# LOCAL GOVERNMENT FRAGMENTATION
## Does It Drive Up the
## Cost of Government?

DREW A. DOLAN

Western Michigan University

For decades a debate has lingered about the ramifications of local government fragmentation, and the arguments traditionally are based on political ideologies and impressionistic views rather than on empirical analysis. In this empirical study, a fiscal perspective is added to the issue. A fragmentation measure, based on the dispersion of expenditures among local governments, is used to examine the relationship between fragmentation and the cost of government in Illinois, including the very fragmented Chicago metropolitan region. The results indicate a significant positive relationship between fragmentation and the cost of government.

**For more than a half century,** many political scientists, urban planners, and other social scientists writing about urban areas have agreed that *the* urban problem is the existence of a large number of independent jurisdictions within a single metropolitan area (Dye 1988). Such thought is indicative of the arguments offered by those seeking centralization of governments in urban areas but certainly is not accepted by all concerned with local government. Although the issue of consolidation versus local government fragmentation has been on the policy agendas of those seeking the reform of metropolitan government for more than 50 years, debate still exists about whether fragmentation actually produces an unacceptable number of harmful side effects. Across the country, officials in communities facing increasing degrees of fiscal stress and decreasing levels of service delivery are arguing the pros and cons of consolidating units of local government or centralizing the provision of services as a possible solution. The pros and cons offered in these discussions are detailed later in this article.

The issue of local government fragmentation and its effects has been debated for decades, with arguments often based only on impressionistic

28

views and little gained in the way of resolution of the question of whether fragmentation creates harmful side effects (Campbell and Bahl 1976; Grant and Nixon 1982). As a result of conflicting empirical evidence gathered in the early years of the debate, the argument over the adverse effects of fragmentation has been intuitively, rather than empirically, driven.

The acceptance of intuitive arguments, the lack of empirical evidence, and the inability to settle the debate about the effects of fragmentation have created two problems. First, those who consider fragmentation to be a primary cause of urban problems remain mired in an unresolved debate that historically has prevented an agreement on the problems created by fragmentation and subsequent solutions to those problems. Second, those who favor noncentralization believe the debate has provided many local government officials with a "cause" for many of their fiscal ills that may be only a facade for hidden actual causes that are yet to be determined because of the predisposition to fragmentation as the cause.

The importance of this analysis rests in providing empirical evidence that will help to settle this debate. The inability to bring resolution to the issue has caused many to consider the question of the effects of fragmentation unresolvable and additional empirical analysis to be of little value. Because of this, much of the recent literature pertaining to fragmentation has served only to rehash past empirical findings as support for ideologies that hinder adoption of a unified approach to the problems facing urban areas. As a step toward resolving the debate, I will introduce a new measure of fragmentation.

## A DEFINITION OF FRAGMENTATION

*Local government fragmentation* is the term attributed to the proliferation of government units that may exist within a given region. Traditionally, fragmentation is considered to take one or more of four forms (Goodman 1980). The first of these forms is the proliferation of incorporated communities within the metropolitan area. A second form is the overlapping of city and county functions and responsibilities. The existence of special districts, public authorities, and school districts constitutes a third form of fragmentation. Finally, a fourth form is the extension of boundaries of metropolitan areas without concern for state lines.

One or more of these types of fragmentation is much in evidence at the local government level today, especially in urban areas. As of 1982, the 305 metropolitan areas in the United States contained nearly 30,000 (36%) of the nation's 82,290 units of local government (U.S. Bureau of the Census 1982).

The metropolitan area of Chicago alone had more than 1,200 units of local government within its boundaries (U.S. Bureau of the Census 1982). However, the proliferation of local governments is by no means limited to metropolitan areas but is a nationwide, statewide problem.

The average number of units of government per state in 1982 was 1,647, with 10 states having more than 3,000 units and only 4 states having fewer than 200 units (U.S. Bureau of the Census 1982). Further, the continuing proliferation of local governments shows little sign of relenting. From 1977 through 1982, the number of local government units increased by 3%, with the number of municipalities nationwide increasing by 214 to 19,076, and the number of special districts increased by 10%, including more than 28,500 units of government (U.S. Bureau of the Census 1982).

Conspicuous by its absence among the traditional definitions of fragmentation is a definition of the fiscal nature of local government. As will be discussed, many of the problems attributed to fragmentation revolve around these revenue and expenditure patterns of local government, yet none of the traditional definitions are addressed directly to such issues. The fiscal dispersion measure, the specific nature of which will be discussed later, will be focused upon such fiscal patterns.

