

# *The influence of special district governments on public spending and debt*

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Growth in special district governments is examined as a reason behind public sector expansion in the United States. A theoretical model is developed of the optimal mix of government suppliers which predicts how special district governments affect the overall provision of government policies. The hypothesis that expansion of special district governments leads to expansion of the public sector is empirically examined over two time periods.

## I. INTRODUCTION

There is a considerable literature on the determinants of public sector expansion.<sup>1</sup> This paper examines the role of special district governments in the provision of public spending and debt in the United States. Created by local governments to provide a large variety of goods (e.g. flood control, mass transportation, toll roads, bridges, credit market lending), special districts have more than doubled (to 29 487 units) in number over 1952–87. Over this same period, the number of local governments has fallen sharply from 116 000 to just over 82 000.<sup>2</sup> These data indicate that the changing composition of government units is a candidate for explaining public sector expansion.

It is commonly accepted that growth of special districts is related to introduction of fiscal rules (e.g. balanced budget and tax limitation) on governments other than special districts. This paper develops a theoretical model of the optimal mix of government suppliers which predicts how fiscal rules affect the overall supply of policy. The hypothesis that greater provision of services by special districts leads to spending and debt expansion is empirically examined.

## II. WHAT ARE SPECIAL DISTRICT GOVERNMENTS?

Public fiscal structure defines how activities are organized into political jurisdictions. The US public sector consists of federal, state and local governments and is a complex arrangement of over 82 000 individual governments. The largest is the local category which includes counties, municipalities, townships, school districts and special districts. Counties are found throughout the USA and municipalities are subdivisions within which corporations provide local functions aimed at specific population centres. Townships are mostly located in the Northeast and Midwest and provide functions without regard to population concentrations. School districts provide the vast majority of public education and are independent of other government units.

Special districts are independent, limited-purpose local governments that exist as separate legal entities with substantial administrative and fiscal independence from general purpose (other than special district) governments.<sup>3</sup> Bennett and DiLorenzo (1982) argue that, in response to taxpayer 'revolts' of the 1970s that led to various fiscal rules (e.g. limitations on taxes, expenditures, debt), politicians

<sup>1</sup>For a summary of the literature, see Borchertding (1985).

<sup>2</sup>The largest source of this overall centralization of the public sector stems from consolidation of school district governments. Over this period, school district governments fell from about 67 000 to just under 15 000.

<sup>3</sup>Hawaii and Alaska have very few of these governments and California and Illinois contain the largest number with each of these states accounting for over 2500 of these governments.

expanded the role of special districts in providing services to constituents. They hypothesize that, since most fiscal rules affect all local governments except special districts, policymakers circumvent rules by diverting policies to special districts. A common means of circumvention is through sales of non-guaranteed debt since, while balanced budget rules and deficit limitations exist in nearly every state, most rules apply only to guaranteed debt and most states forbid sales of non-guaranteed debt by governments other than special districts.

When special district governments were found to sell mostly non-guaranteed debt, Bennett and DiLorenzo (1982) concluded that expansion of special districts lowers the ability of voters to scrutinize the performance of policymakers. The percentage of debt that is non-guaranteed has been rising as well: 61% (1976), 65% (1981) and 86% (1986).<sup>4</sup> Bunch (1991) provides empirical support for the hypothesis that states with limitations on debt tend to create more special districts than states without limitations. Marlow and Joulfaian (1989) examine the relationship between 'on-budget' (other than special district) policies of state and local governments and 'off-budget' policies of special districts. Empirical evidence suggested that, in states with relatively high on-budget expenditures, special district activities are high as well. Joulfaian and Marlow (1991a) argue that, because a permanent causal influence runs from on-budget to off-budget policies, the faster is past expansion of on-budget policy, the greater policymakers substitute policies into off-budget entities.

