David E. Dowall

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AN EXAMINATION OF POPULATION-GROWTH-MANAGING COMMUNITIES

David E. Dowall, University of California, Berkeley

ABSTRACT

This paper examines the fiscal, social, economic and environmental characteristics of 228 cities and counties. Using cluster analysis, 210 communities were classified into eleven types of communities. The empirical typings appear to support the proposition that communities control population growth to avoid adverse fiscal and environmental impacts and maintain the social and economic character of the community.

THE EMERGENCE OF POPULATION GROWTH MANAGEMENT. Until the early 1970's community planning was concerned with accommodating new development. Most planners designed plans that would absorb considerable new residential and commercial development. While attitudes towards growth ranged from Chamber-of-Commerce boosterism to half-hearted resignation, few communities attempted overtly to control or limit development.

Since the 1970's, upheavals in environmental policy and planning, increased skepticism towards development, and the growing "city-as-a-profit-making enterprise" mentality of local government officials and planners have predisposed many communities to develop and implement a variety of land-use and development controls that limit the rate of residential development.[1] In 1972, a report on local growth control identified eight "pioneer" communities attempting to control growth.[2] Between 1975 and 1980, the use of growth controls has become widespread, particularly in rapid growth metropolitan areas. For example, in the 1974 annual survey of local planning agencies in California, 340 communities indicated that, in addition to using traditional police powers, they were using a variety of planning tools to control population growth.[3] A more recent survey of Bay Area planning agencies indicates that eight have adopted and seven are considering the adoption of formal growth management programs which limit the number of building permits awarded annually, forty communities have imposed moratoria during the past five years, and thirty-three downzoned significant portions of land.[4] Interest in growth management is increasing as more communities begin to question the benefits of continued growth. If present trends continue, severe constraints to residential development may emerge in many urban areas across the country.

In recent years, the inflationary effects of restrictive growth management and land use controls have gained tremendous attention and generated considerable concern. By 1978, the inflationary impact of restrictive development controls was the topic of two federal government studies.[5] The HUD Task Force Report, while stopping short of recommending federal standards for land use control, indicated that overregulation of residential development was widespread and added significant costs to housing construction. Despite numerous studies of the effects of local development controls, little research has attempted to identify the underlying pressures that lead communities to adopt growth control strategies. Without a clear understanding of which communities are attempting to control growth and why, prospects for identifying less inflationary but equally effective development controls appears to be limited.

This paper reports on an empirical analysis of the fiscal, social, and environmental characteristics of growth management communities and the pressures that they face. This type of cross-sectional empirical research provides useful information about the types of communities engaged in growth control and, to the extent the empirical evidence can be used to predict when other communities will opt for growth management, enables policy analysts to anticipate future trends in local growth management. Furthermore, by understanding the specific pressures on growth impacted communities, policy makers will be better able to develop alternative strategies for growth-impact mitigation that do not generate market dislocations as signficant as those associated with the growth rationing systems of Petaluma and Boulder.

Why Communities Want to Limit Population Growth. Population-growth limitation is aimed at stopping or slowing the flow of new migrants into the community. Additional residents mean more

housing, increased demand for public services, congestion, diminished environmental quality, and the gradual loss of the "small town character" of the community. While the loss of "small town character" appears to be a major motivation for adopting growth controls in small cities, there is evidence that larger urban places, such as Toronto and San Francisco, view growth controls as an effective mechanism for maintaining their urban character. Depending on the rate of population growth, the availability of public services and the environmental quality of the town, the range and severity of growth impacts can be considerable. For example, fiscal impacts of increased public-service demands, the disorienting and anxiety-provoking social and psychological effects of rapid immigration, and environmental impacts such as traffic congestion, extensive conversion of open lands, and increased air and water pollution can be enormous.[6]

Adverse effects of population growth can be attributed either to bottleneck or to size impacts. Bottleneck effects develop when communities are swamped with extremely rapid growth. The rate of increase is so great that the existing insitutions of the town cannot cope. The quality of public services falls precipitously and tax rates soar as needed capital facilities are quickly provided. Continued rapid growth outstrips the capacity of capital facilities, and often leads communities to implement development controls that limit growth to a rate that can be accommodated by public services.