## THE ARGUMENT FOR CENTRALIZATION

Many consider metropolitan problems primarily to be the result of fragmented government (Dye 1988). Those concerned with metropolitan reform have sought centralization for more than a half century, yet, as Schneider (1980) pointed out, urban areas continue to be "characterized by unnecessary duplicative and overlapping jurisdictions." They argue that fragmentation leads to confusion in responsibility for service provision, reductions in political scrutiny and control, political unresponsiveness, duplication of effort, inefficiencies leading to less than effective methods of providing services, higher per-unit costs, larger government outlays, units of government concerned only about their own problems, and metropolitan governments too fragmented and unstable in their policy-making to manage their money and implement their programs effectively (Ecker-Racz 1970; Schlitz and Moffitt 1971; Baird and Landon 1972; Hahn and Levine 1980; Yates 1980; Schneider 1980; Grant and Nixon 1982; Chicoine and Walzer 1985).

Local governments in metropolitan areas also suffer from the lack of a single, dominant government capable of supplying regional services and making regional decisions. Each of the autonomous units existing in metro-

politan governments acts on its own behalf and is considered incapable of resolving the diverse problems of the wider metropolitan government (Schneider 1980). According to Leach and O'Rourke (1988, 18),

> the complex jerry-built and varying structure of American subnational government restrains those governments as they seek to serve their residents. The artificiality of many local units and the many differences among them complicate individual and joint policy making and inhibit coalition building within and between both local units and state governments to the detriment of their negotiations.

Symptomatic of this is the mismatch of fiscal resources existing in most metropolitan areas (Hahn and Levine 1980). The flight of the wealthy, of businesses, and of development from the central city to suburbia and from older to younger suburbs has resulted in some suburbs having a disproportionate amount of resources and the central cities and other suburbs having a disproportionate amount of need (Schneider 1980). Those units of local government with ample resources have little desire to assist those units with inadequate resources. The units in need have nothing to offer in exchange and lack the legal authority or capabilities to expand their resources.

For some time one of the solutions offered to counteract the inability of local government units to provide areawide services and overcome jurisdictional boundaries has been the creation of special districts. The establishment of special districts or authorities to provide services on a regional basis to overcome service-delivery problems has accelerated local government fragmentation instead because of increasing proliferation of special districts for fire protection, water supply, sewers, libraries, parks, and other purposes (Leach and O'Rourke 1988).

Creating the special districts for these purposes is often criticized because local government fragmentation is increased and general-purpose governments are weakened in favor of functional specialization (Schneider 1980). Additional criticism has been directed toward these units of government because they are, as Bingham (1986, 266-67) suggested, the "least democratic and least accountable form of local government." This so-called solution has perpetuated the growth of fragmentation because more units of local government are created to deal with the inadequacies and the failings of already-existing units.

Those seeking reform of local government to overcome the existing fragmentation and the related problems desire change in two areas. First, they propose the creation of a structure capable of meeting the increasing demand and need for governmental services with an urban, areawide scope in metropolitan areas. As Leach and O'Rourke (1988, 18) have pointed out, although

the current form of local government may have met the "simpler needs of earlier times, a number of critics have concluded today many are poorly suited . . . to cope with the complex conditions of modern life." Second, those seeking reform are concerned that metropolitan areas are a single entity in a socioeconomic sense and therefore should be a single unit governmentally. According to Yates (1980, 366), government in metropolitan areas is "too fragmented and unstable in its policy-making to manage its money and implement its programs coherently." Both of the proposed changes would lead to improved public services through greater availability of economies of scale, greater coordination of services, reductions in the inequalities of financial burdens, and the legal capability to create areawide solutions to regional problems.

## THE POSITIVE SIDE OF
## NONCENTRALIZED LOCAL GOVERNMENT

The arguments offered in opposition to the reform stance perhaps are even more abundant. Although arguments have been offered that fragmentation causes increases in expenditures, researchers have linked larger numbers of noncentralized governments with lower spending patterns (Bish 1971; Russell 1979; DiLorenzo 1981). Studies of per capita spending in metropolitan areas have shown that little or no negative effects result from fragmentation and that areas that have undergone a degree of consolidation exhibit increased per capita costs·(Hawkins and Dye 1962; Cook 1973; Gustely 1977). Those who support a public-choice theory argue that the competition offered by larger numbers of governments promotes greater efficiency and responsiveness (Martin and Wagner 1978).

