

Staff Paper P94-7

April 1994

STAFF PAPER SERIES

An Overview of Factors Affecting the Size of Local Government

by

Michael A. Trueblood and Beth Walter Honadle

DEPARTMENT OF AGRICULTURAL AND APPLIED ECONOMICS

COLLEGE OF AGRICULTURE

UNIVERSITY OF MINNESOTA

AN OVERVIEW OF FACTORS AFFECTING THE SIZE OF LOCAL GOVERNMENT

By

Michael A. Trueblood

and

Beth Walter Honadle

Michael Trueblood is Graduate Research Assistant and Beth Honadle is Professor and State and Local Government Extension Economist in the Department of Agricultural and Applied Economics at the University of Minnesota.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status or sexual orientation.

Staff papers are published without formal review within the Department of Agricultural and Applied Economics.

Copyright (c) 1994 by Michael Trueblood and Beth Walter Honadle. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Information on other titles in this series may be obtained from: Waite Library, University of Minnesota, Dept. of Agricultural and Applied Economics, 232 Classroom Office Building, 1994 Buford Ave., St. Paul, MN 55108, USA.

CONTENTS

	<u>Page</u>
I - Introduction	1
Literature Searched	2
Definitions	2
II - Theoretical Schools of Thought on the Optimal Size of Local Government	3
Traditional Reform School	3
Public Choice School	4
Neo-Marxist School	7
III - Current Demographic Trends and Changes in Local Government Structure	8
Growth in Annexations, Incorporations, and Detachments	8
Changes in Local Service Delivery	8
Trends in Regional Governance	12
IV - Economies of Size Literature	13
V - Managerial Approaches To Efficient Local Government Size	15
Cost-Revenue Analysis	15
Managerial Efficiency Assessments	16
Regional Coordination as a Development and Planning Strategy	17
VI - Legal Factors Affecting Size of Local Government	18
Annexations	18
Incorporations	21
VII - Political Factors Affecting Size of Local Government	22
VIII - Conclusion	24
Summary of Findings	24
Directions for Future Research	26
IX - References	27
X - Appendix 1 - Related References Not Cited	33

AN OVERVIEW OF FACTORS AFFECTING THE SIZE OF LOCAL GOVERNMENT

I - Introduction

In his recent book, Cities Without Suburbs, former Albuquerque mayor David Rusk suggests that problems relating to poverty will never be solved as long as there are cities surrounded by suburbs where residents do not have to be financially or socially accountable for the problems occurring in cities (Rusk, 1993). Thus Mayor Rusk radically suggests that the only way to address poverty problems is to do away with city and suburban boundaries. In a different kind of radical proposal, Minnesota state Representative David Bishop has submitted legislation to the state legislature in which the state would reorganize the state's 87 counties into 19 larger counties (Whereatt, 1993). What these two radical proposals have in common is that they would restructure and change the size of local governments. This is an issue that has a long history: what is the "optimal" or most appropriate size of local government?

This paper will review many factors affecting the size of local government. These factors include: current demographic trends and changes in alternative service delivery arrangements, theoretical schools of thought, evidence on economies of size, whether current local governments are managed efficiently, and legal and political factors. This research will review many hotly debated questions, such as:

- Why do local governments seek to annex unincorporated land and population (and why residents sometimes go along with the plans and other times fiercely resist)?
- Is a consolidated local government more efficient in providing services and better at planning and zoning, or is it an inefficient monopolistic bureaucracy that seeks to maximize its taxing and spending powers?
- Could taxes be lowered or services improved by having an efficiently run government?
- How do state laws affect annexation and incorporation activity?
- Why do so many consolidation plans get rejected by voters?
- Is racism a motivating factor behind plans to consolidate cities and suburbs (that is, to dilute minority political representation)?

These are only a few of the questions that this paper will review.

1 - Literature Searched. The goal of this paper is to review the most recent literature on factors affecting the size of local government. Accordingly, the initial literature search focused on the 1978 - present period, although many older articles were subsequently incorporated into this paper as necessary.¹ The literature review focuses primarily on academic sources found in such databases as PAIS Decade, EconLit, SocSciInd, WorldCat, SocioAbs, NewsAbs, Article1st, and so on.² As much as possible, we avoided the literature on public schools (a major local function) since it would detract from our focus on general purpose units of government.

2 - Definitions. Many terms will be used repeatedly throughout this paper. We will define these terms before proceeding.³

Annexation - An existing community expands its boundaries to include previously unincorporated land.

Consolidation (merger) - Two or more existing communities join together to form a single community.

Detachment - Community boundaries are redrawn to exclude some land.

Incorporation - A new community forms on previously unincorporated land.

Municipality - A self-governing town or district.

¹ The literature goes back many decades, so we do not claim to do an exhaustive survey. Many of the debates reviewed in this paper involve older, classic articles and monographs, which had to be located and read.

² This literature review does not include special state government and consulting firms' reports, although there appear to be many such reports, which are difficult to locate in a systematic way.

³ These definitions are quoted from Epple and Romer (1989), p. 309.

II - Theoretical Schools of Thought on the Optimal Size of Local Government

The discussion below reviews alternative schools of thought about a host of issues that center around the normative question of what the optimal size of government "should" be. The debate has been very lively, to say the least, if not bitter and acrimonious.

1 - Traditional Reform School. The earliest school of thought is sometimes referred to as the "Traditional," "Reform," or "Traditional Reform" school of thought. It has been given this designation since it has been around for nearly a century and its advocates have sought to reform, among other things, the seemingly natural tendency of American cities to create suburbs, which leads to so-called "fragmented" government (e.g., Studenski, 1930; Jones, 1942).⁴ White (1975) and Baker, Ostrom, and Goehlert (1979) have compiled annotated bibliographies of this school of thought.

Two reports by the Committee for Economic Development (1966, 1970) are frequently cited in the literature. The following statements are representative of the reports:

"The structure of government in metropolitan areas has a profound impact on the daily lives of metropolitan citizens. But, as this Committee has long recognized, the present arrangement of overlapping local units is not serving the people well. Citizens in metropolitan areas are confronted by a confusing maze of many -- possibly a dozen -- jurisdictions, each with its own bureaucratic labyrinth. This baffling array of local units has made it difficult for citizens -- the disadvantaged particularly -- to gain access to public services and to acquire a voice in decision-making." (*Reshaping Government in Metropolitan Areas*, p. 10).

"The bewildering multiplicity of small, piecemeal, duplicative, overlapping local jurisdictions cannot cope with the staggering difficulties encountered in managing modern urban affairs. The fiscal effects of duplicative suburban separatism create great difficulties in provision of costly central city services benefitting the whole urbanized area. If local governments are to function effectively in metropolitan areas, they must have sufficient size and authority to plan, administer, and provide significant financial support for solutions to area-wide

⁴ The reform movement primarily sought to avoid local party "machine" politics. Therefore, the three main reform goals were: 1) adopting a council-manager form of government; 2) adopting nonpartisan at-large elections; and 3) creating shorter and less-confusing ballots (Bingham and Hedge, 1991).

problems." (*Modernizing Local Government*, p. 44)

Fields (1983, p. 23) has nicely summarized five of the main propositions favoring consolidated local government:

1. A consolidated government is more efficient and effective than several smaller governments. Costs can be held down and perhaps reduced through the elimination of duplicative services, personnel, and equipment. Further, the larger unit may be able to take advantage of "economies of scale" or lower per-unit costs of government services.
2. Consolidation helps eliminates spillovers or externalities. Many government services benefit citizens in adjoining areas who neither pay for the service nor share in the effort involved in its delivery. These "spillovers" are eliminated if the taxing jurisdiction is coterminous with the service jurisdiction. While the complete elimination of spillovers is probably impossible, the larger jurisdiction is better able to avoid the problem than are several smaller ones.
3. The environment for decision making and long-range planning is improved. A single government in an area is better able to coordinate policies and decisions than are several governments.
4. Consolidated governments, with only one governing body, are easier for the citizens to understand and use. Decision making and service responsibilities are more clearly defined and understood.
5. Consolidation matches area needs with area resources. Tax burdens within a community are equalized through the creation of a government that more clearly corresponds to area needs.

2 - Public Choice School. The Traditional Reform school of thought has come under attack ever since the highly influential article published by Charles Tiebout, "A Pure Theory of Local Expenditure" (Tiebout, 1956).⁵ In this article, Tiebout defended the status quo tendency towards "fragmentation" on the grounds that consolidated government is analogous to an economic monopoly that can exploit rents, whereas "fragmentation" is analogous to a perfectly competitive economic model that forces local governments to keep taxes low, provide efficient services, and allow individuals to express their preferences for different levels of government services by "voting with their feet." This theme has

⁵ It is an interesting irony that the Traditional Reform school seems to have lost its popularity in the 1960's as liberal groups became very dissatisfied with the unresponsiveness of large governments in major urban areas and demanded more local (neighborhood) autonomy. Naturally, the Public Choice school has since benefitted from this dissatisfaction. Bish and Ostrom (1973) divide the reform movement into two classes: the Old Reform Tradition (Consolidation) and New Reform Tradition (Community Control).

since been developed by many researchers.

