

## **A political theory of intergovernmental grants\***

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Accepted 10 June 1992

**Abstract.** This paper formulates a political theory of intergovernmental grants. A model of vote-maximizing federal politicians is developed. Grants are assumed to buy the support of state voters and the ‘political capital or resources’ of state politicians and interest groups which can be used to further increase the support of state voters for the federal politician. The model is tested for 49 states. Similarity of party affiliation between federal and state politicians and the size of the Democrat majority in the state legislature increases the per capita dollar amount of grants made to a state. Likewise, increases in both the size of the state bureaucracy and union membership lead to greater grants for a state. Over time, the importance of interest groups (bureaucracy and unions) has increased relative to political groups (state politicians).

### **1. Introduction**

The distribution of federal government grants among states might be explained by equity and/or efficiency criteria or by political expediency. Much of the research on the subject has concentrated on equity and efficiency; a government committed to maximizing a nationwide social welfare function allocates grants among the states to correct for interjurisdictional externalities or to provide for states that are especially in need.<sup>1</sup> This paper is an attempt to explain the distribution of grants by the self-interest of the grant givers. Decisions by the federal government to fund grants involve either increases in own-source taxation, reductions in own-purpose outlays, or both. Such actions involve direct costs to the federal grant-giver in the form of lost votes but no direct, or obvious indirect, benefits. If grants are made by (Downsian) vote-maximizing politicians, then the logical question becomes: What is the benefit received by the donor government? Grants seem to have “. . . little political payoff to the donor government” (Hartle, 1976: 96).

\* I thank Cliff Walsh, Ed Olsen, Dan Usher, Dennis Leyden, Peter Kenyon, and an anonymous referee whose comments improved this paper. I am responsible for any remaining errors or omissions. Financial support from a University of Western Australia Special Research Grant is gratefully acknowledged. Part of the work on this paper was undertaken while the author was a Visiting Research Fellow at the Centre for Research on Federal Financial Relations, Australian National University.

It is widely accepted that federal politicians allocate own-purpose expenditures for the purpose of enhancing their reelection chances.<sup>2</sup> This activity is commonly observed in the form of “pork-barrel” legislation. If federal politicians manipulate own-purpose expenditures for political gain, it seems consistent to assume that grants are allocated to the same end.<sup>3</sup> This paper posits that grants buy the support of state voters and the ‘political capital or resources’ of the state politicians and interest groups which can be invested in efforts to further increase the support of state voters for the federal politician.

This paper develops a positive theory of the distribution of grants. The model presented assumes a political expediency explanation for grants. The model is estimated using four years of cross-sectional data for forty-nine states. Results of the study support the hypothesis.

## 2. A model of federal grants to state and local governments

The federal politician is assumed to be a vote maximizer.<sup>4</sup> The politician uses his control over federal expenditures – federally provided pure public goods (E) and grants to the N state governments ( $G_i$ , for  $i = 1$  to N) – to influence the electoral choices made by voters. Voters, in making their decision on how to vote in federal elections, are assumed to respond positively to: (1) increased own-purpose expenditures on public goods by the federal government; (2) increased state expenditures (or reduced state taxation) perceived to be funded by federal grants; and (3) the expenditure of political capital purchased from state politicians and state interest groups to influence voting outcomes. The federal politician uses grants to purchase political capital – the influence of politically powerful state politicians and interest groups – to be used to influence the voting decisions of state residents.

Politicians are constrained in achieving their objective by a balanced-budget condition. The federal politician’s preferences are assumed to be defined by a Stone-Geary function with E and the  $G_i$ s as arguments. The politician’s problem is to select E and the  $G_i$ s to

$$\text{Maximize } V = \alpha \log(E - s_1) + \sum_{i=1}^N (a + bX_i) \log(G_i - s_2) \quad (1)$$

subject to

$$E + \sum_{i=1}^N G_i = T \quad (2)$$

where  $\alpha + \sum(a + bX_i) = 1$  and T equals total federal government revenues.  $s_1$  and  $s_2$  are interpreted as the subsistence quantities of the two goods. They can be defined as the minimum government expenditures necessary to maintain society as a viable cooperative.  $s_2$  is assumed to be constant across states.