Size effects are, in the economists' jargon, "diseconomies of scale;" at some point the size of the town becomes too big. Optimum city size is a complex and controversial topic among economists, planners, and policymakers.[7] The best size depends on what aspects of the city are being considered. For example, the "optimum city size" with respect to theater, opera, and the arts is very large: New York, London, Paris. The best-sized city for efficient police protection may be small: 5,000 to 10,000 people. There are different economies of scale for each activity. The adding up of these activities to determine the overall "optimum city size" is very difficult and politically contentious. Each person has different preferences about what activities are important for considering optimum size. Theater lovers prefer big cities because only with size can the arts be diverse and of high quality. Environmentalists may vote for small towns that are less obtrusive environmentally. Despite significant differences of opinion, citizens frequently vote to limit the size of their cities.

The prelude to growth is the concern that communities are growing too fast or that they are becoming too large. The costs of rapid growth or larger size are usually framed around several dimensions: fiscal impacts, environmental impacts, and changes in the social and economic structure of the community. Elsewhere I have argued that these impacts are the primary factors that cause communities to adopt growth controls.[8] In an effort to validate this proposition, and to increase our understanding of the type of communities engaged in growth management, an empirical analysis was conducted of 228 communities attempting to control population growth. The next section explains the method of analysis and presents the results.

Empirical Analysis. The analysis seeks to determine the unique characteristics and growth pressures faced by communities attempting

to control their population growth. To the extent that these communities share similar fiscal categories, socioeconomic composition, and environmental characteristics, and similar growth pressures, the empirical examination may validate the hypothesis that growth-controlling communities are responding to forces that threaten similar fiscal, environmental, and socioeconomic characteristics. Furthermore, since communities may implement growth controls for all or any one of these reasons, the empirical analysis should be able to identify different groupings of communities according to the types of pressures confronted.

The universe of communities examined was obtained from the International City Managers Association Survey of its members' environmental policy.[9] A listing was obtained of all communities responding "yes" to question 16c, "Has your community adopted policies to limit the growth of its population?" The survey did not attempt to determine the strategy for growth limitation. The affirmatively responding list includes communities that have downzoned land for residential development, instituted moratoria, and made general plan changes, as well as places that have implemented the more glamorous growth control rationing systems. In addition, respondents answering affirmatively to a similar California survey question about growth limitations were merged with the ICMA survey.[10] The initial sample contained 253 cities and counties covered by the ICMA survey and 340 jurisdictions from the California survey. After adjusting for double-counting, the pool of local governments was 567.

Building on the theory that growth management is a response to adverse fiscal, socioeconomic, and environmental impacts of rapid growth, the next step was to select variables for inclusion in the empirical analysis. Lack of resources precluded the collection of data from each individual community. Published sources of secondary data compiled by the U.S. Department of the Census were examined. The initial reconnaissance of data generated fifty variables for inclusion in the analysis.[11] Data reflecting the fiscal, social, economic, ethnic, and environmental characteristics and recent growth experience of the cities and counties contained in the sample were selected. After assembling the data, and eliminating communities and variables for which no data were available, the list of communities was reduced to 228 jurisdictions and 43 variables. Table 1 presents the variables included in the analysis and means and standard deviations for each. Note that these means and standard deviations are for a select group of communities. The average growth rate during the 1960s is over thirty percent. Also, the percent of houses built in the 1960s and the percent changes of house values is significantly greater than the national norms. The first eleven variables measure the fiscal characteristics of the communities; variables included per-capita tax rates for the years 1962, 1967, and 1972, and the present change between years. The tax rates are computed by dividing the constant-dollar per-capita tax by constant-dollar per-capita income. The next set of fiscal variables cover per-capita utility revenues, general revenues, education expenditures per capita, and school debt per capita.