The public-choice theorists argue that in a noncentralized system, the existence of a number of local governments, all offering an assortment of "public goods" and various "prices," provides a "competitive and efficient government marketplace" (Tiebout 1956; Dye 1988). The competition among local governments emerges as the units of government compete for residents and businesses that will seek out the best services and prices (taxes). This competition then creates an atmosphere in which units of local government must become as efficient as possible to compete successfully.

In addition to service-related arguments, arguments are proffered that fragmentation provides benefits that are socially, politically, and psychologically generated (Williams et al. 1965). Fragmentation allows communities to maintain a separate and independent identity, which serves to create

several additional benefits such as the advantage of having many, rather than few, forums for airing political grievances, the ability to play a much more active and effective role in local politics, the establishment of a system in which a larger number of groups has the ability to influence political decision making, and provision of an atmosphere in which citizens can create a life-style that meets their own demands by insulating themselves from the demands of others (Dye 1988).

## RESOLVING THE DEBATE ABOUT
## THE EFFECTS OF FRAGMENTATION

As Schlitz and Moffitt (1971) pointed out, the preponderance of the literature pertaining to fragmentation historically has been "written by action oriented persons for a political audience more than for social science scholars." Empirical analyses that provide evidence of the presence or absence of the adverse effects of fragmentation are lacking. The following empirical analysis is designed to determine whether a significant relationship exists between local government fragmentation and the cost of government. To assist in moving the debate beyond the traditional arguments, a measure based on the expenditure patterns of local government will be added.

The decision to use a variable based on the expenditure patterns of local governments emerges from an examination of the nature of the provision of government services by units of local government. The majority of the government services by units of local government. The majority of the fragmentation-related problems discussed earlier are problems only because of the fiscal restrictions under which units of local government must function. Underlying many of the problems is a lack of the resources necessary to provide an adequate level of service. Altering the way in which revenues are expended (more or less centralized expenditure patterns) may be expected to have a significant effect upon these fragmentation-related problems. The fragmentation variable created for this analysis (the variable will be operationalized later) is focused upon expenditure patterns rather than upon the number of governments in an area as the traditional measures are.

## ANALYSIS OF THE QUESTION

From the analysis of the literature pertaining to local government fragmentation, the concerns of those associated with the intergovernmental relationships of local government, and the current state of local government

fragmentation, a question emerges: Does local government fragmentation lead to significantly higher costs of government?

In analyzing this research question, the objectives are (1) to provide an empirical examination of the assumptions made by those seeking metropolitan reform through centralization, (2) to gain a better understanding of the relationship that may exist between the cost of government and fragmentation, and (3) to provide guidance for future research in the area.

## UNIT OF ANALYSIS

The local governments within the geographic boundaries of Illinois counties serve as the basic unit of analysis in this study. Within the boundaries of each of the 102 counties in Illinois exist four additional types of local government units: municipalities (including all incorporated cities, villages, and towns), townships (actually only 85 Illinois counties have townships), special districts (Illinois statutes authorize the creation of a wide variety of special districts or authorities that are considered governmental bodies), and school districts.[1]

Illinois local government was chosen as the unit of analysis because it provides an excellent laboratory for the study of the issue at hand and because the nature of local government in Illinois makes the results somewhat generalizable. First, Illinois, with over 6,400 units of local government, exhibits each of the five traditional forms of local government: counties (102), municipalities (1,280), townships (1,434), special districts (2,602), and school districts (1,049). Second, the distribution of these government bodies is such that each of the forms of local government fragmentation described earlier is exhibited (U.S. Bureau of the Census 1982).

Third, Illinois is a state with a wide variation in the demographic nature of the local governments. It includes the second largest metropolitan area in the country, and 25 counties are classified as metropolitan counties. Some of these are experiencing the symptoms of urban growth, and others, urban decline. However, the majority of Illinois counties are rural counties with declining economies.

As in most sections of the United States, little has been done to restructure local government in Illinois, and certainly little has been done to eliminate local government fragmentation or to provide the legal capacity to overcome local government fragmentation. No structure having the authority to overcome the overlapping jurisdictions or duplication of services that exist in Illinois local government has been instituted.

### DEPENDENT VARIABLE: THE COST OF GOVERNMENT

The dependent variable in this study has been created through a factor analysis of a number of variables, using a principal-components method of extraction, related to the cost of government. The following variables were included in the factor analysis:

1. *The number of government employees per 1,000 population.* Typically, one of the largest, if not the largest, expenditures for a unit of government is personnel costs. This variable is based on the assumption that the larger the ratio of government employees to population, the greater the cost of government.
2. *The ratio of government administrative employees to government service employees.* This variable is based on the theory that as the number and size of governmental units increase so, too, do the number of administrators and layers of administration and, in turn, the cost of government.
3. *The per capita salary of government employees.* This variable has been included as an indicator of the cost of government operations; it reflects the increased costs incurred by governmental units as they increase the number of personnel on staff.
4. *The tax burden on a per capita basis.* This variable reflects the total costs of government in terms of locally generated revenues to the population living within the jurisdictional boundaries of the given governmental units.