$X_i$  is a matrix of political characteristics measuring the amount and effectiveness of political capital state politicians and interest groups have to sell. These variables measure the extent to which state political agents can successfully influence voting decisions of state residents. Other things equal, grants go to those states with political agents with the most – and most valuable – political capital to sell.<sup>5</sup>

Maximizing (1) with respect to  $E$  and  $G_i$  and solving the first-order conditions for  $G_i$  yields a structural equation indicating how  $G_i$  is determined.

$$G_i = s_2 + (a + bX_i)(T - s_1 - Ns_2) \quad (3)$$

For any one year,  $T$ ,  $s_1$  and  $s_2$  are constants and, because  $s_1$  and  $s_2$  are subsistence levels and assumed to be small,  $(T - s_1 - Ns_2) = Z$  will be a constant greater than zero. Thus, equaton (3) is rewritten as

$$G_i = A + BX_i \quad (4)$$

where  $A$  equals  $(s_2 + aZ)$  and  $B$  equals  $bZ$ .

### 3. Implementing the model

If the distribution of grants is designed to further the political goals of the grantor politician, then the component variables in  $X_i$  reflect the extent and effectiveness of the political capital state politicians and interest groups have to trade. Politicians seek to distribute grants to achieve the maximum political return possible.

The dependent variable, GRANTS, is defined as total real federal grants to state and local governments per capita.<sup>6</sup>

Six political variables are included in  $X_i$ . Two measure the party affiliation and popularity of state politicians affiliated with the House of Representatives majority party (the House of Representatives majority was Democrat in all years covered by the data set, 1974, 1977, 1980, and 1983). Inclusion of these variables assumes that, *ceteris paribus*: (1) a state politician's or state political party's ability to deliver votes is greater the greater is that individual's or party's popularity; and (2) this ability to deliver votes is of greater value to the federal politician if all are of the same party.<sup>7</sup> The first variable, DGOVMAJ (expected sign +), is defined as the percentage of total votes cast for a Democrat governor in the last gubernatorial election. The size of the majority is assumed to reflect the politician's influence on state voters. The second, DLEGMJ (+), is defined as the percentage of seats held by the Democrats in the state house of representatives.<sup>8</sup>

The two interest group variables are proxies for the political capital interest groups can use to trade for federal grants. The larger and more well-organized an interest group, the more political capital at its command.<sup>9</sup> The interest group variables are BUREAU (+), defined as state and local government employment per capita, and UNION (+), defined as union membership per capita.<sup>10</sup>

Two variables are included to measure the cost to federal politicians of trading for a state's political capital. This is measured by the size of the state, POP (?), defined as the state's population (in thousands), and POPSQ (?), POP squared. While no prior assumptions are made about the signs of POP and POPSQ, it seems reasonable to assume that the cost of political capital is likely to be quadratic in POP. For smaller states, federal politicians are able to offer a higher price for political capital. Other things equal, political benefits from a marginal dollar of increased grants to a small state are greater than a marginal dollar of increased grants to a large state since the benefits are concentrated on a smaller number of beneficiaries (the per capita impact is greater). Sizable increases in grants per capita to a small state do not represent a sizable increase in total outlays since the number of beneficiaries is small. The resulting increased taxes imposed on residents of other states is small since the cost is spread across all taxpayers. This advantage is, however, offset by the fact that the smaller is a state, the fewer representatives in Congress to press its case and the less political capital it has to trade.

