Measuring the Invisible Wall: Land Use Controls and the Residential Patterns of the Poor

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The poor are not randomly distributed throughout the American metropolis. Within any metropolitan area, some political subdivisions—usually but not always the “central city”—contain a greater than average concentration of residences of the poor, while other political subdivisions—usually but not always the “suburbs”—contain a lower than average concentration. This phenomenon, which we shall call income group clustering, is thought by many observers to be highly undesirable for many reasons. It is seen as a symptom of social disorder, as an indication that constitutional norms are being violated, and as an obstacle to the realization of widely held public policy goals.¹ Consequently, litigation and legislative efforts have been mounted to reduce the degree of income group clustering.² A major target of the effort has been suburban land use controls, alleged to be a cause of clustering. The attack has led to judicial consideration of the equal protection issues involved,³ and has inspired several policy proposals currently under debate.⁴

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Part of the research was supported by grants from the National Science Foundation to the Yale Institution for Social and Policy Studies, and the Ford Foundation to the Yale Law School. Peter Busch and Mark Perlis have assisted us on much of this research. We wish to thank the Bureau of the Census for their cooperation in making the 1970 census data available to us.

1. See, e.g., NATIONAL COMMISSION ON URBAN PROBLEMS, BUILDING THE AMERICAN CITY, H.R. DOC. NO. 91-34, 91st Cong., 1st Sess. (1968) [hereinafter referred to as DOUGLAS COMM. REPORT]; PRESIDENT'S COMM. ON URBAN HOUSING, A DECENT HOME (1968); Gold & Davidoff, *The Supply and Availability of Land for Housing for Low- and Moderate-Income Families*, in 2 TECHNICAL STUDIES 287 (President's Committee on Urban Housing 1968); HEARING BEFORE THE UNITED STATES COMMISSION ON CIVIL RIGHTS, JUNE 14-17, 1971.

2. For a general discussion of this subject see Shields & Spector, *Opening Up the Suburbs: Notes on a Movement for Social Change*, 2 YALE REV. L. & SOC. ACTION 300 (1972).

3. See, e.g., *James v. Valtierra*, 402 U.S. 137 (1971), *rev'd*, *Valtierra v. Housing Authority*, 313 F. Supp. 1 (N.D. Cal. 1970); *Dailey v. City of Lawton*, 425 F.2d 1037 (10th Cir. 1970); *Southern Alameda Spanish Speaking Organization v. City of Union City*, 424 F.2d 291 (9th Cir. 1970); *Kennedy Park Homes Ass'n v. City of Lackawanna*, 318 F. Supp. 669 (W.D.N.Y. 1970), *aff'd*, 436 F.2d 108 (2d Cir. 1970), *cert. denied*, 401 U.S. 1010 (1971). In most of these cases—as is typical of cases attacking “exclusionary zoning” in its many forms—claims both of racial discrimination and of wealth discrimination are raised.

4. For a discussion of some proposals see CIVIL RIGHTS HEARINGS, *supra* note 1, at 828 (Testimony of David M. Trubek).

Until we know more about income group clustering, it is doubtful that the legal issues will be resolved or effective policies shaped. Because much more effort has been devoted to attacking and defending clustering than to understanding it, constitutional debate has been murky, and the potential effects of proposed legislative measures are unclear. This article attempts to fill the gap, by reporting and explaining a statistical study of clustering which we recently conducted.

By surveying American metropolitan areas, the study produces significant evidence that clustering is aggravated by the imposition of public land use controls—such as zoning—in the suburbs. It also suggests that such controls are not typically imposed for fiscal reasons, *i.e.*, to increase the taxable value of real property in the jurisdiction and to exclude low income residents who would heavily burden the jurisdiction's public services. Finally, the study finds that income group clustering is greater the more heavily non-white are the low income groups involved. These findings thus raise but do not resolve the question whether clustering results to a degree from racially motivated public controls. We stress that our conclusions are very tentative, and subject to many qualifications. They are presented not to close inquiry but to suggest the potential fruitfulness—and the limits—of ordinary statistical methods in investigating the etiology of income group clustering.

The First Section of the article identifies various factors which might conceivably explain clustering, and notes briefly how the resolution of several legal issues will depend in part on which factors are in fact operative. The Second Section selects from among the possible explanatory factors several which have especial relevance to constitutional law and social policy and describes our attempt to *quantify* these factors—*i.e.*, to fashion operational “variables” which plausibly represent the factors—so that the relative impact of each factor on clustering could be measured by statistical analysis. In the Third Section, we present and explain the results of our statistical analysis, and in the Fourth Section, we draw conclusions from these results.