The factor analysis was used to capture the interrelationships that exist between each of these measures. After rotating the factor matrix, all four variables loaded significantly onto a single bipolar factor at a level in excess of $\pm.3$.[2] This single factor, represented by the construct *cost of government*, became the dependent variable in the analysis.

### INDEPENDENT VARIABLES: A MEASURE OF FRAGMENTATION

To determine the relationship that exists between the level of local government fragmentation and the cost of government, three separate measures of fragmentation were used as independent variables. The first of these measures is an absolute measure of fragmentation. The absolute measure is based solely on the number of government units in a given geographic area. Traditionally, this has been the measure looked to for support by those seeking the centralization of local governments (Hawkins and Dye 1962).

A review of literature pertaining to local government fragmentation reveals that a positive relationship should be expected to exist between the absolute measure and the cost of government. Fragmentation, when defined in this manner, traditionally has been theoretically, rather than empiri-

cally, linked to the inability of governments to function efficiently and economically.

The absolute measure of fragmentation has been criticized for failing to account for population variations between geographic areas. As indicated in the literature on fragmentation, when population is controlled for, the positive relationship with the "ill effects" of fragmentation is replaced by a negative relationship (Hawkins and Dye 1962). The second measure is a relative measure of local government fragmentation that accounts for such variations. The relative measure, based on the ratio of the number of governmental units in a geographic area to the number of people in that same area (in this case the number of governmental units per 1,000 population), is expected to have a negative relationship with the cost of government. The literature indicates that although one geographic area may have more units of government than another, population variations may result in fewer, an equal number of, or more citizens being served by that governmental unit. Further, when population is controlled for, fragmentation does not increase the cost of government and actually may serve to decrease the cost.

The third measure of fragmentation, a *fiscal-dispersion measure*, was developed because of the belief that the actual level of fragmentation that exists has not been realized fully, represented properly, or measured accurately by the traditional measures. The theoretical foundation for the creation of the variable is that the effects of fragmentation, such as the duplication of services and overlapping jurisdictions, will be better represented by a variable based on the total expenditures of local government units than by a variable that represents only the actual number of units of government.

As discussed earlier, many of the claimed effects of fragmentation are strongly tied to the revenue and expenditure patterns of local government. The third measure is designed to tap into these relationships so that one can determine the impact of the expenditure patterns of local government in a geographic area on the effects attributed to fragmentation, in this case the cost of government. The fiscal-dispersion measure is based on the dispersion of expenditures of all local government units in a given geographic area.

The variable is created by first determining the level of per capita expenditures for each of the five categories of units of local government in a given geographic area. These total expenditure figures then are used to determine the standard deviation for the total expenditures for the categories of local government units within a county's geographic boundary. The standard deviation score serves as the independent variable representing the dispersion of expenditures within the geographic boundaries of the county.[3]

The higher the standard deviation, the more centralized the expenditure patterns of the local government units will be.[4]

CONTROL VARIABLES: CONTRIBUTING FACTORS

Three additional variables were included in the analysis because of their associated role with local government and local government fragmentation. These variables are the assessed valuation per capita within the geographical boundaries of the governmental unit, the median income of those living within the geographic boundaries, and the rural/urban nature of the units. Determination of the rural/urban variable was based on the ratio of agriculturally developed land to commercially and industrially developed land in the unit. Controlling for these variables is necessary because, as revealed in the literature, each of these variables has been found to have some association with the level of services offered and provided by a unit of government and the revenues and expenditures generated by those units of government.