### III. OPTIMAL MIX OF POLICIES

Assume that total policy has two components: on-budget and off-budget. Policies can be either expenditures, debt issuance or any other public policies. On-budget policies are provided by non-special district governments and off-budget policies are provided by special districts. Policy demand is assumed to be for total policy and voters are not concerned about allocation between on-budget and off-budget suppliers. The primary modelling issue is therefore on the supply side of policy. While technology and production costs are determinants of supply, technology is not directly considered because of the short time span of this study.<sup>5</sup>

Our focus on production costs examines costs of on-budget and off-budget inputs. The mix of these inputs is

assumed to be determined by policymakers whose only goal is to minimize costs of producing total policy. Policymakers recognize substitutability between on-budget and off-budget inputs and would be indicated by slopes of isoquant curves representing combinations of inputs yielding constant levels of total policy.<sup>6</sup> Assuming fixed prices for inputs, an expansion path defines least cost combinations of inputs associated with policy expansion.

Changes in relative input prices trace out different policy expansion paths. For example, if the relative price of on-budget inputs rises, policymakers alter on-budget and off-budget combinations along flatter isocost curves. The larger the price differential change, the greater is substitution from on-budget to off-budget inputs. Flatter expansion paths indicate that policy expansion is met by raising relative usage of off-budget inputs. Other possible expansion paths exist and are dependent on the substitution and income effects stemming from relative price changes and the resulting expansion path becomes a function of slopes of isoquants and magnitudes of price changes.

Total variable costs are described by the appropriate expansion path and therefore increases in costs of either input, increase total variable costs of policy. Flatter expansion paths are associated with leftward shifts in total variable costs and, since marginal costs increase, increases in total variable costs decrease the supply of policy. Similarly, if the relative price of on-budget inputs rises, rising total variable costs cause supply curves of policy to fall as well.

Notice that rising relative prices of on-budget inputs are consistent with the hypothesis that off-budget expansion follows increased pressure to reduce on-budget policies. That is, if off-budget expansions are policymaker-reactions to taxpayer 'revolts' against expanding government, this model predicts that isocost curves facing policymakers become flatter. Because fiscal rules focus on on-budget policies, the opportunity set described by a given isocost becomes flatter which means that, while no change occurs for maximum levels of off-budget inputs that may be purchased, there is a reduction in maximum levels of on-budget inputs that may be purchased from expenditure levels associated with given isocosts. In other words, imposition of fiscal rules are predicted to cause a leftward shift in the supply of policy.

We now examine how a fall in supply influences total policy. Changes in total expenditures are assumed to measure policy changes. Whether expenditures rise or fall in response to a fall in supply depends on whether demand is

<sup>4</sup>Data sources: 1976 (1977 *Census of Governments* Volume 4, Number 5, Table 49); 1981 (1982 *Census of Governments* Volume 4, Number 2, Table 10); and 1987 *Census of Governments* Volume 4, Number 2, Table 10). These percentages are averages of special district governments, by state; i.e., averages of 50 observations.

<sup>5</sup>Baumol (1967) has argued that government may grow because its growing service component is not subject to the rapid technological changes that influence non-service industries. Over time, changes in technology may affect the optimal mix between on-budget and off-budget inputs and exert independent influences on the supply of policy.

<sup>6</sup>Our discussion assumes that on-budget inputs are plotted along the vertical axis and off-budget along the horizontal axis.

price elastic or inelastic. Elementary price theory demonstrates that expenditures rise in cases of inelastic demand and fall in cases of elastic demand. Policy expansion is therefore consistent with a falling supply when demand is relatively inelastic. Studies indicate that demands for state and local government policies are price inelastic and therefore support the prediction that expansion of off-budget policies has reduced supply and led to policy expansion.<sup>7</sup> Falling within a range of  $-0.25$  to  $-0.50$  for total policy, education and safety policies tend to be more inelastic than public welfare and recreational policies.

#### IV. EMPIRICAL MODEL OF TOTAL POLICY

From a cross-section of 48 states, the following models of expenditure and debt policies are estimated by ordinary least squares:

$$EXP_i = f(POP_i, Y_i, DENSITY_i, RATIO1_i, CEN1_i, GRANTS_i, DEBT_i) \quad (1)$$

$$DEB_i = f(POP_i, Y_i, DENSITY_i, RATIO2_i, CEN2_i, GRANTS_i) \quad (2)$$

where

$EXP_i$  = off-budget + on-budget expenditures of state and local governments

$DEB_i$  = off-budget + on-budget debt of state and local governments

$POP_i$  = population in 1000s

$Y_i$  = per capita personal income

$DENSITY_i$  = percentage of population that is urban

$RATIO1_i$  = proportion of expenditures that are off-budget

$RATIO2_i$  = proportion of debt that is off-budget

$CEN1_i$  = proportion of expenditures that are at state level of government

$CEN2_i$  = proportion of debt that is issued by state government

$GRANTS_i$  = state grants to local governments/local government revenues

$DEBT_i$  = net debt of state and local governments/state and local government revenues.

