	.493 (1.08)	-.524* (1.73)	-.844** (2.97)
Alpha	.329** (8.43)	.167** (8.71)	.011** (4.06)
Cases	400	400	250
Pseudo-R ²	.112	.132	.323

Figures in parentheses are z-scores calculated using robust standard errors. * $p < .10$; ** $p < .05$. See Table 1 for information on specific demand and committee measures used.

and even estimated models using the natural log of dollars per capita (excluding contingent liability awards) as our dependent variable. Obviously, our results were not identical to those shown here, but the pattern is clear and robust: organized interests influence the allocation of federal discretionary grants.

We also find that at least one latent demand coefficient is significant at the 90% confidence level or better in the expected direction for every policy area. Our results for organized interests indicate, however, that latent demand variables alone are not sufficient to capture the demand for federal discretionary grants.

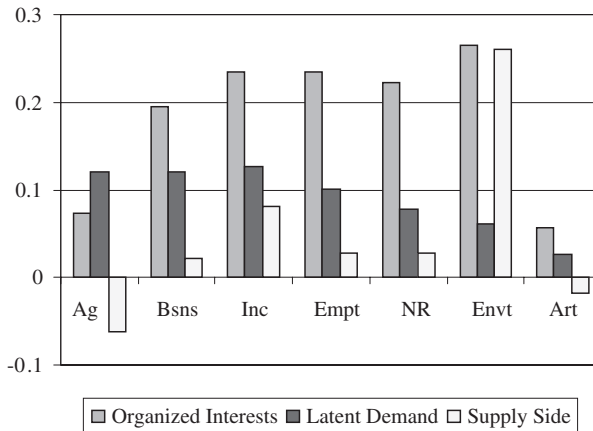
The results in Table 2 show little consistent evidence of supply-side effects. None of the coefficients for presidential swing states or House majority party are significant at the 90% confidence level. Senate majority party is significant and

positive for income security and employment and training grants, but significant and *negative* for agriculture. Our measures of congressional committees are statistically significant at the 95% confidence level and positive in only two out of twenty cases, while three coefficients for committee representation are statistically significant at the 90% level or greater in the “wrong” direction.

Our results for state size and the lagged dependent variable seem reasonable. All of the coefficients for the natural log of population and the natural log of grants in the previous year are positive and significant at $p < .05$. All of the coefficients for intercept shifts when lagged grants equals zero are negative, indicating that the predicted number of grants is lower following a year when no grants were received than following a year when at least one grant was received.

Figure 1 presents the joint standardized effects of our variables measuring organized interests, latent demand, and supply-side factors in a way that allows clear comparisons across categories of independent variables. To calculate the standardized effects, we first calculated the change in the number of predicted

FIGURE 1
Standardized Effects of Groups of Independent Variables,
by Policy Area



Standardized effects were calculated by first calculating the difference in the predicted number of grants that results from changing all of the variables in a group from one standard deviation above or below their mean values to one standard deviation on the other side of the means in the direction expected to result in more grants. This difference was then divided by the standard deviation of the number of grants for that policy area. The mean number of grants (standard deviation) is 78.1 (132.8) for agriculture, 1254.8 (2338.0) for business and commerce, 232.6 (173.9) for income security, 103.0 (91.0) for employment and training, 137.4 (173.5) for natural resources, 64.5 (69.3) for environmental protection, and 124.9 (214.4) for arts and culture.

grant awards associated with a change in each group of variables from one standard deviation on either side of the mean to the other in the direction expected to result in more grants. We then divided these differences by the standard deviation of the number of grants for each policy area. The mean and standard deviation of the number of grants in each policy area is listed in the notes to Figure 1. Note that many of the standard deviations are quite large, so that the standardized effects we show correspond to substantial numbers of grants relative to the mean values.