Perhaps one of the better theoretical explanations of the Public Choice view is provided by Ostrom, Tiebout, and Warren (1961). They first discussed the nature of public goods, including the problems of externalities ("spillover effects") and excludability ("packageability"). They also made the important distinction between directly *producing* and *providing* local governmental service (the latter means being responsible for services, which allows for interlocal governmental or private sector contracts). Providing local governmental service allows the government to separate supply and demand functions and eliminate inherent problems when a local agency is responsible for both functions.⁶ They argue that there are trade-offs between competing criteria for appropriate government size: control, efficiency, political representation, and local self-determination. They believed that consolidated governments may be effective in providing some large scale services, but ineffective in providing other services that are more conducive to smaller units. For local governments to internalize externalities, they argued that different services may require different boundaries, which may appear to be "chaotic" but economically effective. Alternatively, externalities may be cooperatively addressed through regional governments.

The last 3 decades have seen a proliferation of Public Choice literature testing various aspects of this theory. For example, an important and recurring empirical question is whether multiple governments keep per capita taxes and expenditures down, or conversely, does a consolidated government act monopolistically and raise per capita taxes and expenditures? Since 1985, 4 studies have examined this issue of the "Leviathan," with the results inconclusive.⁷ The Leviathan hypothesis posits that

⁶ The authors elaborated on the benefits from the groundbreaking and now famous contract for services between Lakewood, California and Los Angeles County, which began in 1954.

⁷ The Public Choice literature hypothesizes that bureaucrats seek to maximize their budgets and hence their power, perhaps insatiably. Ostrom, Tiebout, and Warren (1961) referred to large government as "Gargantua," while Brennan and Buchanan (1977) re-popularized the phrase "Leviathan," a reference to Machiavelli's classic treatise on the nature of political power.

there is a negative relationship between the number of competing local governments and the level of government expenditures. Oates (1985), who used both domestic and international data, and Forbes and Zampelli (1989), who used county level data, did not find any support for this hypothesis. On the other hand, Zax (1989), who used county level data, and Eberts and Gronberg (1990), who used metropolitan level data, *did* find support for the Leviathan hypothesis.⁸

In an effort to refute Public Choice theory, Lyons and Lowery (1989) challenged five Public Choice propositions. Kentucky residents were directly surveyed in Louisville-Jefferson County and Lexington-Fayette County, two metropolitan areas with very similar size and attributes. An important difference between the two areas is that Louisville-Jefferson County represents a typical "fragmented" region, while Lexington-Fayette County represents a consolidated government (the city of Lexington and Fayette County had consolidated 15 years earlier). This represented an ideal setting to poll residents directly and check for statistically significant differences in sample means between the two populations on important questions. Lyons and Lowery found that: 1) residents in small governments were not better informed about local taxes and services than residents from the consolidated government; 2) residents in small governments did not feel that their local officials were responsive to their needs; 3) residents in small governments were not more likely to participate in local government; 4) residents in small governments were not more satisfied with local services and local officials than residents in consolidated government; and 5) there is not a widely dispersed level of satisfaction or dissatisfaction among residents in small governments (who continually "vote with their feet") compared to a consolidated region. The authors concede that this is only one study, which may be unique to Kentucky. Nonetheless, these relatively recent findings provide an interesting challenge to Public Choice theory.

⁸ While economists have approached the Leviathan hypothesis through strictly governmental size and tax considerations, political scientists have also addressed this topic with consideration given to demographics, governmental structure, and functional responsibilities (see, for example, Lineberry and Fowler (1967), Dye and Garcia (1978), and Stein (1982)).

3 - Neo-Marxist School. The Neo-Marxist school of thought is less interested in determining what the optimal size of local government should be and more interested in explaining patterns of local governmental decision-making as it relates to local economic development.

Markusen (1976) and Cox and Nartowicz (1980) have stimulated much new research. After reviewing the similarities between the Traditional Reform ("liberal") and Public Choice schools (for example, concerns over unchecked government power), Cox and Nartowicz make the observation:

Yet from another angle what strikes one is not so much the differences between public choice theorists and their liberal antagonists...Rather it is the broad similarities of assumption that circumscribe their vision. Both public choice theory and liberal theory accept that consumption is the basic issue...In contrast a radical perspective attempts to situate institutional forms, such as the decentralization of local governments, with respect to modes of production and to the contradictions consequent to the reproduction and development of modes of production. Production rather than consumption becomes a focus and private property becomes a juridical relation subject to explanation rather than to mere assumption. (pp. 201-202)

Thus Cox and Nartowicz contend that business interests (particularly the "property capitals") seek to reproduce themselves by pressuring local governments to develop public infrastructure, which to some extent helps to explain the decentralization or fragmentation of local governments, since business leaders can play local governments off against each other.

Fleischmann (1986a, 1986b) has recently tested the claims of the Public Choice and Neo-Marxist schools regarding annexation. He found that a new paradigm needs to be formulated synthesizing these two models, since neither model is completely satisfactory in explaining observed behavior. He argued that the Public Choice school focuses too much on the consumer behavior of residents who "vote with their feet" and ignores the producer sector, while the Neo-Marxist school focuses too much on the producer sector and tends to ignore the role of consumers.

III - Current Demographic Trends and Changes in Local Government Structure

1 - Growth in Annexations, Incorporations, and Detachments. Most of the population growth in the last decade in the United States has taken place in the South and the West. According to the *1992 United States Statistical Abstract*, over the 1980-1990 decade, the Northeast region grew 3.4 percent, the Midwest region grew 1.4 percent, the South grew 13.2 percent, and the West grew 23.9 percent. Much of the population growth occurred in metropolitan areas, which can be misleading in the sense that changes in metropolitan population are really due to newly annexed land. Table 1 summarizes annexation activity by state for the 1980-1989 period as well as detachment activity, which occurs much less frequently. Not shown are data on incorporation activity, the creation of new cities. Factors affecting annexation and incorporation activity are the subject of much research, while research on detachment is limited, with the subject being somewhat of a mystery.⁹

2 - Changes in Local Service Delivery. Traditionally, local governments have either directly or indirectly provided services in education, public safety, public works, public utilities, health and human services, parks and recreation, cultural programs, and other support functions. However, the way in which local governments finance and deliver these traditional services has been changing, especially since the 1980's when the Reagan Administration changed the way in which the federal government provides assistance to state and local governments. The 1981 Omnibus Budget Reconciliation Act (OBRA) combined 57 categorical grant programs into 9 block grants and reduced the total funding for grants-in-aid. The only grant program area that received increased funding was transportation.

With the cuts, many local governments came under pressure to cut services, raise taxes, increase user fees and charges, or provide services more efficiently. To monitor how local governments were

⁹ We found only two articles on detachment in our literature search. Epple and Romer (1989) were interested in testing a Public Choice theory of whether boundaries are flexible or not (that is, could a voter "vote with his/her deed" if he/she is dissatisfied with inefficient local services?). Knaap and Juelich (1992) were interested in examining the fiscal impact of detachments.

coping with the cuts, the United States Advisory Commission on Intergovernmental Relations (ACIR) and the International City Management Association (ICMA) jointly conducted a mail survey of 3,140 cities and 1,067 counties in 1983 (the response rate was 49.7 percent from cities, 52.7 percent from counties) (ACIR, 1983).

About 52 percent of cities and counties engaged in intergovernmental service contracts; two-thirds of these contracts were written contracts, while one-third were unwritten agreements. About 55 percent of cities and counties engaged in joint service agreements. Most of the contracts and service agreements were done by large governmental units. The trends for cities showed a surprising decline in contracts (59 percent in 1972 to 52 percent in 1983), but a sharp increase in joint service agreements (35 percent to 55 percent). The top 5 contracting areas were for jails, sewage disposal, animal control, tax assessing, and solid waste disposal; the top 5 joint service agreements were for libraries, police and fire communications, fire prevention, sewage disposal, and jails. Both for contracts and service agreements, local officials cited economies of scale as the most important reason why they entered the arrangements, followed by (in descending order) the need for larger areas, elimination of duplication, and then lack of facilities.

The ACIR-ICMA survey also attempted to review the laws governing interlocal service contracting and joint service agreements, which are more difficult to quantify. They found that all 50 states authorize local jurisdictions to enter into general cooperative ("joint power") agreements; 45 states specifically authorize intergovernmental contracting for purchasing services ("intergovernmental contract powers") (up from 30 in the 1974 survey); and 26 states had laws authorizing contracting with private sector firms.¹⁰

¹⁰ It is likely that these trends have continued, so that these numbers are conservative by today's standards.