## METHOD OF ANALYSIS

Ordinary-least-squares regression will be used to determine the significant relationships that may exist between the measures of fragmentation, the control variables, and the cost of government. The regression equations to be analyzed are as follows:

$$Model\ 1: Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$
$$Model\ 2: Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_6X_6 + e$$

where

| | | |
|---|---|---|
| $Y$ | = | Cost of government |
| $b_1X_1$ | = | Assessed value per capita |
| $b_2X_2$ | = | Rural/urban nature |
| $b_3X_3$ | = | Median income |
| $b_4X_4$ | = | Fiscal dispersion fragmentation |
| $b_5X_5$ | = | Absolute fragmentation |
| $b_6X_6$ | = | Relative fragmentation |

These equations have been designed to assist in providing an understanding of the relationships posited between the variables outlined earlier in this analysis. In addition, because of the exploratory nature of parts of this study,
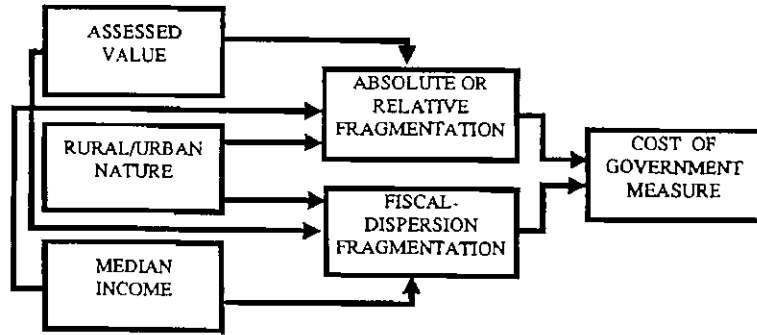
**Figure 1:   Path Model Indicating Possible Relationships Between Fragmentation Measures and the Cost of Government**

NOTE: In order to conserve space this figure depicts all three measures of fragmentation; however, two versions of the model will be examined in separate regression analyses. In the first analysis, the model will be examined using the absolute and fiscal-dispersion measures of fragmentation, and in the second analysis, the relative and fiscal-dispersion measures will be used.

a path model will be used (see Figure 1) to depict the direct and indirect relationships found in the analysis (as indicated by the standardized beta scores).

Two variations of the model in Figure 1 are used in this analysis. In the first the relationship between fragmentation and the cost of government is measured using the absolute and fiscal-dispersion measures, and the relative and the fiscal-dispersion measures are used in the second. The fiscal-dispersion measure is being used in conjunction with each of the more traditional measures because each of the traditional measures represents the number of governmental units in an area but, unlike the fiscal-dispersion measure, fails to tap into the fiscal nature of the governmental units.

## RESULTS OF THE ANALYSIS

The absolute and relative measures of fragmentation reacted with the cost-of-government variable much as the literature indicated they would. The absolute measure had a significant positive relationship with the cost of government at the .10 level ($t = 1.451$) and a direct effect of .1516, as indicated in Figure 2. The analysis indicated that for each additional unit of government in a geographic area, a .0026 corresponding increase in the cost-of-government indicator may be expected.
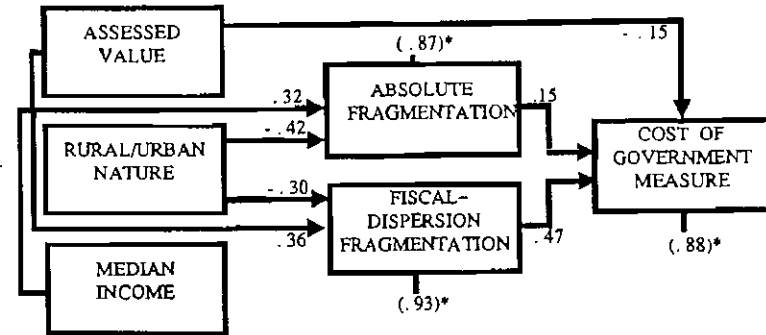


| COST OF GOVERNMENT DETERMINANTS | INDIRECT EFFECT | DIRECT EFFECT |
|---|---|---|
| Assessed Value Per Capita | .17 | .15 |
| Rural/Urban Nature | .06 + .14 | 0 |
| Median Income | .05 | 0 |
| Absolute Fragmentation | – | .15 |
| Fiscal-Dispersion Fragmentation | – | .47 |

**Figure 2:   Path Model Indicating Relationships Between Absolute and Fiscal-Dispersion Measures of Fragmentation and the Cost of Government**

*The error term has been determined through the following equation: one minus the square root of the r square of the regression equation.

When population differences among geographic areas are controlled for, as with the relative measure, the relationship between fragmentation and the cost of government becomes significantly negative ($t = -1.844$). The direct effect of the relationship is -.2098, as indicated in Figure 2. The regression analysis indicates that for each increase in the ratio representing the relative measure, a corresponding decrease of -213.221 may be expected in the cost-of-government indicator.