I. Clustering: The Two Questions

A. *What Causes Clustering?*

Public land use controls may increase the degree of income group clustering in a straightforward manner. Controls—zoning, subdivision regulations, building codes, and the like—raise the cost to a family of

living in the controlled jurisdiction: the controls require a family to buy or rent more or better land or dwelling space than it might need,⁵ and they simultaneously reduce the total supply of residences in the community, thus creating an artificial shortage of residences, with a resultant rise in rents or sales prices. The poor are excluded because they cannot afford to move in.⁶

But income group clustering might occur even if suburbs were not surrounded by an "invisible wall" of public controls. Private restrictive covenants, running with the land, can control land uses almost as effectively as public controls and may thus constitute an invisible wall of their own. Further, some suburban land owners may individually sell or rent on a racially discriminatory basis, even at a sacrifice to their pecuniary profits: racial discrimination will result in income clustering because non-whites have on the average lower personal income than whites. Finally, some clustering—perhaps a great deal—might occur even if the real estate market were unconstrained by public controls and restrictive covenants and untainted by racial discrimination. The poor may be unable to afford to live in portions of the metropolis which—even in the absence of zoning and covenants—are universally thought desirable and in which, as a consequence of high buyer and renter demand, rents and sales prices are very high. (It is also possible, of course, that the poor *wish* to live among other poor.)

No social or legal policy can eliminate or substantially reduce clustering without addressing its causes. For policy formation, it is thus crucial to discover to what extent the observed degree of clustering in the United States results from, respectively, public land use controls, private covenants, racial discrimination by individual lessors and sellers, and the workings of an unconstrained market in which real properties are of various qualities and buyers have varying tastes and incomes.

5. A recent example of the cost-increasing type of requirements through which towns attempt to exclude poorer potential residents is found in *Molino v. Mayor of Glassboro*, 116 N.J. Super. 195, 281 A.2d 401 (1972). The zoning ordinance required, among other things, that each apartment have central air conditioning and an automatic garbage disposal, that each building have a master TV antenna, that there be an automatic laundry washer and dryer provided for every eight bedrooms, that there be eight square feet of swimming pool or tennis court area for every 100 square feet of living space, and that there be two off-street parking places for each unit, despite the fact that there could be an average of only 1.35 bedrooms per unit.

6. See DOUGLAS COMM. REPORT, *supra* note 1, at 214; Aloï, Goldberg & White, *Racial and Economic Segregation by Zoning: Death Knell for Home Rule?*, 1 U. TOLEDO L. REV. 65, 74-80 (1969); Bowe, *Regional Planning Versus Decentralized Land-Use Controls—Zoning for the Megalopolis*, 18 DEPAUL L. REV. 144, 155 (1968); Davidoff & Gold, *Exclusionary Zoning*, 1 YALE REV. L. & SOC. ACTION 56, 60 (1971); Davidoff & Davidoff, *Opening the Suburbs: Toward Inclusionary Land Use Controls*, 22 SYRACUSE L. REV. 509 (1971).

B. *What Motivates Imposition of Public Controls?*

Suppose one had identified and measured the relative weight of the several possible causes of clustering and discovered that public controls were prominent among them. There would remain a second empirical question relevant to the legal and social policy issues raised by income group clustering: What motivated public officials to impose *these controls*? An answer is important because the constitutionality of public controls may depend on the reasons animating their imposition; and because legal and social policies addressed to issues other than clustering may incidentally affect clustering if they strike at the factors which lead local authorities to impose land use controls.

Exclusionary zoning—constitutional attacks: A number of constitutional challenges have been mounted to the use of public land use controls by suburban and other jurisdictions,⁷ alleging that these controls prevent minority groups and the poor from residing in suburbs and thus discriminate against them in violation of the Equal Protection Clause. These challenges present difficult doctrinal issues on which the law is both unclear and in substantial flux.⁸ Here we aim only to indicate how the empirical issue of causation may affect the doctrinal debate.

The Equal Protection challenge rests on the assumption that state action is denying a constitutionally-protected right. The Equal Protection challengers assert that some lower income and minority groups would reside in jurisdictions imposing controls if the controls were lifted—contending that controls are at least one effective cause of clustering.