The ACIR-ICMA survey also looked at the transferring of services *from* cities and county governments to other government units, and transferring of services *to* cities and counties. Cities and counties showed a decline from 31 percent in 1975 to 25 percent in 1983 in transferring away services. The most frequently transferred away services were public health, taxation, solid waste collection or disposal, law enforcement, and transportation.

The ICMA report (1983) also looked at the growth in private sector delivery of public services, reporting the results of Hatry (1983) and Valente and Manchester (1984). Hatry lists 11 alternatives to direct public service delivery: contracting out/purchasing of service, franchises, grants and subsidies, vouchers, volunteers, self-help, use of regulatory and taxing authority, encouragement of private organizations to take over an activity, "demarketing" to reduce demand for a service, obtaining temporary help from private firms, and user fees to adjust demand. After making many qualifications in comparing two somewhat dissimilar surveys (1972 and 1982), the ACIR shows that there appears to have been an increase in contracting out to the private sector by city governments (in 22 out of 23 categories, the number of cities contracting out for services increased between 1972 and 1982).

Stein (1993) has recently reported the results of a 1988 ICMA survey that was very similar to the 1982 survey. Stein compared the 1982 and 1988 responses of 667 cities for 64 functional activities. He found that for all cities, direct production and distribution of services had increased slightly from 57 to 60 percent, although for cities over 250,000 the percentage declined from 56 to 46 percent. Service contracting had declined slightly from 30 to 28 percent, while other alternatives (vouchers, subsidies, etc.) had remained fairly constant at less than 15 percent.

3 - Trends in Regional Governance. Regional governance plays an important part in Public Choice theory. Public Choice advocates argue, among other things, that many small governments are more responsive to voters and are generally more efficient than larger "monopolistic" governments. They

argue that the issues of externalities and planning can be addressed through regional councils in a multi-tiered governmental system.

The trends in regional councils has recently been examined by Atkins and Wilson-Gentry (1992) and Atkins (1993), which are summarized below. Quantitatively, the number of regional councils went from virtual nonexistence in the 1950's to a peak of 669 regional councils in 1976; as of 1991, there were 529 regional councils. At their peak in 1977, 75 percent of their budgets came from the federal government, whereas in 1988 the federal share was down to 45 percent. The number of federal programs directly and indirectly involving regional councils numbered 48; today there are only 13 programs from the 1970's still funded.

To understand these quantitative facts, it is important to understand the changes in the political environment over the years. Initially, regional council officials were careful not to alienate local officials who felt threatened by the presence of regional officials. In the 1960's and 1970's, the power of regional councils increased as the federal government began to address regional problems and directly authorized regional councils to implement numerous federal programs. Then in the 1980's during the Reagan years, under the banner of eliminating unnecessary multiple layers of government, Congress passed the 1981 Omnibus Budget Reconciliation Act. The responsibility for implementing these grants has since rested with the states. In the face of decreased federal funding, the states have funded regional councils in an uneven manner; some councils have ceased functioning altogether. The evidence shows that most councils have seen their funding levels reduced (resulting in smaller staffs) and have modified their missions.

Atkins and Wilson-Gentry (1992, p. 466 and p. 485) describe the old and new "etiquette" for regional council officials. The old etiquette used to be:

- stay with the feds;
- maintain a low profile;

- provide comprehensive planning assistance only;
- don't compete with the public sector governments; and
- don't compete with the private sector businesses.

The new etiquette is:

- go with the states;
- market your agency;
- pick a few things to do well;
- invite competition; and
- be innovative.

IV - Economies of Size Literature

This section directly addresses the fundamental issue posed by the title of the paper: is there an optimal size of local government? Fox's (1980) research demonstrates that this is an area with a very long history, with written reports at least dating to 1902. Researchers have focused on an optimal size of local government for all services, but recently most researchers have examined whether there is an optimal size for particular services. This latter approach dovetails with the Public Choice school of thought, since the Public Choice school argues that if there are economies of size to be exploited for particular services, then it is better for a local government to contract out for those services than to merge with another local government, in which all services are provided together (arguably inefficiently).

The hypothesis of the economies of size literature is that there is a "U" shaped average cost curve. That is, as services are provided to larger populations, per capita expenditures first decline, reach a

Highlights from the Fox et al. Annotated Bibliography of the Economies of Size Literature

Fox et al. (1979) have compiled an annotated bibliography of the optimal size of government, both in aggregate and by sector. Fox (1980) then analyzed and synthesized the findings from the initial literature search. It appears that economies of size depend upon the particular local circumstances, even for the same service. The following section selectively highlights some of the findings by sector from Fox et al.:

Fire protection. Hitzhusen (1972) found economies of size with populations over 10,000, while Will (1965) found a U-shaped cost curve with minimum costs at around 300,000.

Police protection. Douglas and Tweeten (1971) found a U-shaped cost curve with a minimum between 250,000 and 500,000, while Beaton (1974) found economies of size only for very small cities (600 to 2,000). Ostrom and Parks (1973) found bigger cities had higher per capita expenditures.

Hospitals. Carr and Feldstein (1967) found a U-shaped cost curve with minimum costs at 190 beds, while Cohen (1967, 1970) found a minimum between 540 to 790 beds in one study and a minimum of 160 to 170 beds in another study. On the other hand, Ingbar, Whitney, and Taylor (1966) did not find any evidence for economies of size and Lave and Lave (1970) found very slight (if any) economies of size.

Refuse collection. Savas and Stevens (1976) and Stevens (1977, 1978) all found economies of size up to 50,000, after which costs were constant. Hirsch (1965) and Kemper and Quigley (1976) did not observe any economies of size, while Kitchen (1976) found diseconomies until a very large population was reached.

Water and sewer utilities. Cosgrove and Hushak (1972) found economies of size up to 50,000. Bourcier and Forst (1967) and Johnson and Hobgood (1975) found that the average cost curve was U-shaped, while the U.S. Department of Health, Education, and Welfare (1964) and Young and Carlson (1975) suggest that the average cost is continually downward sloping (which is characteristic of economic monopolies).

Electricity. Huettner and Landon (1978) found the average cost curve is U-shaped, while Johnston (1952) found that the average cost initially declines at small output levels and then is constant. Barzel (1963), Christensen and Greene (1976), Dhrymes and Kurz (1964), and Lomax (1952) all found economies of size. Wallace and Junk (1970) found that small municipalities would have big savings by purchasing power from large systems rather than producing power themselves.

Roads. Leshner and Mapp (1974) found a U-shaped average cost curve with a minimum at 465 miles per county, while Swanson (1956) found a continually declining average cost curve for counties, where the largest county had 600 miles.

minimum, and then begin to increase again.¹¹ Most studies have used regression techniques to identify and estimate the appropriate independent variables, and then estimate the minimum average cost point (optimal population size). Since the Fox et al. report, there has at least one important article addressing economies of size. Benton and Gamble (1984) tested the claim of the Traditional Reform school that consolidation would lead to economies of size so that one could expect lower per capita taxes and expenditures. In fact, what they found was that both per capita taxes and expenditures increased after the city-county consolidation of Jacksonville, Florida (one of the few areas for which a lengthy time-series is available). They attributed this phenomenon to two possible reasons: 1) the quantity and quality of services increased after the consolidation (this is a point often overlooked in the theoretical discussions); and 2) the political leaders who lost their jobs as a result of the consolidation voted big pay increases to local service providers just before they left office in an apparent move to spite the consolidation.

V - Managerial Approaches to Efficient Local Government Size

Some literature addresses issues of government size from organizational and managerial points of view. This section looks at some of these approaches.

1-Cost Revenue Analysis. Breen, Costa, and Hendon (1986) approach annexation with a variation of cost-benefit analysis, cost-revenue analysis. They used Middlefield, Ohio as a real example of how a town can determine if it should annex a nearby development. Using very specific assumptions and techniques, they showed that annexation should take place if revenues exceed costs over the long term.

¹¹ Technically, economic textbooks make the distinction between economies of scale and economies of size, even though the terms are often used interchangeably. Debertin (1987), for example, argues that economies of scale is defined as a proportionate change in output due to a proportionate change in *all* inputs, while economies of size is defined as a proportionate change in output due to a change in a single input with other inputs held fixed at previous levels. In this study, we believe that "economies of size" is the more appropriate phrase, since what is usually envisioned is the effect of population size on per capita expenditures when some unit of capital is held constant.

The authors argue that the main considerations involved are wanting a new tax base, but not wanting to get stuck with an unusually high public debt.

In a similar vein, Bunch and Strauss (1992) analyzed nine small towns near Pittsburgh, Pennsylvania. Though not explicitly a cost-revenue analysis, the authors made several realistic assumptions about each of the nine towns and simulated the effects of a consolidation of some of the towns. They also altered some of the assumptions to consider how that would affect the outcomes. There are two interesting features of this study: 1) it looks at consolidation issues for small towns (under 20,000), for which there is not much literature; and 2) many of the suggested managerial reforms (such as raising user fees, using volunteer firefighters, etc.) were actually adopted by the towns as a result of the study, but none of the towns consolidated and continued to incur annual operating fiscal deficits.