Finally, INCOME (-), a measure of real per capita income, is included. In practice, the distribution of grants under many major programs is determined by formulae or benefit-setting actions taken by the recipient government. If politicians are motivated by issues of equity and/or efficiency in their distribution of grants, then the determination of the grant distribution formulae and driving variables should have been chosen with these issues in mind. Two common, and typically important, variables in such formulae are population and per capita income.<sup>11</sup> INCOME is included to control for the effects of formula driven grant programs. The expected sign assumes that the distribution formulae are designed to achieve equity and/or efficiency goals.

#### **4. Empirical results**

The model is estimated using cross-sectional data for 49 of the 50 states of the United States – Nebraska is excluded because its state representatives are elected without party affiliation. Data for four years – 1974, 1977, 1980, and 1983 – are used. All data are drawn from U.S. Bureau of the Census (selected years). The empirical results reported in Tables 1 are for equation (4) estimated independently for each of the four years.<sup>12</sup>

Table 1. Regression results

Variable	Estimated coefficients			
	1974	1977	1980	1983
DGOVMAJ	-0.679 (1.13)	-0.443 (0.60)	-0.391 (0.77)	0.113 (0.23)
DLEGMAJ	5.084* (4.28)	3.042* (2.58)	1.835* (2.30)	0.741 (1.02)
BUREAU	122.460* (4.39)	65.182** (1.92)	130.990* (5.41)	108.180* (5.88)
UNION	-0.365 (0.06)	15.455* (2.19)	19.841* (3.38)	13.557* (2.71)
POP	-0.036* (2.77)	-0.050* (3.70)	-0.029* (2.96)	-0.018* (2.31)
POPSQ	0.000002* (2.42)	0.000002* (3.02)	0.000001* (2.42)	0.000001** (1.77)
INCOME	0.035* (2.27)	0.036* (2.22)	-0.011 (0.78)	0.007 (0.70)
CONSTANT	-771.310* (3.10)	-374.550 (1.37)	-364.150* (2.04)	-393.850* (2.96)
Adj R <sup>2</sup>	0.56	0.51	0.61	0.65
S.E.E.	111.960	123.000	99.368	81.871
F-stat.	9.743	8.200	11.895	13.833

Notes. t-statistic in parentheses.

\* Significant at the 5 percent level (two-tailed test).

\*\* Significant at the 10 percent level (two-tailed test).

Of the six independent variables, only the coefficients of the Governor's majority variable, DGOVMAJ, are insignificant for all four years. As well, the coefficients of DGOVMAJ are negative, opposite that hypothesized, in three of the four years. The insignificance of DGOVMAJ might be due to constraints on a Governor's tenure. In many states the Governor is limited to two consecutive terms of office.<sup>13</sup> A party's continuous control of the governorship is also less probable than its continuous control of the legislature.<sup>14</sup> Optimizing federal politicians would tailor grant distributions to the characteristics of the more stable state legislatures rather than to those of the Governors.

This assumption is supported by the positive and significant coefficients for the legislative majority variable, DLEGMAJ, in the first three years. Each percentage point increase in a state legislature's Democrat majority is worth between \$5.08 and \$0.75 per capita in additional grants to that state.

Of the two interest group variables, the bureaucracy variable, BUREAU, has the greatest impact on grants received. The size of a state's bureaucracy appears to be a primary source of political capital. Grants to a state increase by between \$65 and \$131 per capita for every percentage point increase in

BUREAU. Unions, though having a significant impact on the distribution of grants, appear to be a much less important source of political capital. A percentage point increase in UNION adds only between \$0 and \$20 per capita to a state's grant take. The relative weakness of union influence might reflect the more heterogeneous nature of the unions, and their goals, relative to the groups represented by BUREAU.

Interestingly, the coefficient for DLEGMAJ declined steadily over the period studied, while the coefficients of BUREAU and UNION were steady or increased. It has been argued that over the last few decades the role of political parties has eroded and that of interest groups increased (see, for example, Gibson, Cotter and Bibby, 1985; Orren, 1982; and Schlesinger, 1985). This is particularly true in regard to campaign financing. Between 1975–76 and 1981–82, total campaign receipts by House of Representatives candidates increased from \$65.7 million to \$213.2 million. Receipts from party committees barely increased over this period, \$5.1 million to \$6.1 million. Non-party committee (political action committees) contributions, on the other hand, increased by 400 percent, from \$14.7 million to \$61.1 million.