As Figure 1 shows, the joint effect of our organized interest variables exceeds that of our latent demand variables for every policy area except agriculture and exceeds the joint effect of all supply-side variables for every policy area except environmental protection. Indeed, for several policy areas, the standardized effects of our organized interest variables dwarf those of both latent demand and supply side factors. In addition, our organized interest coefficients are jointly significant at the 95% confidence level in every equation. Latent demand coefficients are jointly significant at the 95% level for business and commerce, natural resources and environmental protection, while environmental protection is the only policy area where supply-side coefficients are jointly significant at the 95% level and have the expected signs.

Other studies find supply-side effects in ways that are not necessarily inconsistent with our results. Bickers and Stein (1996) find that new small business awards in the first nine months of the 101st Congress appear to be targeted toward districts where the incumbent won a close race for an open seat in 1988, but do not find this effect for other program areas. Levitt and Snyder (1995) report evidence of partisan effects obtained using FAADS data, but the supply-side effects they report are stronger for formula programs than discretionary programs (1995, 969–70). Carsey and Rundquist (1999a, 1999b) study the relationship between military procurement contracts and representation on congressional defense committees. The result for their full sample of 1,300 cases is that one of four committee variables is statistically significant. When they split the sample, they find that results vary by time period. A later study based on 1,600 cases again finds that the evidence for committee effects is mixed and changes over time (Rundquist and Carsey 2002). Dahlberg and Johansson (2002) find swing district effects for Sweden by using a data set they characterize as “uniquely suitable” for studying the vote-purchasing behavior of incumbent governments.

Conclusion

Previous research on distributive federal spending has tended to paint a rather unflattering picture. Early iron-triangle studies consider both demand and supply effects, but assert that narrowly focused, “special” interests are able to obtain excessive amounts of funding. More recent studies place overwhelming emphasis on supply-side factors and argue that federal spending reflects the disproportional

tionate representation of political jurisdictions (Lee and Oppenheimer 1999), membership on key congressional committees (Carsey and Rundquist 1999a, 1999b, 2002; Rundquist and Carsey 2002), incumbents' electoral incentives (Dahlberg and Johannson 2002; Stein and Bickers 1995; Wright 1974), or partisan interests (Bickers and Stein 2000; Levitt and Snyder 1995). Yet, these studies typically omit any measures of organized interests, despite strong theoretical arguments for their importance in the allocation of distributive federal spending.

In this study, we include organized interests in analyses of federal discretionary grants and find that interest groups and private and public organizations influence discretionary federal spending even while controlling for latent demand and supply-side factors. These results are quite robust across different policy areas, model specifications, and measurement approaches. Note that the distinction we have drawn between the supply and demand sides is not the same as a distinction between "political" and "economic" variables (see Levitt and Snyder 1995; Wallis 1988). We argued above that organizations receiving grants may reward legislators by informing voters, making campaign contributions, and so on. Our results nonetheless suggest that the allocation of federal discretionary grants depends on the demands expressed by organized interests, and not just the self-serving manipulations of well-placed political actors.

Our results thus carry implications for normative evaluations of federal spending, along with suggestions for future empirical studies in this area. Politicians and bureaucrats do not ignore citizen preferences when allocating discretionary federal grants. Rather, citizen preferences influence federal spending both directly and through organized intermediaries. For future empirical research, our study suggests the importance of including organized interests in federal spending studies, but also highlights the difficulties in measuring the diverse population of organizational forms. Conceptual categories for different types of organizations do not translate cleanly into empirical measures because in practice organizations simultaneously perform several functions.

Finally, our inquiry has focused on an arena where the theoretical case for the importance of organized interests is relatively strong: federal discretionary grant programs. The importance of organized interests may be attenuated for other types of spending, and additional studies may be able to reconcile our meager supply-side results with the extant literature in this area. Future research on federal distributive spending should therefore investigate why different demand- and supply-side factors influence different types of federal spending, and why the importance of these factors appears to vary across political and institutional circumstances. Our primary aim in this paper has been to rehabilitate organized interests as important components of this research.

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