

## DONOR-DETERMINED INTERGOVERNMENTAL GRANTS STRUCTURE

By: [Dennis Patrick Leyden](#)

Leyden, D. P. "Donor Determined Intergovernmental Grants Structure," *Public Finance Quarterly*, July 1992, 20(3):321-337.

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### **Abstract:**

The lack of simple language to describe the structure of intergovernmental grant programs and a failure to recognize that such programs are chosen by legislators whose preferences differ from those of recipients has led to an inability to develop a theory of why intergovernmental grants exist and why grant programs take the forms that they do. By reducing the complexities of grant programs to a simple structure of rates, bases, and purposes, this article is able to provide a conceptual framework for viewing individual grant programs as components of a comprehensive intergovernmental grants structure chosen through a legislative process in which individual legislators have preferences that are distinct from those of their recipients. Administrative costs play an important role in keeping the resulting grants structure simple, and the existence of categorical grants is shown to depend on the existence of spillover effects, fiscal illusion, or political asymmetry.

### **Article:**

Much is understood about the nature of intergovernmental grants, especially concerning their effects on recipient behavior.<sup>1</sup> However, two observations suggest that this understanding is less than complete. First, the continuing presence of the flypaper-effect controversy suggests a need to reexamine the basic model that provides the foundation for studying the effects of intergovernmental grants.<sup>3</sup> Second, although grant programs are typically analyzed individually, grant policy is often discussed in more comprehensive terms. Witness, for example, the controversy over the transformation of the U.S. federal grant system during the 1980s (Conlon 1988).

To a large extent, the literature on intergovernmental grants has not addressed the issue of why grantor governments choose to distribute intergovernmental grants or why grant programs take the forms that they do.<sup>3</sup> In part, this lack of focus can be attributed to difficulties in developing a simple language for describing the sometimes byzantine structures of individual grant programs.<sup>4</sup> Beyond that, however, this lack of focus stems from limitations inherent in the typical model of intergovernmental grants. Decisions in these models are generally demand driven (for example, Fisher 1979). Where the grant structure is made endogenous, decisions continue to be made by the same pivotal recipient (for example, Slack 1980). As a result, the endogeneity of the grant structure is limited and fails to account for the fact that grant structures are chosen by legislators whose actions are driven by a separate (though connected) set of preferences (Wiseman 1989).

The purpose of this article is to suggest a general foundation for analyzing the determination of a government's overall grants structure. Two tasks are required to fulfill this purpose. First, the salient details of individual grant programs must be distilled from the myriad of details that characterize actual programs and fit into a comprehensive whole. This task is accomplished below by noting the parallels between tax structures and individual grant structures. Hence a government's grants structure can be described by a set of individual grant programs each of which is characterized by a rate structure, a base structure, and an intended purpose. Second, grants-structure choice must be based on legislative preferences that are distinct from those of recipients. This task is accomplished by characterizing a legislative decision-making process in which individual legislators seek to maximize the political support each receives from constituents. The notion of political support 'is

deliberately general and thus is intended to capture a variety of models ranging from simple voting models to those more complex. The result of these efforts is a decision-making process that in retrospect appears rather simple. The optimal grants structure is chosen by the donor government through the equating of marginal political support across all choice variables, that is, across all components of the grants structure.

The model itself is presented in three stages in the second section. In the first stage, the salient details of intergovernmental grants are described and the components of a comprehensive intergovernmental grants structure defined. The second stage examines the political benefits that accrue to the donor government as a result of providing intergovernmental grants. Finally, the third stage defines the donor government's problem and characterizes its solution. The third section turns to an examination of the role of spillover effects, fiscal illusion, and political asymmetry on an intergovernmental grants structure. Finally, the article concludes in the final section with a brief summary and suggestions for future research.

## A MODEL OF INTERGOVERNMENTAL GRANTS STRUCTURE DETERMINATION

The model below examines the determination of intergovernmental grants structure using a two-tiered federal governmental structure. The analytical foundations of this model are based on Hettich and Winer's (1988) model of the determination of tax structure and Inman's (1988) empirical analysis of U.S. intergovernmental grant spending levels.<sup>1</sup> Although neither article focuses on the structure of grants, Hettich and Winer's argument for the use of a systemic approach to fiscal decision making and Inman's explicit treatment of the political decision-making process are well put and are consequently adopted here.

