

Can Competition Among Local Governments Constrain Government Spending?

by Randall W. Eberts and
Timothy J. Gronberg

Randall W. Eberts is an assistant vice president and economist at the Federal Reserve Bank of Cleveland. Timothy J. Gronberg is an associate professor of economics at Texas A&M University.

The authors wish to thank Ralph Day and David D'Alessandris for excellent computer assistance and Erica Groshen and Daniel McMillen for helpful comments and suggestions.

Introduction

The United States contains more than 80,000 separate governmental units. If none of these units overlapped, each government would serve fewer than 2,000 individuals. Governmental units do overlap, however, resulting in several layers of jurisdictions. Residents within a metropolitan area typically receive public services from a municipality, a township, a county, and a host of special districts.

In addition, at each level of government, several similar governmental units may provide services within the same geographical area. For example, the Chicago metropolitan area alone contains more than 250 municipalities, each responsible for the same array of governmental functions. Overlapping these governments are 835 special districts, which usually perform only a single function, such as providing regional transportation or enforcing environmental protection regulations.

The impact of this structure on government behavior is varied, and the net effects are not yet fully understood. Critics of the decentralized structure of local governments blame the proliferation of local governments for what they see to be "runaway" spending. They argue that duplication of efforts by similar but independent jurisdictions within the same geographical area

is an inefficient way to provide public services and that the resulting fragmentation could negate any benefits derived from economies of scale.

Proponents of a decentralized public sector counter with the argument that it fosters increased efficiency in the production of public goods. They maintain that competitive pressures induce local governments to adopt the most efficient provision techniques and to tailor the levels of provision of public goods to the preferences of societal subgroups (Oates [1972]).

The phenomenal expansion of the local public sector adds fuel to this controversy. Since 1950, state and local government expenditures have increased at a faster rate than either the gross national product, federal expenditures, or expenditures on private-sector services. State and local governments currently claim 17 percent of total personal income, in contrast to 10 percent in 1950. Currently, they spend two and one-half times more than the federal government spends on civilian services such as education, roads, welfare, public health, hospitals, police, and sanitation.

How much of this growth is due to government structure and how much is due to other factors, such as demand for local services, is an empirical question. Even the effect of governmental structure can work in opposite direc-

tions. For instance, a decentralized public sector may increase local public spending due to duplication of efforts, but at the same time, competition among these units may constrain spending. The net effect of our present governmental structure on government spending depends on which of these various factors is more important.

To further complicate matters, there are two distinct types of local governments. One type provides a variety of services to a subgroup of the county or metropolitan population, while the second type typically provides a single service to the entire local area. Possible differences in behavior of these two government types must be taken into account. Two previous studies, one by Oates (1985) and a follow-up by Nelson (1987), have estimated the relationship between decentralization and government spending, but without conclusive results.¹

The purpose of this paper is to continue the inquiry into the relationship between decentralization and the size of the local public sector. We test the decentralization hypothesis proposed by Oates, in which an increase in the number of governmental units reduces local government spending as a percentage of personal income. However, unlike Oates (and Nelson), we contend that the hypothesized effects will most likely be observed at the metropolitan and county levels (referred to as the local level), not at the state or national levels. We believe that most of the “discipline” derived from competition for households and firms would be observed at these levels of disaggregation, because these levels more closely approximate local labor markets within which firms and labor are most mobile. Oates (1985), in fact, argues that the “discipline” resulting from fiscal competition should increase as the geographical size of the unit of analysis decreases. However, neither Oates nor Nelson uses a unit of analysis less aggregated than the state.

To test our point, we use various levels of aggregation from the county to the state level. We find solid statistical support for the decentralization hypothesis at the metropolitan and county levels. Increases in the number of

competing general-purpose government units are associated with a statistically significant decrease in the relative income share of local public expenditures. At the same time, we find a distinct difference in behavior between the two types of government. An increase in the number of single-purpose districts increases the share of personal income going to local government expenditures. To further support our point, we find that these relationships are not significant at the state level, which is consistent with the results of Oates and Nelson.