2-Managerial Efficiency Assessments. Another managerial issue is whether services are being provided efficiently. The implication of inefficient service provision is that economies of size may be mistaken for inefficient service so that decision makers are basing (or have based) their decisions upon incorrect information. This is the conclusion that Deller and Rudnicki (1992) reached after studying the Maine school system. The methodology involves a sophisticated "production frontier" approach, in which local practices are indexed against the most efficient known practices. Deller and Rudnicki found that there were substantial inefficiencies in the Maine school system.

In a similar study, Deller and Nelson (1991) used a mathematical programming approach to analyze managerial efficiency in road production. Using 446 observations from Minnesota, Wisconsin, and Illinois, the authors concluded that larger jurisdictions would be more efficient than the current jurisdictions for the case of road production. Deller and Nelson conclude that local governments might be better off providing (contracting out) road services rather than producing the services themselves.

Regional Coordination as a Development and Planning Strategy. The Traditional Reform advocates have argued that planning is "easier" or "better" with a large consolidated local government, while Public Choice advocates have argued that the same benefits can be obtained with a multitier governmental system that does not sacrifice local autonomy. While the two schools disagree over which system is best, they do agree that regional planning and coordination may lead to benefits in economic development.

Carolan (1990) uses environmental planning (a classic example) to discuss the advantages of regional coordination. Carolan argues that there are five benefits of regional environmental planning:

1) consistent laws; 2) efficient resource management; 3) shared liabilities; 4) increased political power; and 5) easier public education. A Public Choice advocate would likely agree with the consistency and liability arguments, debate the efficiency argument, and have no opinion (or a negative opinion) about the political power and education arguments.

Hawkins, Ward, and Becker (1991) seem to embrace the Public Choice school of thought, yet see no inconsistency with advocating local government consolidation as an economic development strategy. They argue consolidation should depend upon local circumstances, but that the benefits may include: consistent zoning laws, an enhanced image that attracts new investors, wider use of revenue, and increased financial authority. Consolidation may also make communities available for special grants and loans. At the very least, the authors argue that local leaders should consider the role of regional councils of governments. MIS (1992) gives excellent examples of how this approach can work, with perhaps the most notable example being the attraction of the Diamond-Star Motors (a joint venture of Chrysler and Mitsubishi) automobile factory to a rural area in Illinois.

Breckenfeld (1982) described a very unusual case where a large corporation, Kellogg, Inc., threatened to move its corporate headquarters from Battle Creek, Michigan unless Battle Creek City and Battle

Creek Township consolidated. The corporation argued that it could not attract the employees it wanted because of the lack of development caused by squabbling between the City and Township. The consolidation proposal was overwhelmingly passed, but many residents resented the corporation giving an ultimatum. This appears to be a rare case of a private sector company overtly influencing a consolidation decision.

VI - Legal Factors Affecting Size of Local Government

An important question is the effect of annexation and consolidation laws upon annexation and incorporation activity. The interaction between incorporation and annexation activity are opposite sides of the same coin. Local city governments pursue annexations for reasons that are perceived as being motivated by a desire to secure a wealthy suburban tax base; incorporations are often undertaken "defensively" to prevent being taken over by a large city (usually due to a perceived threat from the suburban perspective). Cities are perceived to have more social problems and require higher taxes than suburban communities. Many researchers believe easy annexation laws (difficult incorporation laws) benefit central city governments, while difficult annexation laws (easy incorporation laws) benefit suburban communities.

Annexations. An early classic article on the effects of the law on annexation activity is by Dye (1964). Dye subjectively quantified the annexation laws on a 1 to 10 scale (1 difficult, 10 easy) for 213 cities and then correlated the laws with annexation activity and other variables. Dye did *not* find any correlation between the laws and annexation activity. Dye found that three other variables were more closely correlated with annexation activity: 1) manager governments (positive relationship); 2) the degree of a middle class in central cities (negative relationship); and 3) the age of a city (negative relationship; that is, the older the city, the less likely to annex new land).

Since the Dye article, there have been at least four important studies on the effects of the law upon annexation activity, which have yielded somewhat conflicting results. These more recent studies have relied upon the so-called Sengstock methodology, which has been popular among legal scholars for some time but only recently used by other social scientists. Sengstock (1960) classified all the states' annexation laws into 5 categories as explained below:¹²

1. *Legislation Determination (LD)*. The state legislature, lacking the desire or ability to delegate such responsibilities, deliberates each annexation proposal.
2. *Popular Determination (PD)*. Annexation decisions are made by local "residents" through referendum or petition; depending on the statute, "residents may be defined as the municipal electorate, the owners and inhabitants of the annexed areas, and/or the electorate of the diminished territory.
3. *Municipal Determination (MD)*. The extension of municipal boundaries through the unilateral action of local governing bodies.
4. *Judicial Determination (JD)*. The state's judiciary determines whether or not a proposed annexation should occur.
5. *Quasi-Legislative or Administrative Determination (QL)*. An independent, non-judicial board or commission determines whether or not a proposed annexation should occur.

How the 50 states are currently categorized, according to Liner (1990), is shown in Table 2.

MacManus and Thomas (1979) were the first to use this methodology. They examined 243 cities with populations over 50,000 for the 1970-1973 period and found that there was *not* a relationship between the legal classifications and annexation activity. Dusenbury (1980) looked only at southern states and did not conduct formal statistical tests, but found strong evidence that state laws *did* affect annexation activity.

Galloway and Landis (1986) attempted to resolve the conflicting findings of MacManus and Thomas and Dusenbury. They carefully examined about 61,000 land annexations during the 1970's as reported

¹² This sections quotes from Galloway and Landis (1986).

in the 1980 U.S. Census, then regressed the dummy variables for the Sengstock classifications on state-level average annexations. They found that state laws *do* affect the number of annexations in both metropolitan and nonmetropolitan areas, but found that the Sengstock classifications were poor predictors of annexation activity in the sense that total explained variation was low and some of the signs were not as expected.¹³ Liner (1990) attempted to improve the Galloway and Landis results by using Census data from the 1960's (which includes data on annexations of land *and* population), focusing on cities rather than the states, and by including socioeconomic variables. Although the total explanatory power of Liner's models was low, he also found that laws *do* affect annexation activity and that the Sengstock classifications were accurate predictors.

Incorporations. Rigos and Spindler (1991) point out that all of the earlier studies on incorporation (Martin and Wagner (1978), Miller 1981), Hoch (1984) and Waste (1983)) use data on one state only: California. Martin and Wagner, for example, found that incorporations slowed down after California adopted a more restrictive incorporation procedure. While California is an important and rapidly growing state, Rigos and Spindler are correct to point out the general lack of research in this area.

In their study, Rigos and Spindler used incorporation data for 49 states over the 1970-1979 and 1980-1986 periods, which is collected by the U.S. Census Boundary and Annexation Survey and reported in the ICMA *Municipal Yearbook*. They also included in their regression analysis other variables that they hypothesized to affect incorporation activity. Interestingly, they found that easy annexation laws were a powerful force explaining defensive incorporations, whereas incorporation laws themselves were relatively unimportant. They also found that other state variables, such as property tax limits and the role of county governments, affect the level of incorporation activity.

¹³ For example, they expected that annexation activity would be greatest in states that are classified as "MD" (municipalities that can unilaterally annex land) and least in states classified as "PD" (popular votes determine consolidation outcomes), but this did not occur.

VII - Political Factors Affecting Size of Local Government

The classic articles in this field are by Marando (1974, 1979). Marando compiled data on consolidation votes since World War II, which showed that only 17 out of 68 city-county consolidations, arguably the most comprehensive kind of reform, have passed (these votes are reproduced in Table 3).¹⁴ To the Public Choice advocates, this is evidence of the Traditional Reform school's unpopularity (see, for example, Toma, 1979). Marando documented that these proposals were often promoted by local "elites" (such as Chambers of Commerce, League of Women Voters, the academic community, and metropolitan newspapers). Typically, since the proposals are not well-understood, study commissions are formed, which allows special interest groups time to mobilize and dispute the supposed benefits. Usually, the voters become confused by the complexity of the issues and are reluctant to change a situation for which they do not see an urgent problem. Voter turnout has been very low (usually around 25 percent).

It is important to recognize that the great majority of city-county consolidation votes have taken place in the South.¹⁵ A recurring allegation is that the city-county consolidation votes are racially motivated: that is, Caucasians are alleged to favor consolidations as a way to dilute African-American voting power, which is concentrated in the cities. It should be pointed out also that recent court decisions have made consolidations more difficult, such as requiring a majority by both city and county voters and making sure that the Fair Housing Act is not violated. Marando has aptly discussed how racially motivated consolidations are a double-edged sword:

¹⁴ A frequently cited statistic is that no city over 1 million people has ever consolidated with a county. Miami and Dade County consolidated, but at the time, Miami did not have a population over one million people.