## CHARACTERISTICS OF INTERGOVERNMENTAL GRANTS

Although specifics vary considerably in practice, intergovernmental grants have three basic characteristics. First, every intergovernmental grant has a purpose for which it is intended. This purpose may be general (for example, revenue sharing) or specific (for example, a computer system for traffic control). Let  $\Gamma_j$  represent the set of activities for which some grant  $j$  is intended, and let  $\gamma_j^i$  be the level of such activities for the  $i^{\text{th}}$  recipient government. Second, every grant is allocated on the basis of one or more criteria. Such criteria may be simple (for example, student population) or complicated (for example, aggregate assessed property value times the poverty rate divided by per capita income). Let the set of criteria used to allocate grant  $j$  be noted by the  $K_j \times 1$  vector  $X_j$ , and define  $x_j^i$  to be the values of these criteria for recipient government  $i$ . Finally, a grant is characterized by one or more parameters that translate the set of grant criteria into a level of funding  $G_j^i$ . Thus a typical grant for some activity  $j$  may be represented by the following equation:

$$G_j^i = r_j^i x_j^i \quad (1)$$

where  $r_j$  is a  $K_j \times 1$  vector of parameters that, in conjunction with the set of criterion values  $x_j^i$ , determine the size of the grant. In analogy to tax analysis,  $r_j$  can be considered to be the grant rate structure for the  $j^{\text{th}}$  grant program, and  $x_j^i$  can be considered to be that program's grant base for the  $i^{\text{th}}$  recipient government.

Letting  $J$  be the total number of intergovernmental grant programs, the set of grants going to the  $i^{\text{th}}$  recipient government can be described by the  $J \times 1$  vector  $G^i$ :

$$G^i = [G_1^i, G_2^i, \dots, G_J^i]' \quad (2)$$

Because each grant is a function of  $K_j$  bases, the total number of rates that the donor government must set is  $K = K_1 + K_2 + \dots + K_J$ . A donor government's grants structure is therefore characterized by the number of grant programs, the set of activities for which each program is designed, the number and types of bases to be used for each program, and the set of grant rates for each program. Thus the donor government's intergovernmental grants structure can be summarized by the set:

$$S = \{J, (\Gamma_j)_{j=1}^J, (K_j)_{j=1}^J, (X_j)_{j=1}^J, (r_j)_{j=1}^J\} \quad (3)$$

## POLITICAL BENEFITS

The decision-making structure within which  $S$  is determined is typically complex, involving at a minimum both an executive and a bicameral legislature. A full model of such a structure is beyond the scope of this article. However, because different decision-making arrangements may result in different outcomes,<sup>6</sup> it is important to be explicit about the structure employed.

I assume that decisions of the donor government are made by a unicameral legislature. Let each member of the legislature represent a single recipient jurisdiction, and assume that each representative seeks to maximize the probability of reelection. For simplicity, let the donor government fund its grant programs with a proportional tax levied on its constituents at some rate  $t$ , and assume that the tax base is exogenous. Finally, assume that the donor government must balance its budget.

The probability of reelection for each representative is assumed to be a positive, monotonic function of the political support  $p^i$  provided by the representative's constituents. Hence each representative seeks to maximize  $p^i$ . Political support may manifest itself in a variety of ways. Examples include active campaigning, volunteer work, cash contributions, and favorable voting. The value of a constituent's political support will generally depend on the form of the political support as well as on who provides it. Thus, for example, an hour of volunteer work by a local politician or interest group leader may result in greater political support than would a similar effort by an ordinary constituent.