Two normalization specifications for dependent variables are considered: division by gross state product (GSP) and by population. Data for these policy variables are obtained from the 1982 and 1987 *Census of Governments*. Off-budget policies are those of special districts and on-budget policies are those of all other state and local governments. Two

periods are considered: 1981–82 and 1986–87 fiscal years and, for convenience, these two periods will be respectively referred to as 1981 and 1986. All other data are collected from *Statistical Abstract of the United States* and *Facts and Figures on Government Finance* and are measured in 1981 and 1986 calendar years.<sup>8</sup> Units of observation are all states except Alaska and Hawaii which are often excluded from similar studies since they are often considered to be outliers.

$RATIO1_i$  and  $RATIO2_i$  measure supply variables that reflect changes to expansion paths confronting policymakers in their efforts to provide policy. For example, imposition of fiscal rules on on-budget policies cause leftward shifts in supply. Therefore, in response to fiscal rules on expenditures or debt, rising values of  $RATIO1_i$  and  $RATIO2_i$  result from changes in least-cost combinations of on-budget and off-budget inputs and, as supplies of policies shift leftward, total policy is hypothesized to rise when demand for policy is price inelastic.

$POP_i$ ,  $Y_i$  and  $DENSITY_i$  are demand-related variables and are therefore hypothesized to exert positive influences on policies  $EXP_i$  and  $DEB_i$ . Because it signals changes in educational and public service needs, Musgrave and Musgrave (1989) argue that rising populations are a major determinant of public sector activities. Fisher (1988) argues that most state and local government services are normal goods and are usually income inelastic. As an indicator of the need for infrastructure and public services,  $DENSITY_i$ , is suggested by Musgrave and Musgrave (1989) as a positive determinant of public sector size.

Following the Brennan and Buchanan (1980) model of Leviathan, greater centralization results in greater monopoly power which leads to expansion of public policies.<sup>9</sup> Fiscal centralization  $CEN1_i$  and  $CEN2_i$  are therefore hypothesized to be positively related to total policy. Based on the hypothesis that higher values of  $GRANTS_i$  lower the financing burden perceived by taxpayers, Winer (1983) and Logan (1986) report evidence that higher values of  $GRANTS_i$  expand government. The fiscal illusion hypothesis of Buchanan and Wagner (1977) argues that policymakers 'hide' the costs of policy by raising the percentage of policy financed by budget deficits and therefore higher values of  $DEBT_i$  are hypothesized to increase demand for policies. Because  $DEBT_i$  and  $DEB_i$  share the same numerator,  $DEBT_i$  is excluded in estimation of Equation 2.

Table 1 reports least-squares estimations of Equation 1. Population is never found to exert a statistically significant influence on expenditures. Per capita personal income is found to be a positive and significant determinant of per capita expenditures. No significant relationship is found between per capita personal income and total expenditures

<sup>7</sup>See Fisher (1988, pp. 294–95) and the references cited therein.

<sup>8</sup>The one exception is the 1981 value for  $DENSITY_i$  which is measured in 1983. This measurement year is chosen for convenience and, since values of this variable do not change much over such short periods, this should not pose any problem for the empirical work.

<sup>9</sup>See Joulfaian and Marlow (1991b) for a review of the empirical literature on this hypothesis.