¹⁵ In particular, Virginia has had the most number of votes by far. This is because by Virginia law, once a town reaches a population of 5,000, it becomes a city and fiscally separates from the county with the power to annex county properties. This has led to many local initiatives by county leaders, who see their tax base, population, and political power threatened.

A further implication drawn from recent Supreme Court Decisions [is] that they create a bind for individuals who on one hand, favor decentralized governmental structures which facilitate maintaining segregation in housing and schooling, while on the other hand, favor consolidation to keep Blacks from gaining political control of the central city (1979, p. 420).

Marando showed that many annexations had taken place and that the number (and authority) of regional councils of government had increased. However, he considered these actions to be less sweeping in their reforms than city-county consolidations.

VIII - Conclusions

1-Summary of Findings. The theoretical debate is likely to be contentious for some time to come.

We believe that the Public Choice school seems to have dominated the debate over the last 30 years and certainly has changed the discussion over reform. The Neo-Marxists have also made a contribution in getting both schools to focus on business as well as consumer groups. We agree with the observation given by Wikstrom:

First, we need to recognize that the issue of political consolidation is primarily, although not exclusively, a political question. Consolidation of governmental units in the metropolis will be supported by those interests and groups which perceive that their political power will be sustained or enhanced, while it will be opposed by those who feel politically threatened (p. 6).

As far as demographic trends go, it is fairly clear that the South and Western regions of the country are growing the fastest in terms of population. It is clear also that local governments are increasingly willing to try alternative service delivery mechanisms, including contracting with the private sector, as a way to cope with budget cuts from the 1980's. It is also evident that the power of regional councils of government peaked during the 1970's and that since the 1980's councils have had to re-define their missions in response to state funding.

The economies of size literature seems to indicate that there is no single "optimal" size city (and therefore governmental service delivery). Rather, the optimal size of governmental service delivery varies by service and is quite sensitive to local conditions.

In managerial matters, readers interested in efficiency arguments will find that some cost-revenue and simulation analyses have been conducted regarding annexation and consolidation decisions. Also, new and sophisticated methodologies have been used to show that local governments are not being run efficiently; these new methodologies are likely to encounter normal academic criticism, so caution is advised in interpreting these results. Lastly, it should be pointed out that even some of the Public Choice advocates favor regional coordination as a way to create local economic development opportunities.

There has been relatively little research on the effects of different annexation and incorporation laws on annexation and incorporation activity. The most recent research on the law and annexation activity seems to indicate that easy laws contribute to high annexation activity and difficult laws retard annexation activity, though this is far from a resolved issue. Research on the law and incorporation activity is even weaker. Most studies have been for only one state (California) and the only multistate study seems to indicate that annexation laws are a bigger factor than incorporation laws (easy annexation laws lead to "defensive" incorporations).

Politically, city-county consolidations, the most sweeping kind of local government reform, continue to be unpopular (only 17 out of 68 passed over the 1945-1976 period). Most of the votes have been in the South, where racism has been considered a motivating factor to dilute central city voting power of African-Americans. The courts have made consolidation votes even more difficult to pass, requiring that a majority pass in both cities and counties and that the Fair Housing Act not be violated. The number of annexations achieved and the number of regional councils of government

created have increased, although these actions are considered less sweeping in their reforms than city-county consolidations.

2-Directions for Future Research. Some of the issues mentioned above have been researched rather thoroughly. We find that there are three major issues regarding the optimal size of local government that have not received enough attention. One issue is the quality of service delivery. It appears to be the case, at least anecdotally, that taxes or expenditures do not go down after consolidations because local governments use the savings to improve the quality of existing services. This hypothesis has not been rigorously tested. A second issue is the general neglect of rural and small city issues. Most of the literature we located addresses metropolitan issues, yet there are interesting and unanswered questions regarding rural areas. Thirdly, the research on the law's effect on annexation and incorporation is largely unresolved. We would like to see more studies using a nationwide database confirm or refute the few studies that exist today.

IX - References

- Advisory Commission on Intergovernmental Relations, *Intergovernmental Service Arrangements for Delivering Local Public Services: Update 1983*, Washington, DC: A-103, 1985.
- Atkins, Patricia S., "From the Mauling to the Malling of Regionalism," *Public Administration Review*, 53(1993): 583-586.
- Atkins, Patricia S. and Laura Wilson-Gentry, "An Etiquette for the 1990s Regional Council," *National Civic Review*, 81(1992): 466-487.
- Baker, Paula C., Elinor Ostrom, and Robert Goehlert, *Metropolitan Reform: An Annotated Bibliography*, Bloomington, Indiana: Workshop in Political Theory and Policy Analysis, Indiana University, 1979.
- Barzel, Yoram, "Productivity in the Electric Power Industry," *The Review of Economics and Statistics*, 45(1963): 395-408.
- Beaton, W. Patrick, "The Determination of Police Protection Expenditures," *National Tax Journal*, 27(1974): 335-349.
- Benton, J. Edwin and Darwin Gamble, "City/County Consolidation and Economies of Scale: Evidence From a Time-Series Analysis in Jacksonville, Florida," *Social Science Quarterly*, 65(1984): 190-198.
- Bingham, Richard D. and David Hedge, *State and Local Government in a Changing Society* (2nd ed.), New York: McGraw-Hill, Inc., 1991.
- Bish, Robert L. and Vincent Ostrom, *Understanding Urban Government: Metropolitan Reform Reconsidered*, Washington, DC: The American Enterprise Institute, 1973.
- Bourcier, David V. and Robert H. Forste, *Economic Analysis of Public Water Supply in the Piscataqua River Watershed*, University of New Hampshire: Water Resources Research Center, Bulletin 1, 1967.
- Breckenfeld, Gurney, "Kellogg's Battle of Battle Creek," *Fortune*, November 29, 1982: 122-124.
- Breen, E., F.J. Costa, and W.S. Hendon, "Annexation, An Economic Analysis: Whether a Small Village or Town Should Annex Adjacent Land is a Cost/Revenue Problem," *American Journal of Economics and Sociology*, 45(1986): 159-172.
- Brennan, Geoffrey and James F. Buchanan, "Towards a Tax Constitution for Leviathan," *Journal of Public Economics*, 8(1977): 255-273.
- Bunch, Beverly S. and Robert P. Strauss, "Municipal Consolidation: An Analysis of the Financial Benefits for Fiscally Distressed Small Municipalities," *Urban Affairs Quarterly*, 27(1992): 615-629.
- Carolan, Milou, "Regional Approaches to Environmental Management," *Public Management*, March 1990: 15-20.

- Carr, W. John and Paul J. Feldstein, "The Relationship of Cost to Hospital Size," *Inquiry*, 4(1967):45-65.
- Christensen, Laurits R. and William H. Greene, "Economies of Scale in U.S. Electric Power Generation," *Journal of Political Economy*, 84(1976): 655-675.
- Cohen, Harold A., "Hospital Cost Curves With Emphasis on Measuring Patient Care Output," in Klarman, Herbert E. (Ed.), *Empirical Studies in Health Economics*, Baltimore: The Johns Hopkins University Press, 1970.
- Cohen, Harold A., "Variations in Cost Among Hospitals of Different Sizes," *Southern Economic Journal*, 33(1967): 355-366.
- Committee for Economic Development, *Modernizing Local Government*, New York, 1966.
- Committee for Economic Development, *Reshaping Government in Metropolitan Areas*, New York, 1970.
- Cosgrove, Michael H. and Leroy J. Hushak, *Costs and Quality of Water in Ohio Cities*, Columbus, Ohio: Ohio Agricultural Research and Development Center, Research Bulletin 105, 1972.
- Cox, Kevin R. and Frank Z. Nartowicz, "Jurisdictional Fragmentation in the American Metropolis: Alternative Perspectives," *International Journal of Urban and Regional Research*, 4(1980): 196-209.
- Debertin, David L., *Agricultural Production Economics*, New York: Macmillan, 1986.
- Deller, Steven C. and C.H. Nelson, "Measuring the Efficiency of Producing Rural Road Services," *American Journal of Agricultural Economics*, 73(1991): 194-201.
- Deller, Steven C. and Edward Rudnicki, "Managerial Efficiency in Local Government: Implications on Jurisdictional Consolidation," *Public Choice*, 40(1992): 221-231.
- Dhrymes, Phoebus J. and Mordecai Kurz, "Technology and Scale in Electricity Generation," *Econometrica*, 32(1964): 287-315.
- Douglas, Morris and Luther Tweeten, "The Cost of Controlling Crime: A Study in Economies of City Life," *The Annals of Regional Science*, 5(1971): 33-49.
- Dusenbury, Patricia J., *Suburbs in the City: Municipal Boundary Changes in the Southern States*, Research Triangle Park, N.C.: The Southern Growth Policies Board, 1980.
- Dye, Thomas, "Urban Political Integration: Conditions Associated with Annexation in American Cities," *Midwest Journal of Political Science*, 8(1964): 430-446.
- Dye, Thomas R. and John A. Garcia, "Structure, Function, and Policy in American Cities," *Urban Affairs Quarterly*, 14(1978): 103-121.
- Eberts, Randall W. and Timothy J. Gronberg, "Structure, Conduct, and Performance in the Local Public Sector," *National Tax Journal*, 43(1990): 165-173.