The challengers also allege, however, that controls are imposed for constitutionally proscribed motives. The suits thus move beyond the causes of clustering to delve into the causes of controls. To discover or measure what considerations animate the actions of public officials is, of course, a staggeringly complex task. "Motive" is important, however, because the constitutional defect of public controls must be demonstrated, if at all, through an indirect analysis. Public controls which expressly exclude racial groups or raise the cost of housing services beyond the means of expressly identified racial minorities are undoubtedly unconstitutional.⁹ Moreover, it is at least arguable that

7. See cases cited note 3 *supra*.

8. For a discussion of doctrinal problems, see Note, *The Equal Protection Clause and Exclusionary Zoning After Valtierra and Dandridge*, 81 YALE L.J. 61 (1971).

9. Zoning lines drawn on racial grounds were outlawed by *Buchanan v. Warley*, 245 U.S. 60 (1917). See also *Gomillion v. Lightfoot*, 364 U.S. 339 (1960); *Dailley v. City of Lawton*, 425 F.2d 1037 (10th Cir. 1970). Although no court has considered the issue

explicit exclusion of low income groups is constitutionally suspect.¹⁰ But public ordinances do not admit their purposes so baldly, and public officials typically justify the imposition of controls by reference to constitutionally neutral goals; *e.g.*, protection of health; preservation of property values; maintenance of an attractive physical environment; reduction of pressure on local services, and attraction of land uses which provide a favorable ratio of property tax generated to public services required.¹¹

To prevail, challengers of current controls probably must demonstrate that constitutionally permissible motives did not in fact animate imposition of the controls in question. This is a difficult burden: Whether the challenge is mounted on Due Process or Equal Protection grounds, the courts tend to presume the legitimacy of the legislation or ordinance creating the controls and to accept at face value the neutral motives asserted by challenged officials.¹² Further, challengers must probably do more than throw the asserted motives into serious question. They may also have to show at least that among the *actual* motives of the enacting jurisdiction were ones that are constitutionally impermissible.¹³

squarely, it would seem to follow that economic barriers explicitly and specifically created to exclude racial groups would be found to create an invidious classification. Of course, the "fit" between the group excluded and a racial minority would have to be close. *Cf. Note, The Equal Protection Clause and Exclusionary Zoning, supra* note 8.

10. *See* Southern Alameda Spanish Speaking Organization v. City of Union City, 424 F.2d 291 (9th Cir. 1970); *But cf.* James v. Valtierra, 402 U.S. 137 (1971).

11. For a discussion of this "fiscal motive," see Josephs v. Town Bd. of Clarkstown, 24 Misc. 2d 366, 368-69, 198 N.Y.S.2d 695, 699 (Sup. Ct. 1960); Becker, *The Police Power and Minimum Lot Zoning*, 1969 WASH. U.L.Q. 263, 282-86; Stuart & Teska, *Who Pays for What: A Cost-Revenue Analysis of Suburban Land Use Alternatives*, URBAN LAND, March, 1971, at 3-16.

12. *See, e.g.*, James v. Valtierra, 402 U.S. 137 (1971).

13. The doctrinal issues are complex. There are some indications that the courts will invalidate a law neutral on its face if it can be shown to be motivated by racial animus. *Gomillion v. Lightfoot*, 364 U.S. 339 (1960). But there are contrary indications in recent cases. *See* Jefferson v. Hackney, 406 U.S. 535 (1972); *Palmer v. Thompson*, 403 U.S. 217 (1971). The confusion and difficulty may stem more from the problem of proving motive than from any feeling that racially-motivated but formally neutral laws should stand. In most cases "motive" is difficult to identify: The truly biased legislator or administrator rarely makes his views public. Some cases have suggested that a neutral law placing a heavier burden on racial minority groups than on the populace generally should be presumed to have been motivated by racial animus and thus should fall before the Fourteenth Amendment. *See* Hunter v. Erickson, 393 U.S. 385 (1969); *Reitman v. Mulkey*, 387 U.S. 369 (1967); *Kennedy Park Homes Ass'n v. City of Lackawanna*, 436 F.2d 103 (2d Cir. 1970), *cert. denied*, 401 U.S. 1010 (1971); *Southern Alameda Spanish Speaking Organization v. City of Union City*, 424 F.2d 291 (9th Cir. 1970); *Norwalk CORE v. Norwalk Redevelopment Agency*, 395 (2d Cir. 1968); *Hobson v. Hansen*, 269 F. Supp. 401 (D.D.C. 1967). But recent Supreme Court opinions have cast considerable doubt on this principle. *See* Jefferson v. Hackney, *supra*; James v. Valtierra 402 U.S. 137 (1971); *Dandridge v. Williams*, 397 U.S. 471 (1969). For discussion of doctrinal issues, *see* Brest, *Palmer v. Thompson: An Approach to the Problem of Unconstitutional Legislative Motive*, 1971 THE SUPREME COURT REVIEW 95; Ely, *Legislative and Administrative Motivation in Constitutional Law*, 79 YALE L.J. 1205 (1970).