I. Competition Among Local Government Jurisdictions

The potential benefits of competition among local government jurisdictions are similar to the benefits associated with competition in private markets. In the private sector, competition induces profit-maximizing firms to provide goods or services preferred by consumers at the lowest resource cost. The motivating force behind this behavior is the choice of suppliers available to consumers. If a firm raises its price, consumers will switch to the supplier with the lowest price, assuming that all firms are identical and that consumers incur no additional cost in searching for another supplier. Given enough competing firms (that is, choices to the consumer), no firm can set prices above the per-unit cost of production.

The same competitive forces exist among local government jurisdictions. By law, local governments cannot earn profits. However, according to Niskanen (1971), public administrators may be motivated to maximize revenue, and thus expenditures, in order to expand desirable aspects of their working environment. Public administrators thereby “consume” profits on the job instead of taking them home.

The capacity of governments to increase revenues depends upon the customer base—taxpayers who live within their jurisdictions. If local governments attempt to raise taxes or to reduce the level and quality of services, then taxpayers will have an incentive to locate in neighboring jurisdictions that provide a service/tax package more in line with the taxpayers’ preferences. The loss of households and firms reduces a government’s tax base and, in turn, reduces its ability to raise revenue.

Thus, the basis for the constraining effect of decentralization is founded upon the inter-jurisdictional competition for mobile resources, both labor and firms. The line of argument

■ 1 An unpublished paper by Zax (1987), recently brought to our attention, also takes exception to the use of state-level data by Oates and Nelson. Using county-level data, he finds a negative and statistically significant relationship between the number of governments and the size of the local public sector. His study differs from ours in at least three ways. First, he uses own-source revenue as a dependent variable, whereas we use local expenditures on selected functions. Second, we explore these effects at various levels of aggregation, not just at the county level. Third, he finds that an increase in the number of special districts also reduces the size of the local public sector. We find the opposite effect at each level of disaggregation.

follows the old industrial-organization paradigm of structure, conduct, and performance. Applied to the public sector, the argument runs from an increase in the number of independent public jurisdictions (suppliers), to an increase in the degree of competition, to a decrease in the relative size of the public sector. However, the efficacy of governmental fragmentation depends on the mobility of households and firms.

The net benefit of the move determines the extent to which mobility occurs or is likely to occur. This benefit comes from either the savings derived from locating in a lower-cost jurisdiction or the advantages gained from residing within a jurisdiction that provides more or better services, everything else being equal.

The costs associated with choosing between local governments are generally greater than the costs incurred in searching for alternative suppliers of private goods and services. To change local governments, a household must change residence and incur the costs of purchasing a new home and finding a new job, and must bear the emotional costs of moving to a new area.

However, these costs are in direct proportion to the distance one must move in order to find a more preferable governmental unit. For example, if enough choices of local governments are available within the same metropolitan area, then the discontented taxpayer may not need to change jobs in order to change jurisdictions. Consequently, the mobility of households and firms increases as the size of the geographical area decreases. Therefore, we would expect local governments to be more constrained by competitive forces at the county or metropolitan level than at the state or national level.

The two empirical studies by Oates and Nelson have looked for the constraining effect of competing jurisdictions only at the state level. Oates proposes and tests the hypothesis that the size of the public sector should vary inversely with the extent of fiscal decentralization, other things being equal. He uses the number of jurisdictions within each state as a measure of decentralization. Using state-level aggregates, however, he finds no significant relationship between state and local expenditures as a percent of state personal income and the number of jurisdictions.

In a reply to Oates' paper, Nelson suggests two modifications. The first is to distinguish between general-purpose jurisdictions (such as municipalities) and single-purpose jurisdictions (such as school districts and mosquito-abatement districts). Nelson argues, and rightfully so, that the two types of districts are not comparable and consequently should not be lumped

together. The multiplicity of special districts within a metropolitan area does not necessarily indicate that consumers have a choice, but rather that residents are provided several services, each by a different district.