The reported pattern for the coefficients for DLEGMAJ, BUREAU, and UNION is consistent with this hypothesis. As parties have become less important and politicians have become more independent actors, the value of the political capital of party agents has diminished. The political capital of interest groups, on the other hand, has increased in relative value.

One last point to note, the coefficients for BUREAU and UNION were largest in 1980, an election year.

Finally, the results suggest that the political advantages to a state from being small more than outweigh the disadvantages of a state's lack of representation in Congress. Grants per capita declined as the size of a state increased until a state's population equaled approximately 10 million.

Contrary to expectations, the coefficients of INCOME are positive and significant in two (1974 and 1977) of the four years; those states with higher per capita income received higher grants per capita. In the other two years, the coefficients of INCOME were insignificant. Grants per capita increased approximately \$0.03 with every dollar increase in income per capita. This would appear to contradict most, if not all, equity arguments for federal grants.

An explanation for the positive coefficients on INCOME is found in the distribution formulae for AFDC and Medicaid grants. Under these formulae, even though high-income states are reimbursed for a smaller percentage of AFDC and Medicaid payments than low-income states, no cap is placed on a state's reimbursable payments to recipients and no cap is placed on reimbursements to a state. Thus, a state reimbursed at the minimum rate of 50 percent receives more per capita than a state reimbursed at the 75 percent rate if the former state's payments to recipient households are more than 50 percent

higher than the latter state's, *ceteris paribus*. High-income states such as California and New York do make substantially higher payments than do low-income states such as Alabama and Mississippi.<sup>15</sup> The grant formulae benefit states with strong preferences for greater intrastate distributional equity.

The reported results are, however, consistent with an assumption that political influence is positively correlated with income. The reported results then reflect the greater influence high-income states exerted on the design of grant distribution formulae.

## 5. Conclusion

This paper considers a political expediency explanation for the distribution of federal grants to the states. Federal politicians are assumed to be self-interested vote maximizers and distribute grants to achieve this goal. A model of vote-maximizing federal politicians is developed and tested empirically. The model performs well in explaining the distribution of grants across states. Grants are greater to states whose officials and/or interest groups have significant political capital. Similarity of party affiliation between federal and state politicians and the size of the Democrat majority in the state legislature increases grants made to a state. Likewise, increases in both the size of the state bureaucracy and union membership both lead to greater federal grants for a state. Contrary to expectations, states with higher income per capita received higher grants per capita. This result would seem more consistent with the political expediency hypothesis than an equity/efficiency hypothesis. Finally, over time, the importance of interest groups (bureaucracy and unions) has increased relative to political groups (state politicians).

## Notes

1. See for example, Break (1980), Gramlich (1977), and Oates (1972). Ladd (1990) and Yinger and Ladd (1989) examine the determinants of state aid to central cities. Their models are built on the premise of equity/efficiency as the principal motivating criterion for grants. One exception, Breton and Scott (1978), suggested that the 'revenue-rich' federal government trades with the 'revenue-short' state governments in a 'reassignment' of expenditure functions. Grants represent the payoff to the states for relinquishing control of expenditure functions.
2. Wright (1974), for example, argues that the distribution of federal spending among the states during the New Deal years can be explained by the assumption that the Roosevelt administration was attempting to maximize expected electoral votes.
3. This is not to deny that federal politicians are also motivated by equity/efficiency considerations in determining the distribution of both own-purpose expenditures and grants. Actions of the politicians are likely to be determined by many different factors. The intent of this paper is to focus on only one possible determining factor, political expediency.