TABLE 1

Variables Included in the Analysis and Their Means and Standard Deviations

Variable Name	Mean	Standard Deviation
1. 1962 Per Capita Local Tax Rate	.32	4.51
2. 1962-1972 Tax Rate % Change	5.91	65.34
3. 1967 Per Capita Local Tax Rate	.02	.01
4. 1967-1972 Tax Rate % Change	10.76	33.21
5. 1972 Per Capita Local Tax Rate	.02	.02
6. 1972 Per Capita Utility Revenue	.76	13.02
7. 1972 Per Capita General Revenue	1.19	26.31
8. 1972 Per Capita Educational Capital Expenditures	14.51	9.20
9. 1972 Per Capita Sewer System Capital Indebtedness	3.08	6.32
10. 1972 Per Capita Long-term Debt	124.27	180.12
11. 1972 Per Capita Long-term School Debt	88.34	45.76
12. 1960 Median School Years Completed	11.39	1.17
13. 1970 Median School Years Completed	12.20	.88
14. 1960 % Families with Income Below $3,000	15.80	8.71
15. 1960 % Families with Income Over $10,000	19.37	11.72
16. 1970 % Families with Income Below Poverty Level	8.35	4.68
17. 1970 % Families with Income Over $15,000	24.36	13.42
18. 1960 % of Minority Population	6.42	8.95
19. 1970 % of Minority Population	8.25	10.53
20. 1960 % Minority - % Minority of Comparable Places	-1.39	6.79
21. 1970 % Minority - % Minority of Comparable Places	1.36	8.90
22. 1960 % Minority - % Minority of Surrounding Places	0.14	6.02
23. 1970 % Minority - % Minority of Surrounding Places	1.16	8.74
24. 1970 Population	96,623	186,572
25. 1960 Population	78,557	155,121
26. % Population Change 1960-1970	31.58	52.25
27. City Dummy	-	-
28. S.M.S.A. Dummy	-	-
29. 1970 Population Density per square mile	3,566	3,040
30. % of Houses Built During the 1950s for 1960	36.02	21.49
31. % of Houses Built During the 1960s for 1970	26.73	14.60
32. % Change in the Number of Houses Built in 1950s vs. 1960s	20.90	65.00
33. % Change in the Percent of Houses Built 1950s vs. 1960s	-16.14	39.98
34. 1960 Median House Value	13,942	5,167
35. 1970 Median House Value	20,080	8,655
36. % Change in Median House Value 1960-1970	44.22	24.26
37. 1969 County Acres Farmed	362.54	518.48
38. % Change in County Acres Farmed 1959-1969	-16.95	27.37
39. % of Total County Land in Farms, 1959	47.46	28.28
40. % of Total County Land in Farms, 1969	39.82	27.04
41. 1959 Value of Farm Output $/Acre	109.08	108.73
42. 1969 Value of Farm Output $/Acre	150.83	140.22
43. % Change in Value of Output 1959-1969	52.55	52.43

The next twelve variables tap the social status, income, and ethnic composition of communities: 1960 and 1970 median school years completed, percent of families with incomes below $3,000 and over $10,000 in 1960; percent below poverty level and over $15,000 in 1970; and percent minority population in 1960 and 1970. The last four variables compare the racial composition of cities or counties to other comparable cities or counties in the state in which the observation is located and a comparison of the racial composition of the city or county to that of the surrounding region. Variables 24, 25, and 26 measure population and change for 1960 and 1970. Variables 27 and 28 are dummy variables indicating whether the observation is a city or a jurisdiction located in a SMSA. Variables 29 measures population density.

Variables 30 and 31 measure the percent of houses built in the 1950s and 1960s. Variable 32 measures the percent change in the number of houses built in the 1960s relative to the 1950s. Variable 33 measures the rate of increase in the percentage of houses built over the 1950s and 1960s. The next three variables report median house values and percent change.