In addition, since many special districts provide only minor services and since nearly half of them lack the authority to levy taxes, Nelson argues that there may be little incentive for individuals to choose between these districts. The second modification is to include state-mandated programs in the analysis to account in some way for differences in functional responsibilities among jurisdictions. With these modifications, Nelson finds the desired systematic relationships, but the precision of the estimates is below the usual acceptable confidence level.²

II. Market Structure of Local Governments

As mentioned previously, one of the prerequisites for competition is a sufficient menu of choices offered to consumers. Tallying up the number of local governments in the United States casts little doubt on the potential for choice. According to Aronson and Hilley (1986), 79,862 governmental units below the state level existed in 1977. These units tend to fall into two categories: general-purpose and single-purpose governments.

General-purpose governments, such as municipalities and counties, provide a variety of services ranging from fire protection to health care. As shown in table 1, municipalities numbered more than 18,000 in 1977, or 24 percent of all governmental units; counties totalled 3,042, or less than 4 percent. Single-purpose units, consisting primarily of school districts and special districts, comprise the majority of local government jurisdictions. As noted in table 1, over 40,000 governmental units have been established to provide only a single function. More than half of these units are special districts, which include sanitary districts, drainage districts, and soil-conservation districts.

■ 2 Nelson does find the desired statistically significant relationship between the number of general-purpose governments and the size of the local public sector using state-level data. However, in what we take as Nelson's most preferred specification, equation (3) and dependent variable G^* , the coefficient on the general-purpose-government variable has a t-value of only 0.91. Thus, although we are in total agreement with Nelson's methodological changes, we do not believe that a clear vindication of the decentralization claims utilizing the state sample has been established.

The overlapping structure of local governments is far from static. Between 1957 and 1977, the number of local governments fell by 22,514, primarily from a conscious attempt to consolidate local school districts. The reduction in the total number of units would have been much

T A B L E 1

Number and Type of Local Governmental Units in the United States for Selected Years

Type of Government	Number of Units			
	1957	1967	1977	1982
County	3,047	3,049	3,042	3,041
Municipality	17,183	18,048	18,862	19,076
Township and town	17,198	17,105	16,822	16,734
School district	50,446	21,782	15,174	14,851
Special district	14,405	21,264	25,962	28,588
Total	102,279	81,248	79,862	82,290

SOURCE: Numbers obtained from Aronson and Hilley (1986), Table 4-1, p. 76.

greater during this time if it were not for the creation of more than 11,000 special districts. Between 1977 and 1982, the proliferation of special districts continued, while the number of other types of governmental units remained relatively constant.

As expected, local governmental units are concentrated in metropolitan areas. We find that counties in Standard Metropolitan Statistical Areas (SMSAs) have almost twice as many governmental units as do non-SMSA counties—an average of 40 compared to 21. The ratio is even higher for single-purpose units (2.3 to 1), but it is smaller for general-purpose governments (1.6 to 1). In addition, we find that only 25 percent of the metropolitan areas had fewer than 10 general-purpose units and 14 single-purpose districts. On the other hand, 50 percent of the SMSAs contained more than 21 general-purpose units and 29 single-purpose districts.

III. The Empirical Test

The basic relationship to be tested is between government performance and market structure. The specification and analysis in this section follow the lines initiated by Oates and Nelson. The principal difference in our study is that we focus solely on local government expenditures

in local labor markets, rather than on the aggregate of the state and local public-goods sectors. Consistent with this focus, we adopt two levels of aggregation as the geographical unit of observation: the county and the metropolitan area. In addition, as a point of reference to the previous two studies, we also estimate the relationship at the state level.

Our data set consists of observations on local public-sector characteristics and relevant demographic features of more than 2,900 counties and 280 SMSAs in 1977. This year was chosen for two reasons. First, it is consistent with the studies by Oates and Nelson. Second, some information, such as state mandates, was available only during this period. We have analyzed more current data on local-government expenditures for 1985, while still using state mandates from the earlier period, and find no qualitative differences in the results.