While the doctrine on racial motive and effect is unclear, the law in the area of

The list of impermissible motives is not long. It almost surely includes racial motivation. Whether a motive to exclude low income groups generally is constitutionally impermissible is less certain. We suggested above that an ordinance might well fall if it expressly prohibited or expressly made especially costly the immigration of low income groups. But it is an open question whether an ordinance which, on its face, merely requires large lot sizes or which prohibits multi-family structures becomes invalid if the motive for its passage is shown to be the exclusion of low income groups.

The question is important because many observers believe that such ordinances are typically enacted for fiscal reasons: to exclude both new low income housing, which adds relatively little to the jurisdiction's property tax base, and the low income inhabitants of such housing, who impose high demands on local public services, especially education.¹⁴ This "fiscal motive" looms large, at least as a hypothesis, because local governments in the United States finance themselves heavily through the local property tax and because these governments are frequently charged with providing services, such as welfare and education, of which the poor make relatively heavy use.¹⁵

economic exclusion is even more murky. Opponents of exclusionary zoning have reposed great hopes in the development of a doctrine of "substantive equal protection" and in the expansion of this doctrine to cover land-use controls whose intent or effects were to disadvantage the poor. See, e.g., Sager, *Tight Little Islands: Exclusionary Zoning, Equal Protection and the Indigent*, 21 STAN. L. REV. 767 (1969); Note, *Exclusionary Zoning and Equal Protection*, 84 HARV. L. REV. 1645 (1971). These efforts received some encouragement in the lower federal courts; see, e.g., *Southern Alameda Spanish Speaking Organization v. City of Union City*, 424 F.2d 291 (9th Cir. 1970). But to date the Supreme Court has refused to take this doctrinal step. See *James v. Valtierra*, 402 U.S. 137, 143 (1971) (dissent of Marshall, J.). Since the court has not yet specifically defined any substantive "right to housing" or "access to housing" under the Fourteenth Amendment, judges have given little attention to the constitutional significance, if any, of the existence of an economically segregating motive or effect behind land-use controls and other public measures. Commentators, however, have argued that race and class motives underlie these measures. For critical discussion of the "fiscal motive" theory and suggestions that racial and class motives lie behind land-use controls, see Babcock & Bosselman, *Suburban Zoning and the Apartment Boom*, 111 U. PA. L. REV. 1040, 1068-72 (1963); Davidoff & Davidoff, *supra* note 6.

14. On fiscal motive see D. NETZER, *ECONOMICS AND URBAN PROBLEMS: DIAGNOSES AND PRESCRIPTIONS* 192 (1970); W. ISARD & R. COUGHLIN, *MUNICIPAL COSTS AND REVENUES* (1957); Margolis, *On Municipal Land Policy for Fiscal Gains*, 9 NAT. TAX J. 247 (1956). See also the many studies by which towns determine whether to disallow various types of land use based on cost-benefit analyses, e.g., Stuart & Teska, *supra* note 11; BOARD OF EDUC., SCHOOL DIST. 68, SKOKIE, ILLINOIS, *A STUDY OF THE EFFECT OF ZONING ON PUPIL ENROLLMENT AND FINANCIAL SUPPORT OF AN ELEMENTARY SCHOOL*; Del Guidice, *Cost-Revenue Implications of High-Rise Apartments*, URBAN LAND, February, 1963, at 3; and the many studies cited in R. MACE, *MUNICIPAL COST-REVENUE RESEARCH IN THE UNITED STATES* (1961).