- Epple, Dennis and Thomas Romer, "On the Flexibility of Municipal Boundaries," *Journal of Urban Economics*, 26(1989): 307-319.
- Fields, Mary Jo., "An Update on Local Government Consolidation in Virginia," *Newsletter*, 60(1983): 19-23.
- Fleischmann, Arnold, "The Politics of Annexation: A Preliminary Assessment of Competing Paradigms," *Social Science Quarterly*, 67(1986a): 128-142.
- Fleischmann, Arnold, "The Goals and Strategies of Local Boundary Changes: Government Organization or Private Gain," *Journal of Urban Affairs* 8 (1986b): 63-76.
- Forbes, Kevin F. and Ernest M. Zampelli, "Is Leviathan a Mystical Beast?" *American Economic Review*, 79(1989): 568-577.
- Fox, William F., *Size Economies in Local Government Services: A Review*, Washington, DC: U.S. Department of Agriculture, Economics, Statistics, and Cooperatives Service, Rural Development Research Report No. 22., 1980.
- Fox, William F. et al., *Economies of Size in Local Government: An Annotated Bibliography*, Washington, DC: U.S. Department of Agriculture, Economics, Statistics, and Cooperatives Service, Rural Development Research Report No. 9., 1979.
- Galloway, Thomas D. and John D. Landis, "How Cities Expand: Does State Law Make a Difference?" *Growth and Change*, 17(1986): 25-45.
- Hatry, Harry P, *A Review of Private Approaches for Delivery of Public Services*, Washington, DC: The Urban Institute, 1983.
- Hawkins, Brett W., Keith J. Ward, and Mary P. Becker, "Government Consolidation As a Strategy for Metropolitan Development," *Public Administration Quarterly*, 15(1991): 253-267.
- Hirsch, Werner Z., "Cost Functions of an Urban Government Service: Refuse Collection," *The Review of Economics and Statistics*, 47(1965): 87-92.
- Hitzhusen, Frederick J., "Some Measurement Criteria for Community Service Output and Costs: The Case of Fire Protection in Texas," *Southern Journal of Agricultural Economics*, 4(1972): 99-107.
- Hoch, Charles, "City Limits: Municipal Boundary Formation and Class Segregation" in William K. Tabb and Larry Sawers (Eds.), *Marxism and the Metropolis (2nd edition)*, New York: Oxford University Press, 1984, 101-119.
- Huettner, David A. and John H. Landon, "Electric Utilities: Scale Economies and Diseconomies," *Southern Economic Journal*, 44(1978): 883-912.
- Ingbar, Mary Lee, Barbara J. Whitney, and Lester D. Taylor, "Differences in the Costs of Nursing Services: A Statistical Study of Community Hospitals in Massachusetts," *American Journal of Public Health*, 56(1966): 1699-1715.
- Johnson, R.B. and W.P. Hobgood, *Cost Analysis of Rural Water Systems in Louisiana*, Louisiana State University: Department of Agricultural Economics, Working Paper No. 483, 1975.

- Johnston, J., "Statistical Cost Functions in Electricity Supply," *Oxford Economic Papers*, 4(1952): 68-105.
- Jones, Victor, *Metropolitan Government*, Chicago: University of Chicago Press, 1942.
- Kemper, Peter and John M. Quigley, *The Economics of Refuse Collection*, Cambridge, Mass.: Lippincott, Ballinger, 1976.
- Kitchen, Harry M., "A Statistical Estimation of an Operating Cost Function for Municipal Refuse Collection," *Public Finance Quarterly*, 4(1976): 56-76.
- Knaap, Gerrit and Steve Juelich, "The Fiscal Impacts of Detachment: Is It Better to Give Than to Receive?," *State and Local Government Review*, Winter 1992: 28-35.
- Lave, Judith R. and Lester B. Lave, "Hospital Cost Functions," *American Economic Review*, 60(1970): 378-395.
- Leshner, William G. and Harry P. Mapp, "Economies of Size in Highway Maintenance and Administration: A Preliminary Analysis for the Counties of New York State," *Journal of the Northeastern Agricultural Economics Council*, 3(1974): 90-111.
- Lineberry, Robert L. and Edmund P. Fowler, "Reformism and Public Policies in American Cities," *The American Political Science Review*, 61(1967): 701-716.
- Liner, Gaines H., "Annexation Rates and Institutional Constraints," *Growth and Change*, 21(1990): 80-94.
- Lomax, K.S., "Cost Curve for Electricity Generation," *Economica*, 19(1952): 193-197.
- Lyons, William E. and David Lowery, "Governmental Fragmentation Versus Consolidation: Five Public Choice Myths About How to Create Informed, Involved, and Happy Citizens," *Public Administration Review*, 49(1989): 533-543.
- MacManus, Susan A. and Robert D. Thomas, "Expanding the Tax Base: Does Annexation Make a Difference?" *The Urban Interest*, 1(1979): 15-28.
- Marando, Vincent L., "City-County Consolidation: Reform, Regionalism, Referenda, and Requiem," *Western Political Quarterly*, 32(1979): 409-421.
- Marando, Vincent L., "The Politics of Metropolitan Reform," *Administration & Society*, 6(1974): 229-262.
- Markusen, Ann R., "Class and Urban Social Expenditure: A Marxist Theory of Metropolitan Government," in William K. Tabb and Larry Sawers (Eds.), *Marxism and the Metropolis*, New York: Oxford University Press, 1978, 90-111.
- Martin, Dolores Tremewan and Richard E. Wagner, "The Institutional Framework for Municipal Incorporation: An Economic Analysis of Local Agency Formation Commissions in California," *Journal of Law and Economics*, 21(1978): 409-425.
- Miller, Gary J., *Cities by Contract: The Politics of Municipal Incorporation*, Cambridge, Mass.: MIT Press, 1981.

- MIS Report*, "Regional Strategies for Local Government Management," March 1992, 1-13.
- Oates, Wallace, "Searching for Leviathan: An Empirical Study," *American Economic Review*, 75(1985): 748-757.
- Ostrom, Elinor and Roger B. Parks, "Suburban Police Departments: Too Many and Too Small," in Masotti, Lewis H. and Jeffrey K. Handen (Eds.), *Sage Urban Affairs Annual Review*, 7(1973): 367-402.
- Ostrom, Vincent, Charles M. Tiebout, and Robert Warren, "The Organization of Government in Metropolitan Areas: A Theoretical Inquiry," *American Political Science Review*, 55(1961): 831-842.
- Rigos, Platon N. and Charles J. Spindler, "Municipal Incorporation and State Statutes: A State-Level Analysis," *State and Local Government Review*, Spring 1991: 76-81.
- Rusk, David, *Cities Without Suburbs*, Washington, DC: The Woodrow Wilson Center Press, 1993.
- Savas, E.S. and Barbara J. Stevens, *Evaluating the Organization of Service Delivery: Solid Waste Collection and Disposal*, New York: Center of Government Studies, Columbia University, 1976.
- Sengstock, Frank D., *Annexation: A Solution to the Metropolitan Area Problem*, Ann Arbor, MI: The University of Michigan Law School, 1960.
- Stein, Robert M., "Alternative Means of Delivering Municipal Services: 1982-1988," *Intergovernmental Perspective*, Winter 1993: 27-30.
- Stein, Robert M., "The Political Economy of Municipal Functional Responsibility," *Social Science Quarterly*, 63(1982): 530-548.
- Stevens, Barbara J., "Scale, Market Structure, and the Cost of Refuse Collection," *The Review of Economics and Statistics*, 60(1978): 438-448.
- Stevens, Barbara J., "Service Arrangement and the Cost of Residential Refuse Collection," in S. Savas (Ed.), *The Organization and Efficiency of Solid Waste Collection*, Lexington, Mass: Lexington Books, 1977.
- Studenski, Paul, *The Government of Metropolitan Areas in the United States*, New York: National Municipal League, 1930.
- Swanson, Earl R., "Rural Road Costs and Size of Road Unit," *Current Economic Comment*, 18(1956): 25-32.
- Tiebout, Charles M., "A Pure Theory of Local Expenditure," *Journal of Political Economy*, 64(1956): 416-424.
- Toma, Mark, "The Impact of Institutional Structures on City-County Consolidation Outcomes," *Public Choice*, 34(1979): 117-122.
- United States Department of Commerce, Bureau of the Census, *United States Statistical Abstract, 1992*, Washington, DC: Government Printing Office, 1992.