The level of political support that each representative receives is determined by two conflicting forces. On one hand, intergovernmental grants increase the level of activities provided by recipient governments,<sup>7</sup> and thus increase the utilities of individual constituents. As a result, these individuals are willing, *ceteris paribus*, to provide a greater level of political support. On the other hand, individuals are made worse off by the taxes they pay to the donor government because of its effect on the amount of disposable income available to purchase goods and services in the private sector. As a result, they will, *ceteris paribus*, provide a lower level of political support. Thus, given a particular grants structure  $S_0$  and assuming that individuals do not perceive a connection between the level of recipient government activities and the donor taxes they pay,<sup>8</sup> the political support that some individual  $a$  residing in the  $i^{\text{th}}$  jurisdiction is willing to provide can be written as the additively separable function

$$P_a^i = b_a^i(\gamma) - c_a^i(t), \quad (4)$$

where  $\gamma$  is the  $(J \cdot N) \times 1$  vector of activity levels across all  $N$  jurisdictions, where  $b_a^i(\bullet)$  ( $i$ ) is assumed to be a positive, concave function of  $\gamma$ , and where  $c_a^i(\bullet)$  is assumed to be a positive, convex function of  $t$ . Note that  $b_a^i(\bullet)$  is a function of the vector  $\gamma$  and not just  $\gamma_a^i Yr.$ , thus allowing for the possibility of spillover effects across recipient jurisdictions. These spillover effects may be due to either direct consumption by the individual (for example, a suburbanite using roads in the central city) or more indirectly as might occur if an individual receives utility from knowing that the residents of another jurisdiction have government-supported health care programs.

Define the total political support  $p^i$  that the representative of the  $i^{\text{th}}$  jurisdiction receives as the aggregate political support across all individuals in jurisdiction  $i$ :

$$p^i = b^i(\gamma) - c^i(t) = \sum_a b_a^i(\gamma) - \sum_a c_a^i(t). \quad (5)$$

Note that  $p^i$  is defined given a *particular* grants structure. The ability to target grants and thus generate political support is limited by the number of grant programs as well as by the number of criteria used to allocate grants. Increases in either the number of grant programs or the number of allocation criteria will, in general, increase the ability to target grants to particular constituencies. Hence a more complex grants structure can be expected to result in a greater level of political support  $b^i$ , although, as discussed in the next section, increased complexity also results in increased costs. Thus equation (5) can be restated as

$$p^i = b^i(\gamma, J, K_1, K_2, \dots, K_J) - c^i(t), \quad (6)$$

where  $b^i$  is assumed to be a positive, strictly concave function of its arguments.

## THE DONOR GOVERNMENT'S PROBLEM

Individual members of the legislature are constrained in their ability to maximize  $p^i$  by the need to get majority support for any particular grants structure. However, as Inman (1988) points out, the outcome of legislative choice problems is in large part determined by the particular legislative decision-making structure in place.<sup>9</sup> A legislature dominated by a single political leader who represents a coalition of the whole (Inman's "cooperative legislature")<sup>10</sup> will behave quite differently from both a legislature dominated by a majority coalition (Inman's "majority-controlled legislature") and a legislature that approves any proposal put forth by a member (Inman's "fully decentralized regime").

Let the legislative decision-making structure be characterized by a dominant political party that has sufficient power to design and adopt a grants structure. Hence only the preferences of those legislators who are members (Alin dominant party will be considered in the design of the grants structure. Defining  $C$  to be the set of representatives in the majority party, the objective of the party will be to maximize a sum  $P$  of political benefits across all members of the party:

$$P = \sum_{i \in C} [b^i(y, J, K_1, K_2, \dots, K_J) - c^i(t)]. \quad (7)$$

As noted previously, the dominant party is constrained by the requirement that it balance the donor government's budget. Revenues are derived from the proportional tax already mentioned. Expenditures, however, although including the sum of all grants disbursed, also include costs associated with enacting and running the intergovernmental grants structure. Administrative costs reduce the ability of the grantor government to distribute all of each tax dollar in the form of grants. These administrative costs include the cost of legislative debate over the appropriate grants structure,<sup>11</sup> the cost of gathering information on the political preferences of individuals, the cost of measuring the various grant bases, and the cost of processing grants and enforcing restrictions. Although the determination of these costs is a complex process, they will, in general, rise with the complexity of the grants structure. Assume, then, that administrative costs are a positive, strictly convex function of the number of grant programs  $J$  as well as the number of criteria  $K_j$  used to disburse each grant. Thus the grantor's budget constraint can be written as

$$\sum_{i=1}^N \sum_{j=1}^N G_j^i - B - A(J, K_1, K_2, \dots, K_J) = 0, \quad (8)$$

where  $A(\bullet)$  represents administrative costs and  $B$  represents the aggregate tax base across all constituents and across all jurisdictions.