Table 1. *Estimations of total expenditures of state and local governments*

Dependent variable	1986		1981	
	% of GSP	Per capita	% of GSP	Per capita
Constant	0.16	275.38	0.14	- 92.35
	3.65	0.27	2.98	0.11
POP	3.5E-07	0.02	2.8E-07	0.01
	0.39	1.03	0.28	0.86
Y	- 1.7E-06	0.16*	- 3.0E-06	0.17*
	0.80	3.26	0.93	3.19
DENSITY	8.9E - 05	- 6.07	0.0004*	- 6.64**
	0.33	- 1.00	1.95	1.60
RATIO1	0.11*	1671.29**	0.12*	1435.66**
	1.94	1.32	2.10	1.50
CEN1	- 0.01	465.07	- 0.06	776.55
	0.17	0.30	0.87	0.68
GRANTS	0.09**	312.18	0.18*	- 155.18
	1.37	0.20	2.83	0.14
DEBT	0.01	480.25**	0.01	368.94
	0.90	1.45	0.78	1.14
R <sup>2</sup>	0.06	0.21	0.27	0.20
s.e.e.	0.02	487.16	0.02	388.89
F	1.47	2.81	3.51	2.70
n	48	48	48	48

*t*-statistics below estimated coefficients. \*, \*\* refer to significance at 5, 10% levels (one-tailed test) or greater.

Table 2. *Estimations of total debt of state and local governments*

Dependent variable	1986		1981	
	% of GSP	Per capita	% of GSP	Per capita
Constant	0.16	510.09	0.02	- 953.31
	1.79	0.32	0.31	0.87
POP	- 4.0E-06*	- 0.06*	- 4.2E-06*	- 0.05*
	2.08	1.83	2.64	2.14
Y	- 8.1E-06**	0.06	- 1.6E-06	0.19*
	1.32	0.56	0.26	2.05
DENSITY	0.001*	20.70*	0.001*	5.03
	2.74	1.91	2.73	0.79
RATIO2	0.06*	857.86*	0.07*	799.11**
	2.42	1.92	4.77	3.50
CEN2	0.002	- 202.64	0.09*	568.08
	0.03	0.16	1.88	0.73
GRANTS	0.14**	1931.40	0.12	1185.71
	0.84	0.64	1.08	0.67
R <sup>2</sup>	0.24	0.17	0.43	0.31
s.e.e.	0.05	950.59	0.04	620.90
F	3.44	2.58	6.83	4.51
n	48	48	48	48

*t*-statistics below estimated coefficients. \*, \*\* refer to significance at 5, 10% levels (one-tailed test) or greater.

as a share of gross state product. Urbanization exerts a statistically significant influence on expenditures only in 1986. Policy centralization is never significantly related to expenditures and, with one exception, the ratio of debt to tax revenues is not related to expenditures. Strongly significant, and of the hypothesized positive sign in all cases, is the share of off-budget policy.

Table 2 reports least-squares estimations of Equation 2. Opposite to what was hypothesized, population always exerts statistically significant and negative influences on debt. Per capita personal income is significantly related in one or two cases in each of the two years; while hypothesized to be positive, it exerts a positive and statistically significant influence only in 1981. Expected positive rela-

tionships between urbanization and debt are statistically significant in three out of four cases. Little evidence of the hypothesized positive relationship between centralization and debt issuance is found. Finally, the share of off-budget debt issued by special districts exerts strongly significant, and, as hypothesized, positive influences in all cases.

## V. CONCLUSIONS

Assuming that rapid growth of special districts is a result of voter-imposed constraints on on-budget policies, the empirical evidence suggests that fiscal rules cause overall expansion of expenditure and debt policies of state and local governments. Several issues for future study are suggested by this paper. An important issue concerns why voters impose fiscal rules primarily on on-budget policies since, if they wished to slow down expenditures or debt burdens, they should impose fiscal rules on both on-budget and off-budget sectors. Further research on the fiscal visibility of special districts may suggest the degree to which voters are aware of the substitute nature of these two sectors.

Another issue concerns the influence that special district governments exert on overall performance of the public sector. If, for example, voters do not fully recognize that special districts are, in fact, governments, voters focus attention on on-budget policies and thereby, when a growing portion of policy is delivered by off-budget entities, overall performance may ultimately diminish as voters increasingly monitor the performance of a smaller component of total policy. Moreover, to the extent that voters do not perceive special districts as governments, they are likely to underestimate the true size of the public sector.

For convenience, it has been assumed that policymakers are only motivated to minimize costs of delivering policies to voters. This assumption is consistent with the public interest view of policymakers and it may be appropriate to consider how alternative assumptions, such as budget-maximization, alter predictions of this model. It is interesting

that, even with a model which assumes that policymakers are passive servants of voters, introduction of fiscal rules aimed at slowing expansion leads to public sector expansion.

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