- United States Department of Health, Education, and Welfare, *Modern Sewage Treatment Plants: How Much Do They Cost?* Washington, DC: Government Printing Office, Public Health Service Publication, No. 1229, 1964.
- Valente, Carl F. and Lydia D. Manchester, *Rethinking Local Services: Examining Alternative Delivery Approaches*, Washington, DC: International City Management Association, 1984.
- Wallace, Richard L. and Paul E. Junk, "Economic Inefficiency of Small Municipal Electric Generating Systems," *Land Economics*, 46(1970): 98-104.
- Waste, Robert J., "The Early Years in the Life Cycle of City Councils: A Downsian Analysis," *Urban Studies*, 20(1983): 73-81.
- Whereatt, Robert, "Sponsor Knows 'Super Counties' Idea Would Require Slow Going," *Minneapolis Star-Tribune*, March 8, 1993, p. B3.
- White, Anthony G., *Reforming Metropolitan Governments: A Bibliography*, New York: Garland Publishing, Inc., 1975.
- Wikstrom, Nelson, "A Reassessment: Metropolitan Governmental Consolidation," *Growth and Change*, 9(1978): 2-7.
- Will, Robert E., "The Scalar Economies and Urban Service Requirements," *Yale Economic Essays*, 5(1965): 3-61.
- Young, C. Edwin and Gerald A. Carlson, "Land Treatment Versus Conventional Treatment of Municipal Wastewater," *Journal of Water Pollution Federation*, 47(1975): 2565-2573.
- Zax, Jeffrey, "Is There a Leviathan in Your Neighborhood?" *American Economic Review*, 79(1989): 560-567.

Appendix I - Related References Not Cited

- Abrahamson, Mark and Mark Hardt, "Municipal Annexations Within Major Metropolitan Areas, United States: 1980-1986," *Sociology and Social Research*, 75(1990): 49-51.
- Agranoff, Robert, "Services Integration is Still Alive: Local Intergovernmental Bodies," *New England Journal of Human Services*, Summer 1985: 16-25.
- Agranoff, Robert, "Structuring of Human Services in Local Government: Management Versus Reorganization," *New England Journal of Human Services*, 8(1988): 10-18.
- Barton, Andy, "Annexation by Informed Consent," *Public Management*, November 1989: 16-18.
- Brams, Marvin R., "A Case Study of the Application of Cost-Benefit Analysis to Water System Consolidation by Local Government," *Engineering Economist*, 17(1972): 99-114.
- Braschler, Curtis and Thomas Klindt, "Theoretical and Empirical Problems in Local Government Consolidation," *Canadian Journal of Agricultural Economics*, 17(1969): 141-150.
- Burtraw, Dallas, Winston Harrington, and Carter Hood, "'Easy Riding' in the Community Provision of Nonexcludable Local Public Goods," *Resources for the Future, Unpublished Monograph*: April 1993.
- Cain, Louis P., "To Annex or Not? A Tale of Two Towns: Evanston and Hyde Park," *Explorations in Economic History*, 20(1983): 58-72.
- Campbell, Richard W. and Patty Glynn, "Intergovernmental Cooperation: An Analysis of Cities and Counties in Georgia," *Public Administration Quarterly*, Summer 1990: 119-141.
- Chambers, Howard L., "Case Studies: Intergovernmental Cooperation," *Public Management*, July 1988: 8-25.
- Cho, Yong-Hyo, "Fiscal Implications of Annexation: The Case of Metropolitan Central Cities in Texas," *Land Economics*, 49(1969): 368-372.
- Coe, Charles and Joel Rosch, "Benefits and Barriers to Police-Fire Consolidation: A Case Study," *Journal of Police Science and Administration*, 15(1987): 216-225.
- Crank, John P., "Patterns of Consolidation Among Public Safety Departments, 1978-88," *Journal of Police Science and Administration*, 17(1990): 277-288.
- Crichlow, Joni Walser, "Competitive Annexation Among Municipalities: North Carolina Adopts the Prior Jurisdiction Rule," *Municipal Law*, 63(1985): 1260-1273.
- Dehoog, Ruth Hoogland, "Competition, Negotiation, or Cooperation: Three Models for Service Contracting," *Administration & Society*, 22(1990): 317-340.
- Doeksen, Gerald A. and Janet Peterson, *Critical Issues in the Delivery of Local Government Services in Rural America*, Washington, DC: U.S. Department of Agriculture, Economic Research Service, ERS Staff Report AGES860917, 1987.

- Dodge, William R., "The Emergence of Intercommunity Partnerships in the 1980s," *Public Management*, July 1988: 2-7.
- Filer, John E. and Lawrence W. Kenny, "Voter Reaction to City County Consolidation Referenda," *Journal of Law and Economics*, 23(1980): 179-190.
- Goldberg, Steven H., "Annexation in Urban Counties: Missouri's Scheme and a Plan for Reform," *Journal of Urban and Contemporary Law*, 29(1985): 187-226.
- Greene, Kenneth V. and Thomas J. Parliament, "Political Externalities, Efficiency, and the Welfare Losses from Consolidation," *National Tax Journal*, 33(1980): 209-217.
- Gubala, T.W., "Economic Developers and Planners: Roles in Conflict in Local Government," *American Development Review*, 10(1992): 31-34.
- Hirsch, Werner Z., "Expenditure Implications of Metropolitan Growth and Consolidation," *The Review of Economics and Statistics*, 41(1959): 232-241.
- Holland, David W. and John L. Baritelle, "School Consolidation in Sparcely Populated Rural Areas: A Separable Programming Approach," *American Journal of Agricultural Economics*, 57(1975): 567-575.
- Honadle, Beth Walter, "Change and Stability in Subnational Government: Putting Reform in Perspective," *Public Administration Review*, 42(1982): 180-184.
- Hughes, Herbert H. and Charles Lee, "The Evolutionary Consolidation Model: A Response to Revenue Limits in Growing Metropolitan Areas," *Urban Resources*, Winter 1987: 3-8.
- Kiesling, Herbert J., "A Model for Analyzing the Effects of Governmental Consolidation in the Presence of Public Goods," *Kyklos*, 29(1976): 233-255.
- Kitching, John, "Why Do Mergers Miscarry?" *Harvard Business Review*, December 1967: 84-101.
- Koleda, Michael S., "A Public Good Model of Governmental Consolidation," *Urban Studies*, 8(1971): 103-110.
- Koven, Steven G. and Don F. Hadwiger, "Consolidation of Rural Service Delivery," *Public Productivity & Management Review*, 15(1992): 315-328.
- Lewis, Sylvia, "Border Wars," *Planning*, October 1989: 8-13.
- Locke, Kevin, "Centralization and the Delivery of Local Government Services, *Unpublished monograph*, 1992.
- Martin, Delores T. and Richard B. McKenzie, "Bureaucratic Profits, Migration Costs, and the Consolidation of Local Government," *Public Choice*, 23(1975): 95-100.
- Mehay, Stephen L., "The Expenditure Effects of Municipal Annexation," *Public Choice*, 36(1981): 53-62.
- Miller, Joel, "Annexation: The Outer Limits of City Growth," *American Demographics*, November 1984: 31-35.

- Mouritzen, Poul E. and Betty J. Narver, "Fiscal Stress in Local Government: Responses in Denmark and the United States," *Research in Urban Policy*, 2(1986): 197-218.
- New York State Conference of Mayors, *NYCOM Special Report: Municipal Consolidation and Privatization*, Albany, NY: 1982.
- Oates, Wallace E., *Fiscal Federalism*, Chicago: Harcourt Brace Jovanovich, Inc., 1972.
- Ostrom, Elinor, "Metropolitan Reform: Propositions Derived from Two Traditions," *Social Science Quarterly*, 53(1972): 474-493.
- Richman, Roger, "Formal Mediation in Intergovernmental Disputes: Municipal Annexation Negotiations in Virginia," *Public Administration Review*, 45(1985): 510-517.
- Seroka, J., "Attitudes of Rural County Leaders in the United States Towards Intergovernmental Cooperation," *Journal of the Community Development Society*, 17(1986): 55-72.
- Shanahan, Eileen, "Going It Jointly: Regional Solutions for Local Problems," *Governing*, August (1991): 70-76.
- Skaburskis, A., "Goals for Restructuring Local Government Boundaries: Canadian Lessons," *Government and Policy: Environment and Planning C*, 10(1992): 159-172.
- Smith, Russell L., "Adapting Local Government to a Changing Rural South Dakota," *Public Affairs*, May 1985: 1-11.
- Sobba, Robert L., "Public Services Consolidation: The Answer to Your Community's Needs," *FBI Law Enforcement Bulletin*, February 1991: 6-10.
- Thomas, Robert D., "Metropolitan Structural Development: The Territorial Imperative," *Publius: The Journal of Federalism*, 14(1984): 83-115.
- Thomas, Scott G., "What Future the City?" *Empire State Report*, June 1987, 24-25.
- Walker, David B., "Intergovernmental Relations and the Well-Governed City: Cooperation, Confrontation, Clarification," *National Civic Review*, 75(1986): 65-87.
- Wicker, Warren J., "Municipal Annexation in North Carolina," *Popular Government*, Winter 1982: 31-35.
- Wrightson, Margaret T., "Interlocal Cooperation and Urban Problems: Lessons for the New Federalism," *Urban Affairs Quarterly*, 22(1986): 261-275.
- Young, Dennis R., "Consolidation or Diversity: Choices in the Structure of Urban Governance," *American Economic Review*, 66(1976): 378-385.
- Zimmerman, Joseph F., "Conflict and Cooperation Mark State-Local Relations," *National Civic Review*, 75(1986): 26-34.