The donor government's problem, then, is to maximize the dominant political party's aggregate political benefit function  $P$  through the appropriate choice of a grants structure  $S$  and a tax rate  $t$ , and subject to the balanced budget constraint. The first-order conditions that characterize the solution to this problem consist of equation (8) along with  $K + J + 2$  other conditions listed below ( $\lambda$  is the Lagrangian multiplier):

$$\sum_{i \in C} \sum_{n=1}^N \frac{\partial b^i}{\partial y_j^n} \cdot \frac{\partial y_j^n}{\partial r_{jk}} - \lambda \sum_{n=1}^N x_{jk}^n = 0 \quad \begin{matrix} j = 1, 2, \dots, J \\ k = 1, 2, \dots, K_j \end{matrix} \quad (9)$$

$$\sum_{i \in C} \frac{\partial c^i}{\partial t} - \lambda T = 0 \quad (10)$$

$$\sum_{i \in C} \partial b^i / \partial J - \lambda (\partial A / \partial J) = 0 \quad (11)$$

$$\sum_{i \in C} \partial b^i / \partial K_j - \lambda (\partial A / \partial K_j) = 0 \quad j = 1, 2, \dots, J. \quad (12)$$

Conditions (9) and (10) characterize the optimal intergovernmental grant rate structure. Given a set of grants and grant bases, the marginal political benefit to the dominant political party of increasing grant spending by one dollar through an increase in the rate  $r_{jk}$  should be equated across all bases and all programs. Moreover, such marginal benefits should also be equated to the marginal political cost of raising a dollar through taxes. Note that the double sum in condition (9) reflects the existence of spillover effects. An increase in  $r_{jk}$  has two effects on members of the dominant party: directly through its effect on the grants going to the member's district and indirectly through spillover effects due to grants going to other districts. In the absence of spillovers, condition (9) would reduce to

$$\sum_{i \in C} \partial b^i / \partial r_{jk} \cdot \partial r_{jk} / \partial r_{jk} - \lambda \sum_{k=1}^N x_{jk}^i = 0 \quad \begin{matrix} j = 1, 2, \dots, J \\ k = 1, 2, \dots, K_j \end{matrix} \quad (13)$$

The first sum in equation (13) is less than the first sum in equation (9). Thus there will be less marginal benefit to raising any  $r_{jk}$  if there are no spillovers. Given equation (10), this suggests that, in the absence of spillovers, grant rates will generally be lower as will the overall level of grant funding.

The determination of the set of grant programs involves both choosing the number of grant programs,  $J$ , and assigning activities to the particular programs, that is, choosing the  $\Gamma_j$ . Assuming that the latter problem is solved for any given number of categories,<sup>12</sup> the condition necessary for the optimal choice of  $J$  can be seen by rewriting equations (10) and (11) as

$$\partial P / \partial J = \partial P / \partial T \cdot \partial A / \partial J, \quad (14)$$

where  $P$  is the aggregate political support of the dominant political party and  $T$  is the total tax revenue,  $tB$ . Condition (14) says that the optimal number of grant programs is one in which the marginal political benefit that the dominant political party gets from increasing the number of grant programs is equal to the marginal political cost of raising taxes sufficiently to fund the added administrative costs that result from the increased number of grant programs.

Likewise, assuming the assignment problem is solved,<sup>13</sup> conditions (10) and (12) can be rewritten to reveal a similar condition for the optimal base structure of each grant  $j$ :

$$\partial P / \partial K_j = \partial P / \partial T \cdot \partial A / \partial K_j, \quad (15)$$

The complexity of any intergovernmental grants structure is therefore the result of a tension between a desire for more complexity and a desire for less complexity. On one hand, the diversity of economic and political circumstances across districts and across constituents argues for greater complexity. Indeed, in the absence of administrative costs, conditions (11) and (12) reveal that the complexity of the grants structure is only limited by the condition that complexity not be pushed to the point where marginal political support becomes negative. On the other hand, administrative costs argue for a less complex structure so that a greater proportion of tax dollars make their way into grants.