As previously stated, few gains have been made toward resolving the debate about the effects of local government fragmentation from the use of the absolute and relative measures of fragmentation. Having obtained the predicted conflicting results, it is clear that continuing to measure fragmentation in this traditional manner will do little to resolve the debate about the effects of fragmentation. Those who favor centralization justifiably may point to the positive relationship between the absolute measure and the cost of government for support, and similarly, those favoring a fragmented system may point toward the negative relationship that exists between the relative measure and the cost of government for support. Thus the absolute and
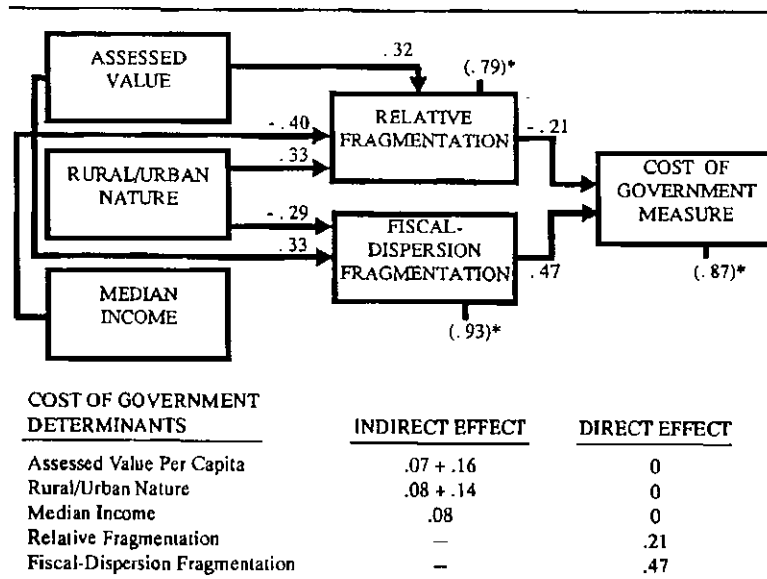
Figure 3: Path Model Indicating Relationships Between Relative and Fiscal-Dispersion Measures of Fragmentation and the Cost of Government

| COST OF GOVERNMENT DETERMINANTS | INDIRECT EFFECT | DIRECT EFFECT |
|---|---|---|
| Assessed Value Per Capita | .07 + .16 | 0 |
| Rural/Urban Nature | .08 + .14 | 0 |
| Median Income | .08 | 0 |
| Relative Fragmentation | — | .21 |
| Fiscal-Dispersion Fragmentation | — | .47 |

*The error term has been determined through the following equation: one minus the square root of the r square of the regression equation.

relative variables used in this study may serve to reinforce the futility of attempting to find resolution of the question through the analysis of the issue using traditional measures of fragmentation.

The third measure, however, may assist to bring resolution to the debate. A positive relationship that was greater than either of the relationships found with the traditional variables was found between the fiscal-dispersion measure and the cost of government in both models ($t = 4.798$ in Figure 2 and $t = 4.835$ in Figure 3). The direct relationship found between the fiscal-dispersion measure of fragmentation and the cost of government is more than three times that of the absolute measure (.4676 versus .1516) and more than twice that of the relative measure (.4675 versus −.2098). The results of the analyses of both models indicate that an increase in the fiscal-dispersion measure will be met with a corresponding increase of .0118 in the cost-of-government measure.

Regarding the control variables, only the assessed-value-per-capita variable in Figure 2 had a direct relationship with the cost of government. In both models, indirect relationships were found between the median income and the cost of government and the rural/urban nature of the unit and the cost of government. An indirect relationship also was found between the assessed value and the cost of government in the model depicted in Figure 3. The degree of each of the relationships is indicated in Figures 2 and 3. Also important are the reverse polarities of the relationships between two of the control variables and the traditional fragmentation measures. The median-income and rural/urban-nature variables had positive relationships with the absolute measure and negative relationships with the relative measure. These relationships serve to emphasize the difference that controlling for population makes when using the traditional fragmentation measures.

## A HIGHER COST OF GOVERNMENT

The question asked in this analysis was, Does local government fragmentation drive up the cost of government? As expected, analyzing the question using the traditional measures of fragmentation led to the conflicting results that have failed to assist in resolving the decades-old debate about the effects of fragmentation. However, by adding a measure that is fiscally based to these geographically based measures, a much more significant relationship was found between fragmentation and the cost of government.

The fiscal-dispersion measure appears to be a stronger measure of fragmentation than are the absolute and relative measures. Supporting the argument that costs are higher is the greater direct relationship found between the dispersion measure and the cost of government (three times that of the absolute measure and more than twice that of the relative measure). The traditional measures of fragmentation may be far more politically valuable than theoretically sound or empirically strong. The motivation for the continued use of the traditional measures appears to be their value as political rhetoric to each of the respective ideological camps, rather than their value in resolving the debate over the need for centralization.