The last seven variables cover agricultural acreages percent of county land in agriculture (all data are for counties; in the case of city observations the data are for the county in which the city is located), and the value of agricultural output and the change between 1959 and 1969. These variables are used as proxies to measure environmental decline and urbanization pressures.

Cluster analysis, developed by Tryon and Bailey,[12] was used to identify the degree to which the forty-three variables "tapped" important dimensions of the character and growth pressures represented by the 228 communities. The clustering analysis generated eight unique dimensions. Together, these eight dimensions accounted for ninety-two percent of the variance of the original data. Table 2 presents these dimensions, member variables, and the cumulative explained variance.

The standardized (means of 50 and standard deviations of 10) cluster scores of each city and county were used to generate groupings of cities and counties. The grouping procedure operates to minimize the euclidean distance of within group scores and maximizes between group differences. The grouping algorithm developed by Tryon and Bailey generated eleven distinct community types. Mean scores for the eleven types of communities across the eight cluster dimensions are presented in Table 3. The typing procedure was able to group 210 of the 228 cases, accounting for ninety-two percent of the communities. Table 4 presents the eleven types and their members. The untyped eighteen cases are unique and do not fit into the dimensions tapped by the variables analyzed.

Type I: "Rural Places". This group is the largest, containing 37 cities and counties, and accounts for sixteen percent of the sample. This grouping is marked by its low population density, high proportion of farmland, and low income and growth. Many of these communities, such as Greeley, Colorado, and Tracy, California, have been faced with population-growth pressures since 1970.

TABLE 2

Cluster Dimensions, Member Variables, and Cumulative Explained Variance

	Cumulative Explained Variance
1. High Income and Wealth	
V15 1960 % Families with Income over $10,000	
V34 1960 Median House Value	
V17 1970 % Families with Income Over $15,000	
V35 1970 Median House Value	.52
2. Tax Rate	
V3 1967 Per capita Local Tax Rate	
V1 1962 Per capita Local Tax Rate	
V5 1972 Per capita Local Tax Rate	.61
3. Population Size	
V24 1970 Population	
V25 1960 Population	
-V27 Reflection of the City Dummy Variable	.64
4. Housing Stock Change	
V32 % Change in the Number of Houses built in 1950s vs. 1960	
V36 % Change in the Median House Value 1960-1970	
V33 Change in the Percent of Houses Built 1950s vs. 1960s	.69
5. Minority Composition of the Community	
V19 1970 % Minority Population	
V20 1960 % Minority - % Minority of Comparable Places	
V18 1960 % Minority Population	
V21 1970 % Minority - % Minority of Comparable Places	
V23 1970 % Minority - % Minority of Surrounding Places	
V22 1960 % Minority - % Minority of Surrounding Places	.83
6. Importance of Farming and Population Density	
V40 % of Total County Land in Farms, 1969	
V39 % of Total County Land in Farms, 1959	
-V29 Reflection of Population Density 1970	.87
7. Rate of Housing and Population Change	
V31 % Houses Built in the 1960s for 1970	
V30 % Houses Built in the 1950s for 1960	
V26 % Population Change 1960-1970	
V28 SMSA Dummy Variable	.91
8. Agricultural Production	
V41 1959 Value of Farm Output $/Acre	
V42 1969 Value of Farm Output $/Acre	.92

TABLE 3

Cluster Means* of 11 Community Types

TYPE	CLUSTER DIMENSION+ 1	2	3	4	5	6	7	8
1	42.1	47.3	48.2	45.9	51.3	62.4	42.7	43.9
2	50.7	48.2	46.5	43.4	48.0	44.6	52.8	48.1
3	49.9	47.6	46.7	53.2	45.3	54.5	63.4	48.7
4	42.5	48.4	46.1	49.5	47.4	48.3	40.0	44.8
5	49.9	49.4	66.1	50.7	48.1	55.7	51.9	47.7
6	50.0	59.6	47.6	54.2	49.1	43.1	43.5	57.9
7	53.9	48.8	47.5	44.0	42.1	37.4	50.3	64.3
8	45.1	48.1	47.3	47.1	72.1	52.9	47.7	46.8
9	80.7	47.1	45.8	47.2	47.4	41.6	47.6	55.9
10	69.3	47.9	46.0	50.8	44.1	49.0	60.9	53.3
11	50.1	48.0	46.1	78.2	48.4	56.1	57.8	44.9