### **SPILOVER EFFECTS, FISCAL ILLUSION, AND POLITICAL ASYMMETRY**

As a recent catalog of federal intergovernmental grants reveals (Advisory Commission on Intergovernmental Relations 1989a), categorical grants both in numbers and in dollars comprise the bulk of intergovernmental grant activity. When it is recognized that block grants also come with restrictions (though less stringent), it would appear that restricted grant giving is virtually ubiquitous. From the model above, it is clear that these

restrictions must exist because they allow the donor to maximize political support. Yet what makes such restrictions beneficial to the donor government?

Three possibilities suggest themselves: spillover effects, fiscal illusion, and political asymmetry. Spillover effects occur when the activity levels of one recipient government affect the constituents of another recipient government. Special interest groups often reflect the existence of spillover effects. Thus, for example, environmentalists get utility from knowing that Alaska wilderness is protected, regard-less of whether they ever visit that state. Fiscal illusion, on the other hand, can be defined as the overestimation of benefits received from intergovernmental grants or the underestimation of donor-government taxes.<sup>14</sup> Finally, political, asymmetry refers to an imbalance not in perceptions but in political influence. Essentially, political asymmetry exists if those who dominate the lower level of government have preferences that are different from those who dominate the higher level of government. In the context of the model above, political domination comes about through the willingness to provide political support. For the donor-government representative, this political support was defined as  $p^i$ . Hence political asymmetry implies that the recipient government has a  $p^i$  function that is different from that defined for the donor-government representative. Political asymmetry might occur if, for example, most constituents only participate in donor-government elections, leaving local decisions to a small minority of the set of total voters. As a result, the local government would be dominated by an essentially different population than that which elects the donor-government representative.

In the absence of these phenomena, the donor government's inter-governmental grants structure will, if it exists at all, be rather simple. The lack of spillover effects means that there is no political benefit to the dominant political party in providing grants to nonmember districts. Thus the intergovernmental grants structure will only provide grants to member districts. Moreover, without fiscal illusion or political asymmetry, there is no particular advantage in having categorical grants. Categorical grants are valuable because they allow the donor government to focus benefits on particular preferences of constituents. However, without fiscal illusion or political asymmetry, a single, unconstrained grant will result in the same output effects (that is, changes in the levels of  $\gamma_j^i$ ) as an optimal categorical grants structure of the same total value, that is,  $\partial P/\partial J$  equals zero for  $J$  greater than 1 [see equation (14)]. Hence, because added grants-structure complexity increases administrative costs and thereby reduces the pool of funds available, the donor government will prefer a single, unrestricted grant, that is, a grants structure such that  $J = 1$  and  $\Gamma$  equals the set of all activities. Thus the absence of spillover effects, fiscal illusion, and political asymmetry results in a simple intergovernmental grants structure in which a single, general-revenue sharing grant is provided to member districts. It should be noted, however, that such will be the case only if administrative costs are less than the tax revenues taken from nonmember districts. As the size of the dominant party's coalition increases, the likelihood that this condition will hold decreases, and certainly if the legislature is dominated by a coalition of the whole, the legislature would choose to eliminate the intergovernmental grants structure.

If spillovers exist, however, constituents in each member district will receive utility from the activities of other districts, including those that are nonmember districts. As a result, the general-revenue sharing grant structure described above will no longer be optimal for the donor government's dominant party. The structure will need to be modified in two ways. First, because spillovers will typically cross party lines, the optimal grants structure will now include grants to nonmember districts.<sup>15</sup> Second, although there is no political asymmetry, local decisions will not take into account the benefits that are exported to other districts. Hence there is a need for categorical grants to provide the proper stimulation for those activities that provide spillover effects. Thus the expected grants structure will be a mixture of grants designed to compensate for spillover effects and grants designed to redistribute wealth for purely political reasons. If the donor-government legislature is dominated by a coalition of the whole, the grants designed to compensate for spillover effects will continue to exist. However, as before, the grants designed to redistribute wealth for purely political reasons will not.