As mentioned earlier, the traditional measures are geographically based and fail to account for a primary concern of those involved in local government: variations in the revenue and expenditure patterns among local government units. Many of the effects attributed to the issue of local government fragmentation involve such revenue and expenditure patterns of governmental units (Schlitz and Moffitt 1971; Hahn and Levine 1980; Schneider 1980; Yates 1980; Grant and Nixon 1982; Chicoine and Walzer 1985). Unlike the traditional measures, the fiscal-dispersion measure developed for this analysis is reflective of such patterns. The fiscal-dispersion measure is able to

capture the level at which expenditures are dispersed or centralized among units of local government. The strong empirical relationship found between the dispersion measure and the fragmentation-related effect of a higher cost of government provides further evidence of the theoretical strength of the measure.

Given the significant relationship between the fiscal-dispersion measure and the cost of government, the question becomes one of its value to the debate about the effects of fragmentation. First, a step forward may now possibly be taken in the debate. By turning to a measure that can capture the fiscal concerns of local government, a greater understanding of the ramifications of a fragmented system may be obtainable. As opposed to using a variable that simply reveals the number of units of government, using a fiscally generated variable can reveal much more of the individual nature of both a unit of government and a community of units.

Second, the implications of the results of this analysis are that any degree of consolidation or centralization that is designed to reduce the dispersion of expenditures among the units involved also may reduce the impact on the cost of government for those units. The strong positive relationship between the fiscal-dispersion measure and the cost of government indicates that the more dispersed (fragmented) the level of total expenditures of local government units are within a specified geographic area, the higher the costs of government are likely to be in that area. Conversely, as expenditures become more centralized in a geographic area, the cost of government in that area may be expected to decrease.

Further, such findings should serve to add support to those who have argued for various levels of centralization or consolidation of governmental units or programs in urban areas. Those seeking that manner of government reform have long argued that fragmentation creates adverse effects on the units involved. This argument may gain support from the findings of the analysis. Fragmentation, as measured by the dispersion variable, does appear to have a strong positive relationship with increases in the cost of government.

## IMPLICATIONS FOR FUTURE RESEARCH

However, the dispersion variable created for this analysis should serve only as a beginning point for a fresh look at the issue of fragmentation. The results have indicated that a fiscally based measure may better represent the fragmentation that exists at the local government level. Further exploration

of the relationship between the revenue and expenditure patterns of local governments and the effects of fragmentation appears to be in order. Although a strong relationship exists between the fiscal-dispersion measure and the cost of government, the $r$'s for the models examined (Figure 2: .23 and Figure 3: .24) indicate the need for the inclusion of other fiscally based variables that would be useful in further defining the causes of those problems attributed to fragmentation.

Analyses such as this one must serve only as a stepping stone toward determining not only the fiscal cost of fragmentation but also the policy costs. There are many who believe that the most damaging costs of fragmentation are not reflected in government spending but that the negative effects of fragmentation extend far beyond those of the cost of government (Schneider 1980). Fragmentation may be a very significant factor in policy outcomes concerning such issues as fair housing, school segregation, inequality in municipal tax burdens, actions by higher levels of government to compensate for inequality in municipal tax burdens or resources, and a number of other policy areas (Schneider 1980). Because of the possible existence of such relationships, fragmentation should be examined in terms of social and political values, as well as in terms of fiscal and service consequences.

The analysis presented here should be considered only a first step toward redefining and reexamining the decades-old problem of fragmentation and its ill effects. Although the direction taken has been toward a more fiscally defined argument, future analyses should not be limited to fiscal concerns. When the arguments over the ill effects of fragmentation became limited to one concern—geographically generated numbers—the debate became deadlocked to the point of providing no assistance in the generation of solutions. My hope is that this analysis may serve as a base for future analyses of the issue—analyses designed to circumvent the ideologically driven arguments that have served to inhibit the resolution of many problems plaguing local governments and to provide support for the decision making of local government leaders today and in the future.

## NOTES

1. The decision to include school districts in this analysis was based on several factors: The school districts in Illinois are governed by elected boards, all of the boards have the power to levy taxes and issue bonds, and all areas of the state are included in the jurisdictional boundaries of school districts. Each of these school-district characteristics shares commonality with all or some of the other units of local government.