Variables

Local government performance is measured by expenditures on the major local public services as a percentage of personal income in either the county or the SMSA, whichever is appropriate. We include local expenditures on local schools, public welfare, fire and police protection, sanitation, and local parks.³

The key explanatory variable is market structure, which is measured by the number of local governments within the appropriate unit of observation. Local governments are divided into the two classes described earlier: general-purpose and single-purpose jurisdictions.⁴ Three different measures of the number of local governments are used in the analysis. The first measure is simply the total number of each class of local governmental units found within the appropriate unit of analysis (county or metropolitan area). The second method normalizes the number of units by the size of the population served by all of these local governments. The third method divides the number of juris-

■ 3 Nelson did not include police protection in his estimation. We find, however, that the results are not sensitive to its inclusion or exclusion.

■ 4 The number of general-purpose governments is the sum of the number of county and municipal governments, except in Pennsylvania, New Jersey, and the New England states, where townships are also included. The number of single-purpose governments is the sum of the number of townships, school districts, and special districts, except in the aforementioned states, where townships are not included. The reason for the exceptions is that the functional responsibilities closely resemble municipalities in these states.

dictions by the total land area in the county or SMSA. This last method accounts to some degree for the ease of mobility among the various governmental units.

The other explanatory variables include state mandates, per-capita personal income, population, and intergovernmental grants as a percentage of total local tax revenues. The first three variables may be considered proxies for the demand for local public services. As Nelson notes, state mandates may impose binding minimum constraints on certain local government activities. As defined by the Advisory Commission on Intergovernmental Relations (ACIR), which collected the data, a state mandate is a legal requirement imposed by the state that a local government must undertake a specified activity or provide a service that meets minimum state standards.⁵ The presence of such restrictions would, therefore, be positively associated with the relative size of the local public sector.

The demand for local public services should be positively related to personal income, according to traditional consumer demand theory. However, the relationship between *per capita* income and government spending as a percentage of personal income has been subjected to considerable empirical scrutiny. Investigation of Wagner's "law" or, perhaps more correctly, Wagner's hypothesis of a positive correlation between income and government's relative claims on that income, has sparked much research and has kindled considerable controversy.⁶ To our knowledge, the empirical studies have all involved national samples. Our study will provide a simple test of Wagner's "law" at the local level.

An increase in population, holding other variables constant, would also be associated with a larger local public sector. This result in some ways follows the thinking of Wagner, who saw an increase in population density and urbanization leading to increased public expenditures on personal protection and economic regulation (Bird [1971]).

The ratio of intergovernmental grants to local tax revenues measures the extent to which local

governments rely on higher-level governments for funds. Because of the matching provisions of many federal and state grants, we would expect the grants to stimulate local government expenditures.⁷

Results

Fourteen separate models were estimated: one for each level of aggregation and for each measure of decentralization. The estimates displayed in table 2 for one of the models are typical of the results found for the other models. We find that an increase in decentralization of *general-purpose* governments, measured by any one of the three measures, is statistically significantly related to a decrease in the size of the local public sector. This finding supports the decentralization hypothesis: an increase in jurisdictional fragmentation is associated with a decrease in local budget share.

On the other hand, we find that an increase in the number of *single-purpose* units increases the local budget share. This suggests that the costs of providing services through special districts outweigh the constraining effects that competition may impose on spending or the savings that result from economies of scale. Thus, our results support the argument that the proliferation of special districts has increased local spending.

The negative and significant coefficient on per capita income is evidence against the relevance of Wagner's hypothesis applied to the local government sector. At the state level, we find a positive relationship, as does Oates. A negative correlation between local public-expenditure share and income is not unexpected, however. Most studies of local public-expenditure demand find income elasticities that are significantly less than unity, which implies a decline in aggregate budget share as average community income rises.⁸

The positive coefficients on the population and intergovernmental transfer variables are consistent with our earlier discussion.

■ **5** The ACIR surveyed local governments about 77 functional subcomponents in five broad areas: state personnel, other than police, fire, and education (15 components); public safety (31); environmental protection (8); social services and miscellaneous (10); and education (13).