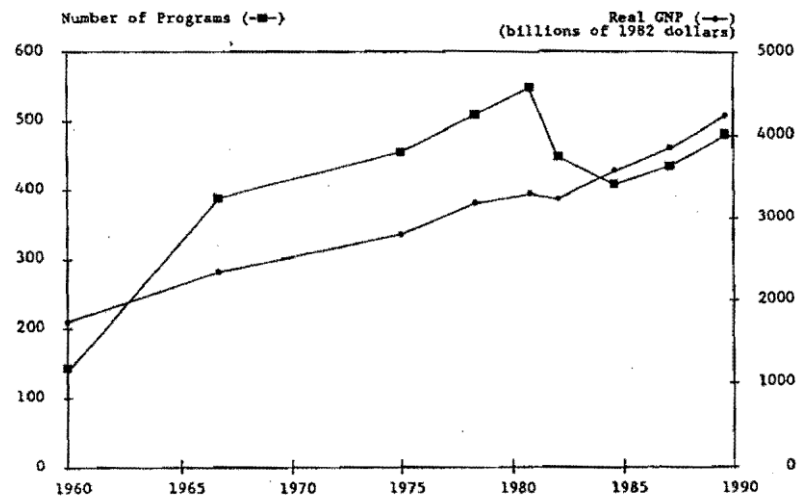
Much the same will occur if fiscal illusion is present. If constituents suffer from fiscal illusion with respect to the taxes they pay or with respect to the benefits of intergovernmental grants generally, the effect is likely to be

limited to an increase in intergovernmental grants over what they would be in the absence of the illusion. However, because there are no spillover effects or political asymmetry, there would be no other change in the single, general-revenue sharing nature of the intergovernmental grants structure. However, if the fiscal illusion varies among government activities, a single, general-revenue sharing grants structure will no longer be optimal. Consider, for example, a case in which constituents suffer from fiscal illusion with respect to only one of several activities. In that case, the donor government will receive greater political benefits from grants that fund that activity. Hence the donor government can benefit from categorical grants. As with spillovers, a donor government dominated by a coalition of the whole will continue to enact grants that come about as a result of fiscal illusion. If that illusion is general, the result will be a general-revenue sharing structure. If that illusion differs from activity to activity, a system of categorical grants will exist.

Finally, the presence of political asymmetry provides another rationale for the existence of categorical grants. The argument is much the same as exists for differential fiscal illusion. If there is political asymmetry, the group that dominates the recipient government's decision-making process will be different from that which provides support to the donor-government representative. Hence the latter group will not be satisfied by the decisions of their recipient government and will therefore provide political support for an intergovernmental grants structure that changes the mix of recipient-government activities. But such differential manipulation requires the use of categorical grants so that the recipient government has less discretion. This structure will continue to exist if the donor government's legislature is dominated by a coalition of the whole.<sup>16</sup>

## CONCLUSIONS

This article has provided a conceptual framework for examining the determination of intergovernmental grants structure. Key to its perspective is (a) the ability to reduce individual grant structures to a characterization in terms of rates, bases, and purposes; (b) the under-lying assumption that grant programs must not be analyzed individually but rather as members of a comprehensive, overall grants structure; (c) that the grantor government determines structure based on preferences separate from those of recipients; and (d) that important to the determination of the relatively simple structures observed is the presence of administrative costs.



**Figure 1. Federal Grants-in-Aid to State and Local Governments (for selected years)**

SOURCE: Council of Economic Advisors (1990), Advisory Commission on Intergovernmental Relations (1989a, 1989b).

The traditional motivation for the existence of intergovernmental grants lies in correcting for spillovers and inequities (Fisher 1988).<sup>17</sup> However, more recent work in the field of public choice has generally emphasized the importance of political self-interest and rent seeking. The model above describes how those two approaches can be reconciled. Spillovers, which include equity concerns, are felt by constituents in the various recipient jurisdictions. Politicians as self-serving agents place no intrinsic value on spillovers per se. However, to the

extent that constituents provide political support to their donor-government representative and to the extent that the representative has an effect on legislative decision making, spillovers will be embodied in the adopted intergovernmental grants structure. A legislature dominated by a majority party will incorporate spillover effects only to the extent that they affect the constituents of majority-party members. The preferences of constituents represented by members of the legislature who are not members of the dominant party are not taken into account. Only if the legislature is dominated by a coalition of the whole will all constituent preferences be taken into account. Categorical grants exist to distort the levels of particular recipient-government activities to levels that they otherwise would not attain under more general, unrestricted grants. Political support for bringing about this distortion may be due to spillover effects, fiscal illusion, or political asymmetry.