Table 1 - Summary of Selected Data on Boundary Changes for Municipalities of 2,500 or More Population, by State: 1980-1989

	Annexations			Detachments		
	Number	Population (000)	Square Miles	Number	Population (000)	Square Miles
Alabama	4,051	117	676	89	2	13
Alaska	95	3	148	1	1	16
Arizona	792	94	912	21	1	6
Arkansas	1,064	77	239	5	1	3
California	5,101	283	726	148	1	13
Colorado	2,616	44	429	39	24	18
Connecticut	1	1	1	0	0	0
Delaware	155	2	9	0	0	0
Florida	5,961	152	414	64	2	7
Georgia	5,636	58	282	34	1	6
Hawaii	0	0	0	0	0	0
Idaho	545	15	41	22	1	1
Illinois	9,560	88	289	117	1	4
Indiana	1,326	58	93	19	2	2
Iowa	757	9	63	27	1	2
Kansas	1,754	23	134	44	2	5
Kentucky	947	52	124	20	1	6
Louisiana	1,319	74	126	13	1	2
Maine	0	0	0	0	0	0
Maryland	485	9	44	6	1	1
Massachusetts	0	0	0	0	0	0
Michigan	709	25	64	21	1	3
Minnesota	1,003	12	56	78	1	5
Mississippi	132	50	111	5	1	2
Missouri	36	20	33	1	1	
Montana	619	14	24	22	1	1
Nebraska	637	61	40	30	1	1
Nevada	490	4	81	2	0	1
New Hampshire	0	0	0	0	0	0
New Jersey	9	1	1	3	1	1
New Mexico	554	18	121	1	0	1
New York	202	2	18	7	1	1
North Carolina	4,577	313	460	11	1	1
North Dakota	288	8	21	16	1	2
Ohio	1,882	35	160	29	1	4
Oklahoma	1,546	34	342	166	13	279
Oregon	1,711	110	95	13	1	1
Pennsylvania	18	1	1	6	1	1
Rhode Island	0	0	0	0	0	0
South Carolina	3,343	66	193	11	1	4
South Dakota	340	9	31	7	1	1
Tennessee	1,770	91	318	25	1	2
Texas	5,730	360	1,010	399	6	162
Utah	966	21	211	34	1	17
Vermont	1	1	1	2	0	1
Virginia	79	45	118	8	1	1
Washington	1,355	67	134	4	1	1
West Virginia	250	9	36	2	1	1
Wisconsin	2,342	17	112	50	1	5
Wyoming	642	14	55	2	1	1
UNITED STATES	75,337	2,583	8,684	1,656	84	606

Source: Unpublished, unofficial update of U.S. Census Bureau, *Annexation and Boundary Survey, 1983*. The U.S. Census Bureau no longer publishes this survey, even though the data are collected for other internal purposes. These data were obtained by direct request to the Bureau's Geography Division. The authors are grateful to the Bureau for providing us with these data.

Table 2 - Categories of States by Legislative Annexation Models

Judicial Determination	Legislative Determination	Municipal Determination	Popular Determination	Quasi- Legislative Determination
Mississippi	Connecticut	Idaho	Alabama	Alaska
Pennsylvania	Delaware	Indiana	Arizona	Arkansas
Virginia	Hawaii	Missouri	Colorado	California
	Maine	Nebraska	Florida	Iowa
	Massachusetts	N. Carolina	Georgia	Kansas
	New Hampshire	Oklahoma	Illinois	Minnesota
	Rhode Island	Tennessee	Kentucky	New Mexico
	Vermont	Texas	Louisiana	N. Dakota
		Wyoming	Maryland	Washington
			Michigan	
			Montana	
			Nevada	
			New Jersey	
			New York	
			Ohio	
			Oregon	
			S. Carolina	
			S. Dakota	
			Utah	
			W. Virginia	
			Wisconsin	

Source: Liner (1990), p. 84.

Table 3 - City-County Consolidation Votes, 1945 - 1976

Plans that were adopted			Plans that were rejected		
Year	Percent	City-County	Year	Percent	City-County
1947	51.1	Baton Rouge-East Baton Rouge Parish, LA	1948	45.4	Miami-Dade County, FL
1952	88.7	Hampton-Elizabeth County, VA	1954	33.0	Albany-Dougherty County, GA
1957	51.0	Miami-Dade County, FL	1957	49.2	Miami-Dade County, FL
1957	66.9	Newport News-Warwick, VA	1958	47.3	Nashville-Davidson County, TN
1962	56.8	Nashville-Davidson County, TN	1959	30.0	Albuquerque-Bernalillo County, NM
1962	66.0	South Norfolk-Norfolk County, VA	1959	44.8	Cleveland-Cuyahoga County, OH
1962	81.9	Virginia Beach-Princess Anne County, VA	1959	16.7	Knoxville-Knox County, TN
1967	64.7	Jacksonville-Duval County, FL	1959	27.5	St. Louis-St. Louis County, MO
1969	65.1	Carson City-Ornsby County, NV	1960	35.8	Macon-Bibb County, GA
1969	54.1	Juneau-Greater Juneau Borough, AK	1961	22.3	Durham-Durham County, NC
1970	80.7	Columbus-Muscogee County, VA	1961	54.0	Richmond-Henrico County, VA
1971	77.2	Sitka-Greater Sitka Borough	1962	42.1	Columbus-Muscogee County, GA
1972	69.4	Lexington-Fayette County, KY	1962	36.8	Memphis-Shelby County, TN
1972	75.7	Suffolk-Nansemond County, VA	1962	40.1	St. Louis-St. Louis County, MO
1975	60.2	Anchorage, Glen Alps, Gerwood- Greater Anchorage Borough, AK	1964	19.2	Chattanooga-Hamilton County, TN
1976	56.0	Anaconda-Deer Lodge County, MT	1967	28.4	Tampa-Hillsborough County, FL
1976	62.0	Butte-Silver Bow County, MT	1969	48.0	Athens-Clarke County, GA
			1969	29.6	Brunswick-Glynn County, GA
			1969	66.4	Roanoke-Roanoke County, GA
			1969	31.9	Winchester-Frederick County, VA
			1970	28.1	Charlottesville-Albemarle County, V
			1970	48.0	Chattanooga-Hamilton County, TN
			1970	42.0	Pensacola-Escambia County, FL
			1970	42.0	Tampa-Hillsborough County, FL
			1971	41.5	Augusta-Richmond County, GA
			1971	17.5	Bristol-Washington County, VA
			1971	30.5	Charlotte-Mecklenburg County, NC
			1971	47.6	Memphis-Shelby County, TN
			1971	41.0	Tallahassee-Leon County, FL
			1972	48.3	Athens-Clarke County, GA
			1972	36.5	Fort Pierce-St. Lucie County, FL
			1972	39.6	Macon-Bibb County, GA
			1972	42.0	Tampa-Hillsborough County, FL
			1973	44.1	Albuquerque-Bernalillo County, NM
			1973	45.9	Columbia-Richland County, SC
			1973	58.3	Savannah-Chatham County, GA
			1973	45.9	Tallahassee-Leon County, FL
			1973	25.6	Wilmington-New Hanover County, NC
			1974	51.5	Augusta-Richmond County, GA
			1974	40.4	Charleston-Charleston County, SC
			1974	32.1	Durham-Durham County, NC
			1974	26.1	Evansville-Vanderburgh County, IN
			1974	27.5	Portland-Multnomah County, OR
			1974	24.9	Sacramento-Sacramento County, CA
			1975	16.7	Ashland-Catlestsburg-Boyd County,
			1975	39.0	Salt Lake City-Salt Lake County, UT
			1976	45.5	Augusta-Richmond County, GA
			1976	38.0	Macon-Bibb County, GA
			1976	46.0	Missoula-Missoula County, MT
			1976	21.0	Moab-Grand County, UT
			1976	45.1	Tallahassee-Leon County, FL

Source: Marando (1979), pp. 412-413.