* Means are standardized to a score of 50, Standard Deviation of 10
+ See Table 2 for Definition of Cluster Dimensions

TABLE 4. COMMUNITY TYPE MEMBERSHIP

TYPE 1

Greeley, CO
Bradenton, FL
Lakeland, FL
Pocatello, ID
Jacksonville, IL
Mt. Vernon, IL
Marion, IN
Richmond, IN
Fort Mason, IA
Pittsburg, KS
Bowling Green, KY
Monroe, MI
Cleveland, MS
Moberly, MS
Fostoria, OH
Newark, OH
Springfield, OH
Duncan, OK
Durant, OK
El Reno, OK
Muskogee, OK
Shawnee, OK
Athens, TN
McKinney, TX
Odessa, TX
Snyder, TX
White Settlement, TX
Spokane, WA
Pinal Cty, AZ
Lake Cty, FL
Houston Cty, GA
Douglas Cty, KS
Washington Cty, MN
Ward Cty, ND
Tracy, CA
Yuba City, CA
Sacramento, CA

TYPE 2

St. Petersburg, FL
Sarasota, FL
Forest Park, GA
Northlake, IL
Kenner, LS
Harper Woods, MI
Oak Park, MI
Wyoming, MI
Hopkins, MN
Richfield, MN
West Orange, NJ
Kenmore, WY
Lackawanna, NY
Chevoit, OH
Eugene, OR
Red Banks, TN
Greenfield, WI
Banning, CA
Chula Vista, CA
LaMesa, CA
National City, CA
Redlands, CA
San Anselmo, CA
San Leandro, CA
Fresno, CA
Redwood City, CA
San Bernardino, CA

TYPE 3

Aurora, CO
Boulder, CO
Hollywood, FL
Pinellas Park, FL
Bettendorf, IA
Coon Rapids, MI
Bethany, OK
Midwest City, OK
Garland, TX
Bountiful, UT
Costa Mesa, CA
Pacifica, CA
Santa Ana, CA
Upland, CA
Antioch, CA
Fairfield, CA
Livermore, CA
Lompoc, CA
Modesto, CA
Monterey, CA
Napa, CA
Novato, CA
Oxnard, CA
San Jose, CA
Santa Barbara, CA
Santa Monica, CA
Vacaville, CA

Type 4

New Albany, IN
Brunswick, ME
Cumberland, MD
Escanaba, MI
Marquette, MI
Claremont, NH
Cohoes, NY
Troy, NY
Utica, NY
Asheville, NC
Lexington, NC
Niles, OH
Bend, OR
Salem, OR
Carlisle, PA
Lancaster, PA
Waynesboro, PA
Elizabethton, TN
Logan, UT
Longview, WA
Huntington, WV
Martinsburg, WV
Parkersburg, WV
Sheboygan, WI
Chico, CA

TABLE 4. COMMUNITY TYPE MEMBERSHIP (Continued)

TYPE 5

Pinellas Cty, FL
Du Page Cty, FL
Polk Cty, IA
Anne Arundel Cty, MD
Montgomery Cty, MD
Muskegon Cty, MI
Cumberland Cty, NJ
Bernalilli Cty, NM
Dutchess Cty, NY
Orange Cty, NY
San Diego, CA
Butte Cty, CA
Contra Costa Cty, CA
El Dorado Cty, CA
Fresno Cty, CA
Marin Cty, CA
Napa Cty, CA
San Luis Obispo Cty, CA
Solano Cty, CA
Sonoma, Cty, CA
Tulare Cty, CA