Empirical work that would both test the validity of the model above as well as provide better information for public policy debates (on such issues as the desirability of restricting political campaign contributions) would be useful. However, such work is hampered by the difficulty of collecting data on grants structure. What empirical evidence exists (see Figure 1) reveals a general growth over time in the number of federal grants to states and localities. However, the character of that growth and its causes remain to be investigated.

## NOTES

1. Fisher (1988) summarizes the basic results nicely. For an example of current efforts to expand knowledge of the effects of particular grant structures, see Singh and Thomas (1989).
2. The flypaper literature is by now a huge one. Recent contributions to that literature include Megdal (1987), Moffitt (1984), and Zampelli (1986).
3. A partial exception to this observation can be found in Schwajlie (1987, 1989a, 1989b) where the effects of U.S. federal government grants on public sector size are examined. Though not focused on the determinants of grants structure, the underlying theoretical model does include an independent, utility-maximizing grantor government in which aggregate federal spending (net of grants), recipient expenditures, and personal, per capita disposable income enter as arguments.
4. The wealth of detail that must be sifted through can be daunting. Munley (1990) provides a successful example of efforts to provide a comprehensive description of the workings of state grants for elementary and secondary education.
5. Hettich and Winer (1988) has been extended in other ways as well. See, for example, Kiesling (1990), who argues that tax structures may be dependent on the pattern of governmental expenditures.
6. Buchanan and Flowers (1987) provide an introduction to the importance of decision-making structures by contrasting the chokes made by three individuals under different majority-rule voting arrangements.
7. The degree to which the  $j$ th grant program affects recipient-government behavior will depend on both the grant program's rate structure  $r_j$  as well as the program's grant base  $X_j$ . See Fisher (1988).
8. Hettich and Winer (1988) argue that although these decisions are formally connected by the donor government's budget constraint, "the separation of taxes and expenditures is an important characteristic of modern fiscal systems" (p. 703). Citrin (1979), in his examination of the motivations for the passage of California's Proposition 13, provides empirical evidence of this dichotomy in the minds of voters.
9. In the context of game theory, a legislative decision-making structure can be thought of as an equilibrium (or solution) concept employed by the legislature that maps member strategies and payoff functions into an equilibrium. See Rasmussen (1989).
10. For an interesting example of empirical work implicitly based on the assumption of a cooperative legislature, see Wright (1974). Wright argues that the distribution of federal spending across states in the 1930s was based on a desire to maximize the electoral votes for Franklin Roosevelt.
11. Gordon (1975) emphasizes these costs in his study of the determinants of inflation.
12. The assignment problem can be thought of as being guided by the desire to minimize the loss of political support that comes from not having the ideal number of grants associated with zero administrative costs. Hettich and Winer (1988) discuss this problem in the context of tax rate brackets in their appendix. In brief, a solution can be found by minimizing the loss-of-support variance within each category.
13. The assignment problem here takes on a more mechanical flavor. Given a grant program, the problem is one of choosing some minimum set of bases that will discriminate among recipient governments in a politically



optimal manner. If stimulating an activity is desired to correct for spillover effects, the bases should be correlated with the level of desired stimulation.

14. There is no single definition of fiscal illusion. See Fisher (1982), Logan (1986), and Mueller (1989) for critiques of the various characterizations. For examples of empirical studies that investigate the existence of fiscal illusion, see Winer (1983) and GIOSSM813 (1990).

15. This is essentially a multiperson prisoner's dilemma game in which the categorical grants allow the player to coordinate their action. Take, for example, a three-person prisoner's dilemma in which two of the prisoners are friends and the third a stranger. If the two friends wish to form a conspiracy to beat the game, it may pay for them to include the stranger out of self-interest.

16. As noted by a referee, Schwallie's (1987, 1989a, 1989b) argument that donor governments tend to discount the value of recipient-government expenditures not funded out of grants provided by the donor government is similar to the notion of political asymmetry developed in this article. For Schwallie, intergovernmental grants exist whenever the donor government is dissatisfied with either the amount or the mix of recipient-government expenditures. Though not concerned with the form of these grants, his parametric treatment allows him to quantify the degree of discounting and its effect of public sector size.

17. Another commonly cited reason is to exploit production efficiencies that exist at the recipient-government level. Though important, this issue was not explored in this article.

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