2. The factor scores for each of the variables are as follows:

| | |
|---|---|
| Government employees per 1,000 population | .69258 |
| Ratio of administrative to service employees | -.37089 |
| Per capita salary of government employees | .95888 |
| Tax burden per capita | .67476 |

3. Dispersion measures may be used to determine how closely or remotely data values are distributed around the most common, middle, or central value. In designing this measure of fragmentation, the standard deviation measure of dispersion was chosen because of its distinct advantages as a measure of dispersion and because of the disadvantages of the other measures of dispersion (see Blalock [1979] for a more thorough discussion of this issue). The standard deviation is considered the "most useful and frequently used" of the dispersion measures, as well as the single "best" measure of dispersion (Blalock 1979).

4. The greater the spread around the mean, the greater the standard deviation will be. The closer the cases are to the mean, the lower the standard deviation and the more evenly distributed the expenditures. Therefore, in this analysis an increase in the standard deviation will indicate an increase in the degree of fragmentation.

## REFERENCES

Baird, R. K., and J. H. Landon. 1972. Political fragmentation, income distribution and the demand for government services. *Nebraska Journal of Economics and Business* 11 (Autumn): 171-84.

Bingham, R. D. 1986. *State and local government in an urban society.* New York: Random House.

Bish, R. L. 1971. *The public economy of metropolitan areas.* Chicago: Markham/Rand McNally.

Blalock, H. M., Jr. 1979. *Social statistics.* New York: McGraw-Hill.

Campbell, A. K., and R. W. Bahl, eds. 1976. *State and local governments: The political economy of reform.* New York: Free Press.

Chicoine, D. L., and N. Walzer. 1985. *Governmental structure and local public finance.* Boston: Oelgeschlager, Gunn, & Hain.

Cook, G.C.A. 1973. Effect of metropolitan government on resource allocation: The case of education in Toronto. *National Tax Journal* 26 (December): 585-90.

DiLorenzo, T. L. 1981. Economic competition and political competition: An empirical note. *Public Choice* 40: 203-9.

Dye, T. R. 1988. *Politics in states and communities.* Englewood Cliffs, NJ: Prentice-Hall.

Ecker-Racz, L. 1970. *The politics and economies of state-local finance.* Englewood Cliffs, NJ: Prentice-Hall.

Goodman, J. S. 1980. *The dynamics of urban growth and politics.* New York: Macmillan.

Grant, D. R., and H. C. Nixon. 1982. *State and local government in America.* Boston: Allyn & Bacon.

Gustely, R. D. 1977. The allocational and distributional impacts of governmental consolidation: The Dade County experience. *Urban Affairs Quarterly* 12 (March): 349-64.

Hahn, H., and C. Levine, eds. 1980. *Urban politics: Past, present and future.* New York: Longman.

Hawkins, B. W., and T. R. Dye. 1962. Metropolitan fragmentation: A research note. *American Behavioral Scientist* 5 (May): 11-17.

Leach, R. H., and T. G. O'Rourke. 1988. *State and local government: The third century of federalism.* Englewood Cliffs, NJ: Prentice-Hall.

Martin, D. T., and R. E. Wagner. 1978. The institutional framework for municipal incorporation: An economic analysis of local agency formation in California. *Journal of Law and Economics* 21 (October): 409-22.

Russell, C., ed. 1979. *Collective decision making: Applications from public choice theory.* Baltimore, MD: Johns Hopkins Univ. Press.

Schlitz, T., and W. Moffitt. 1971. Inner city/outer-city relationships in metropolitan areas: A biographical essay. *Urban Affairs Quarterly* 7 (September): 88-92.

Schneider, M. 1980. *Suburban growth: Policy and process.* Brunswick, OH: King's Court Communications.

Tiebout, C. 1956. A pure theory of local expenditures. *Journal of Political Economy* 64 (October): 416-24.

U.S. Bureau of the Census. 1982. *Census of governments: Compendium of governments.* Washington, DC: Government Printing Office.

Williams, O. P., H. Herman, C. S. Liebman, and T. R. Dye. 1965. *Suburban differences and metropolitan policies.* Philadelphia: Univ. of Pennsylvania Press.

Yates, D. 1980. The future of urban government. In *Urban politics: Past, present, and future,* edited by H. Hahn and C. Levine, 365-74. New York: Longman.

*Drew A. Dolan is currently Assistant Professor in the School of Public Affairs and Administration at Western Michigan University. In addition to local government centralization, his areas of research include fiscal stress in county governments, structural alternatives for county governments, and structural changes occurring in rural local governments.*