TYPE 6

Ansonia, CN
Fairfield, CN
Meridian, CN
Middletown, CN
Milford, CN
New Haven, CN
Waterbury, CN
Greenfield, MA
Leomister, MA
Maldin, MA
Middleborough, MA
Qunicy, MA
North Plainfield, NJ
Cranston, RI
Santa Cruz, CA
Watsonville, CA
Santa Cruz Cty, CA

TYPE 7

Coral Gables, FL
North Miami, FL
Audubon, NJ
Clifton, NJ
Highland Park, NJ
Wickliffe, OH
Dormont, PA
Bellflower, CA
Culver City, CA
Downey, CA
Huntington Park, CA
Lynwood, CA
Santa Fe Springs, CA
Torrance, CA
Glendale, CA
Long Beach, CA

TYPE 8

Forrest City, AK
Daytona Beach, FL
Del Ray Beach, FL
Leesburg, FL
Albany, GA
Decatur, GA
Greensboro, NC
Aliquippa, PA
Coatsville, PA
Florence, SC
Greenwood, SC
Cumberland Cty, NC
Delano, CA
Menlo Park, CA
Ricmond, CA

TYPE 9

Evanston, IL
Lake Forest, IL
Winnetka, IL
Clayton, MO
Mamaroneck Town, NY
Rye, NY
Arcadia, CA
Beverly Hills, CA
San Marino, CA

TYPE 10

Lombard, IL
Northbrook, IL
Fairfax, VA
Belmont, CA
Fullerton, CA
Newport Beach, CA
San Carlos, CA
Palo Alto, CA
Saratoga, CA

TYPE 11

Tempe, AZ
Lexington, KY
Troy, MI
Athens, OH
Pullman, WA
Petaluma, CA
San Rafael, CA

Type 2: "Small, Average-Income Growing Cities". Most of these communities have grown at a rate of over thirty percent between 1960 and 1970. This group contains twenty-seven cities, accounting for twelve percent of the sample.

Type 3: "Rapid-Growth Suburban or Rural Cities". This group's average growth rate is over one standard deviation larger than the sample. Many communities in this group experienced rapid conversion of farmland to urban use during the 1960s. This group contains twenty-seven cities, comprising twelve percent of the sample.

Type 4: "Moderate-Sized Cities with Below-Average Growth". This cluster is perplexing. The growth impacts of the 1960s appear to be minimal, as do taxes and agricultural land conversions. Perhaps growth pressures have developed since 1970. This group contains twenty-five cities, comprising eleven percent of the sample.

Type 5: "Growing Urban Counties with Substantial Agricultural Land Use". With the exception of San Diego, this sample contains all counties. High scores on Clusters 3 and 5 suggest that growth pressures to convert agricultural land are great. This group contains twenty-one places representing nine percent of the sample.

Type 6: "High Taxes and Accelerating Growth". With the exception of Santa Cruz County, California, this grouping contains all cities. Per-capita taxes are very high and growth pressures appear to be increasing. Fiscal pressures are likely to be influential in deciding to slow growth. This group contains seventeen communities, comprising seven percent of the sample.

Type 7: "Moderately High-Wealth Growing Metropolitan Cities". Most of these communities are growing enclaves located in SMSAs. These places may be attempting to avoid congestion by downzoning vacant segments of land in the community. This type contains sixteen members, accounting for seven percent of the sample.

Type 8: "Ethnic Cities". This group of fifteen cities is distinguished by its high score on Cluster 5 (72.1). Growth pressures and the rate of development over the 1950-1970 period are about average. This group represents nearly seven percent of the sample.

Type 9: "High Wealth Islands". This group is made up of extremely wealthy cities. These cities are likely to restrict development to maintain their exclusive character. This group contains nine cities, representing four percent of the sample.

Type 10: "Wealthy High Growth Towns". This group is also made up of wealthy towns, but they differ from Type 9 in that they have experienced substantial growth during the 1960s. This group has nine cities accounting for 4 percent of the sample.