4. The treatment of the federal government as a monolithic entity is obviously a gross abstraction from reality. This approach has, however, two arguments in its favor. The first is one of practicality; modeling a multi-branched government with its many competing interests would be extremely difficult, if not impossible. The author is unaware of any such model.

Second, while recognizing that even a unitary state is comprised of individuals with competing agenda, it is clear that the need to form a ruling coalition forces modification of these agenda. While the process of reaching consensus on the distribution of resources may involve considerable negotiations, the coalition eventually acts as one to advance, to varying degrees, the interest of all members of the coalition. One obvious factor in determining the makeup of a ruling coalition is party affiliation.

5. As previously noted, in some circumstances, voters may perceive that some state expenditures are funded by federal grants and the federal politician may directly benefit through a higher expected vote. In such a case, own-purpose expenditures and this component of grants are essentially identical. The parameter  $a$  would then be written as  $a^* + \alpha$ .
6. Total grants – formula driven, matching, as well as discretionary – was chosen as the dependent variable rather than some subset for consistency in logic. It is inconsistent to assume that vote-maximizing federal politicians would fail to make use of a major component of their budget. Medicaid, AFDC, and highway grants, the major programs with grants determined by formula or benefit-setting actions accounted for between 50 and 65 percent of total grants during the period considered. Rather it is consistent to recognize that the determination of formulae is endogenous to the political system. Formulae are set by politicians not by apolitical, benevolent outsiders and as such political considerations may influence the formulas' determination.
7. Votes a Republican state legislator can deliver will be of little, though not necessarily zero or negative, value to a Democratic Congressman. The payoff to the Democratic Congressman in this situation may, more likely, take the form of lack of vigorous opposition by the Republican state legislator.
8. The impact of the president on the distribution of grants is assumed to be minimal and is ignored.
9. We assume that an interest group's influence is positively correlated with its size. This, obviously, ignores the fact that large groups face higher policing costs. The choice of interest groups is limited by available data.
10. The characterization of the relationship between GRANTS and BUREAU assumes that grants are driven by rent-seeking behavior; the bureaucracy demands grants in return for their political favors. Causation runs from BUREAU to GRANTS and questions of need are essentially irrelevant. Alternatively, it could be assumed that grants are need driven; those states with greater need receive more grants. The larger need and the grants to meet that need require a larger bureaucracy to service the need and administer the grants. This implies a causation from need to GRANTS to BUREAU. To focus on the former characterization, BUREAU is lagged one period.
11. Per capita income is especially important in the distribution of Medicaid and AFDC grants, the two largest grant programs.
12. A concern was whether the coefficients of the model were stable across time. To test for coefficient stability, two preliminary regressions were run. In the first, coefficients were unrestricted across the four years. The data are grouped and the following equation estimated:

$$G_{ik} = A + X_{ik}B_k + \epsilon_{ik} \quad (1)$$

for  $i = 1$  to 49 and  $k = 74, 77, 80,$  or  $83$ . In the second, coefficients were restricted to being equal across the years. The following equation was estimated:



$$G_{ik} = A + X_{ik}B + \epsilon_{ik} \quad (2)$$

An F test of the restrictions was performed. The null hypothesis ( $H_0: B_{74} = B_{77} = B_{80} = B_{83}$ ) was rejected at the 99 percent level (F-statistic (21, 167) = 3.72).

13. As of 1984, four states limited a person to one consecutive term as Governor, twenty-four states limited a person to two consecutive terms as Governor (of which three set an absolute limit of two terms), and twenty-two states placed no limit on a Governor's term in office.
14. In only one state, Mississippi, did one party control the governorship in every year during the period 1960–86. In twenty-seven states, the governorship was held by one party for 65 percent of the time or less. By comparison, in thirty-seven states, one party held the majority in the lower house of the state legislature for 70 percent or more of the period 1960–86.
15. In 1980, for example, the average monthly AFDC payment per family was \$399 and \$371 in California and New York, respectively, and \$110 and \$88 in Alabama and Mississippi, respectively.

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