■ **6** Bennett and Johnson (1980) provide a comprehensive summary of the debate and a compendium of the empirical results. Ram (1987) appears to have made the most recent contribution to the literature.

■ **7** King (1984) offers a comprehensive summary and critique of the effects of grants on local government spending.

■ **8** Inman (1979) includes a summary of studies of the demand for local public services.

T A B L E 2

**Regression Results at the SMSA
Level, 1977**

<u>Variables</u>	<u>Mean (Standard error)</u>	<u>Coefficient (T-statistic)</u>
Number of general- purpose units	28.8 (40.83)	-.015 (4.48)
Number of single- purpose units	54.1 (80.55)	.005 (2.79)
Per capita income (\$1,000s)	6.67 (.98)	-.317 (2.87)
Ratio of transfers to local taxes	1.18 (.53)	.559 (3.02)
Population in SMSA (100,000s)	5.53 (10.04)	.45 (3.85)
Total state mandates	37.0 (11.92)	.083 (11.59)
Constant		5.23 (6.17)
Dependent variable: local expenditures per personal income	6.94 (1.80)	
Number of observations	289	
R-square	.43	

SOURCE: Government expenditure data from Census of Governments, 1977; personal income and population data from the Bureau of Economic Analysis; state mandates compiled by the ACIR.

Various Measures of Decentralization

The conclusion that increased decentralization of general-purpose governments is associated with a smaller local public sector is supported by our analysis regardless of which measure of decentralization is used. As seen in table 3, not only are the coefficients statistically significant at the 1 percent level for SMSAs and counties, but the magnitudes of the elasticities are also of similar magnitudes, with few exceptions. For example, at the SMSA level (column 1), we find that a 10 percent increase in the number of general-purpose jurisdictions reduces the local public sector's share of personal income by 0.6 percent. In the case of SMSAs, a 10 percent increase in general-purpose governments would mean only an additional three units.

However, when state-level data are used, the statistical significance of the estimates falls below the 10 percent confidence level. The only exception is the effect of the number of general-purpose governments, which is statistically significant right at the 10 percent level.

Table 3 also reveals that the size of the local public sector at the SMSA level is slightly more responsive to a change in the number of general-purpose governments than to a change in the number of single-purpose governments. This relationship holds no matter which decentralization measure is used, but is less consistent at the county level.

IV. Conclusion

We have found a significant relationship between governmental structure and government size. Two basic relationships emerge from the analysis. First, an increase in the number of general-purpose government units within a metropolitan area or county boundary reduces the share of personal income going to the local public sector. Second, an increase in single-purpose government units has the opposite and equally significant result of increasing the size of the local public sector.

The difference in behavior between the two types of governments underscores our conclusion that competition among local general-purpose governments constrains local government spending. Recall that suppliers are disciplined by the presence of other suppliers only when they provide similar services to the same market. General-purpose governments meet this requirement more closely than do single-purpose governments. Typically, a single-purpose government is the sole supplier of a specific service within a local market, whereas each general-purpose district provides a similar array of services.

Thus, the existing structure of government creates two opposing forces of government behavior. Competition among general-purpose units, such as municipalities, constrains local government spending. On the other hand, the overlapping labyrinth of single-purpose governments stimulates local government spending.

Much of the current arrangement of local governments resulted from attempts by states and localities to respond to changing conditions within the various constraints imposed on them. As a practical matter, states and municipalities have limited ability to respond to changing conditions. States are constrained by local loyalties, vested interests, and the inertia of the

T A B L E 3

Relationship Between Various Measures of Local Government Competition and Local Government Expenditures as a Fraction of Personal Income

Measure of Competition	Level of Aggregation				
	SMSA	County			State
		All	Non-Metro	Metro	
A. Number of units					
General-purpose	-.063	-.045	-.043	-.054	-.069*
Single-purpose	.040	.034	.046	.042	.005**
B. Number of units per capita					
General-purpose	-.076	-.036	-.062	-.068	-.032**
Single-purpose	.050	.035	.045	.033	.019**
C. Number of units per square mile					
General-purpose	-.065	-.018	-.022	-.016	—
Single-purpose	.055	.005	-.028	.023	—