Type 11: "Accelerating High Growth Cities". This final grouping is composed of towns that have experienced an increase in the rate of housing growth over the 1950s and 1960s and a high rate of population growth in the 1960s. This group includes seven cities and accounts for three percent of the sample.

CONCLUSION. The results of the empirical analysis appear to support the proposition that communities tend to control growth to avoid adverse fiscal and environmental impacts and maintain the social and economic character of the community. The overall means and standard deviations of the variables indicates that the 228 communities tend to be faster growing, wealthier, whiter, and of a higher social status than national norms. The typing results, with the exception of Types 4 and 8, confirm the notion that communities attempt to control growth in order to avoid adverse environmental, social, economic, and fiscal changes. Types 1, 2, 3, 5, and 11 appear to have been confronted with excessive growth that has placed considerable pressure on farmlands and housing markets. Type 6 illustrates the fiscal impacts of rapid growth, and appears to be composed of communities that wish to avoid tax increases generated by continued growth. Types 7, 9, and 10 appear to be less concerned with the environmental impacts of continued growth than with the disruption of the current social and economic composition of the community. All score low on the minority cluster dimension, and high on income and wealth. The categorizing of Types 1, 2, 3, 5, and 11 as environmentally induced growth control, Type 6 as fiscally motivated, and Types 7, 9, and 10 as socially and economically motivated control tends to conform with notions of why communities act to limit growth. The poor showing of the fiscal motivations is disappointing, but may be also considered as part of the rationale for controlling growth of Types 7, 9, and 10.

A replication of the analysis for California communities found fiscal considerations to be extremely important in explaining growth control behavior. Fiscal variables show up in several of the cluster dimensions. Three of the nine California Types are characterized by their high tax rates and per capita debt. These three Types account for twenty-seven percent of the California sample, suggesting that, at least in California, fiscal considerations may be important in predisposing communities to control their growth.

The results of the empirical analysis suggest that adverse fiscal, environmental, and social and economic impacts play important roles in motivating communities to control growth. But because the data used in the empirical analysis are dated, and because they fail to tap more complex historical, political and institutional factors, the results are very tentative. A thorough confirmation of the results awaits the findings of more detailed case studies of growth-management communities.

Despite the tentative nature of the results, several implications for the reform of local land-use control are suggested. As pointed out in the introduction, much concern over the inflationary effects of local-growth management has surfaced recently. If policy-makers are to check the growing use of growth-management controls, they must identify and promote the use of less inflationary but equally efficient land-use control measures. The empirical evidence gives some insight about which avenues of reform are most promising. First, while not overwhelming and universal, fiscal impacts appear to play a major role in encouraging local communities to limit growth. Federal, state, and regional governments may want to consider alternative approaches to local-government finance so that the adverse fiscal impacts of growth can be offset.

The results also suggest that fiscal impacts are not the sole motivating factor behind growth control. The cluster dimensions suggest that environmental and social and economic impacts are also important motivations for growth control. Here, the prospects for effective land-use reform are not as clearcut. If growth control is the result of perceived environmental degradation, efforts to improve the ability of land-use planning to maintain environmental quality are urgently needed. Better methods for controlling air pollution, traffic congestion, and the conversion of prime agricultural land are clear alternatives to growth control. Emphasis needs to be placed on controlling the location and character of new development, not on stopping development. On the other hand, if growth control is the result of exclusionary social and economic motivations, efforts to check racial and economic discrimination must be taken.

Because of the multiplicity of growth-control motivations, the design and implementation of alternative land-use control mechanisms will be difficult. The results of the empirical analysis suggest that communities control growth for a variety of reasons and therefore efforts to check the spread of growth control present a major challenge to land-use policy reformers.

NOTES

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10. Office of Planning and Research, Local Government Planning Survey: 1975 (OPR, 1976).

11. Data came from Census of Local Governments, City and County Data Book, Census of Agriculture (U.S. Bureau of Census, various years.)

12. R.C. Tryon and D.E. Bailey, Cluster Analysis (McGraw-Hill, 1970).