Note: Numbers are expressed as elasticities. All estimates are significant at the 1 percent level unless denoted by an asterisk. A single asterisk denotes significance at the 10 percent level but less than 5 percent level. A double asterisk denotes significance at less than the 10 percent level. The estimates are derived by regressing the local government expenditures as a percent of personal income against measures of government competition, population, per capita income, intergovernmental revenue, and state program mandates. Estimates of a typical regression equation are shown in table 2.

SOURCE: Authors.

status quo. The power of localities to handle public services is often made difficult by state statutes that limit powers to tax and to incur debt.

Since the late 1950s, special districts have been established as a means of circumventing these constraints by shifting responsibilities away from general governments. The federal government has further stimulated the creation of special districts through "direct advocacy." Many federal agencies would rather deal directly with officials of special districts than with officials from general governments such as counties or municipalities (Aronson and Hilley [1986]).

In the past few years, a number of states have begun to take a systematic look at the current structure of local governments. Several states have established advisory commissions to consider reorganizing and streamlining the perceived fragmented system of local governments that dot their landscape. These commissions appear to be particularly concerned about how the large number of special districts affects the provision of services.

Our analysis provides some information that

may be useful to these reform efforts. First, our results suggest that reform efforts directed toward special districts are well-guided. Clearly, an increase in the number of single-purpose governments, which consist mostly of special districts, increases government spending. Although these results are very strong, we should caution that we have not been able to control entirely for differences in the level of services provided by these governments. It may be the case that part of the observed increase in spending associated with greater numbers of units simply indicates that additional special districts are providing additional services.

Second, our results warn against lumping together general-purpose and single-purpose governments when considering streamlining local government structure. We show that the two different types of governments exhibit distinctly opposite behavior.

Third, our results suggest that a competitive environment among specific types of local governments can constrain government spending and promote the efficient provision of local public services.

REFERENCES

- Advisory Commission on Intergovernmental Relations. *State Mandating of Local Expenditures*. Washington, D.C.: U.S. Government Printing Office, 1978.
- Aronson, J. Richard, and John L. Hilley. *Financing State and Local Governments* (4th ed.). Washington, D.C.: The Brookings Institution, 1986.
- Bennett, James T., and Manuel H. Johnson. *The Political Economy of Federal Government Growth: 1959-1978*. College Station, TX: Texas A&M University, 1980.
- Bird, Richard M. "Wagner's 'Law' of Expanding State Activity." *Public Finance*. 26 (1971): 1-26.
- Inman, Robert P. "The Fiscal Performance of Local Governments: An Interpretive Review." In Mahlon Straszheim and Peter Mieszkowski, eds., *Current Issues in Urban Economics*. Baltimore, MD: Johns Hopkins University Press, 1979: 270-321.
- King, David N. *Fiscal Tiers: The Economics of Multi-Level Governments*. London: Allen and Unwin, 1984.
- Nelson, Michael A. "Searching for Leviathan: Comment and Extension." *American Economic Review*. 77 (March 1987): 198-204.
- Niskanen, William A. *Bureaucracy and Representative Government*. Chicago: Aldine-Atherton, 1971.
- Oates, Wallace E. *Fiscal Federalism*. New York: Harcourt Brace Jovanovich, Inc., 1972.
- _____. "Searching for Leviathan: An Empirical Study." *American Economic Review*. 75 (September 1985): 748-57.
- Ram, Rati. "Wagner's Hypothesis in Time-Series and Cross-Section Perspectives: Evidence from 'Real' Data for 115 Countries." *Review of Economics and Statistics*. 69 (May 1987): 194-204.
- Zax, Jeffrey S. "Is There a Leviathan in Your Neighborhood?" New York: City University of New York, Department of Economics, November 1987.