15. On "exclusionary" practices, see DOUGLAS COMM. REPORT, *supra* note 1, at 199, 212, 214; PRESIDENT'S COMM. ON URBAN HOUSING, *A DECENT HOME* 14243 (1968); Gold & Davidoff, *supra* note 1, at 59. In 1966-67, forty-three percent of local government revenues were derived from the property tax. By comparison, all other local taxes contributed only 6.8% of local revenues. U.S. BUREAU OF THE CENSUS, *4 CENSUS OF GOVERNMENTS*, 1967, No. 5: COMENDIUM OF GOVERNMENT FINANCES, Table 4 (1969).

Both municipal revenues and municipal costs are substantially affected by the type

If a bare motive to exclude low income groups is constitutionally impermissible, the "fiscal motive" is at least suspect. Those who profess it are admitting that they *intend* to exclude the poor and are merely suggesting that their intent is excusable because their ultimate goal, *i.e.*, fiscal benefits for themselves, is "neutral." This is somewhat different from the reasoning which validates public controls imposed for motives such as public health, safety and aesthetics. In these cases, the defendant *disavows* any intention to exclude the poor, and claims that the de facto exclusion of the poor is merely an unfortunate incident of pursuing an unrelated and permissible goal.

At any rate, the constitutional issues surrounding "exclusionary" zoning clearly depend in large part on two distinct factual questions: (1) Do such public controls appreciably contribute to income group clustering (and thus inevitably to racial clustering)? (2) Is the imposition of such controls animated by racial motives, fiscal motives, a non-fiscal motive to exclude the poor, or by clearly permissible "neutral" motives? The answers to these questions will obviously vary both between metropolitan areas and within each area over time. Statistical studies like ours, which attempt to illuminate the issues of causation and motivation for the nation as a whole at a particular point in time, cannot themselves settle the empirical questions that arise in specific law suits concerned with specific controls in specific suburbs.

By showing national tendencies, however, such general statistical studies, if sufficiently refined, can indicate what sorts of rebuttable presumptions the courts ought to entertain. If, for instance, it were shown that public controls and clustering were strongly correlated across the nation, a court might be well advised to impose on the defending local government the burden of proving that, in the specific case at hand, public controls were not in fact the crucial barrier to an immigration of poor families. Similarly, if a particular motive were shown to animate (or not to animate) controls in many instances nationally, the burden of proof should, arguably, be imposed on the

of land use allowed in the town. Certain uses, such as industry, generate high revenues and require small increases in municipal budgets. Such uses are considered to be good "tax-ratables." Other uses generate low amounts of taxes in relationship to the demands they create for additional services. See Schmandt, *Municipal Control of Urban Expansion*, 29 FORD. L. REV. 637, 651 (1961); Barnes & Raymond, *The Fiscal Approach to Land Use Planning*, 21 J. AM. INST. PLANNERS 71 (1955); G. ESSER, ARE NEW RESIDENTIAL AREAS A TAX LIABILITY? (1956); Williams & Wacks, *Segregation of Residential Areas Along Economic Lines: Lionshead Lake Revisited*, 1969 WIS. L. REV. 827, 828-29; Stuart & Teska, *supra* note 11; Williams, *The Three Systems of Land Use Control*, 25 RUTGERS L. REV. 80, 82-85 (1970). According to one study, the effect of lot size on minimum housing cost has been greatly overemphasized. URBAN LAND INSTITUTE, THE EFFECTS OF LARGE LOT SIZE ON RESIDENTIAL DEVELOPMENT (Technical Bull. 32 1958).

party claiming that that motive was absent (present) in the particular case at bar.

Other Attacks on Clustering and Related Measures: Recent court decisions such as *Serrano*¹⁶ and *Rodriguez*¹⁷ have challenged the system of financing education through the real property tax.¹⁸ If the fiscal motive theory is correct, these decisions may eliminate exclusionary land use controls by eliminating the animating reasons for their enactment. If, however, the fiscal motive theory is not a valid explanation for exclusionary practices, it would be rash to expect that educational finance reform will, like Joshua's trumpet, bring down the invisible wall.

Similarly, data on the causes of clustering and the motives for controls are needed to assess proposed statutory remedies for clustering. Any efforts, for example, to structure statutes that might curb the effects of exclusionary zoning must take into account the underlying forces that have led to them.¹⁹ Also, the role of fair housing legislation and other civil rights measures in limiting clustering cannot be predicted until we know whether minority racial groups are frozen out of white suburbs by private discrimination or by "neutral" land use controls, imposed by restrictive covenants or by local governments.

II. Definitions of Variables and Methods of Study

A. *The Approach*

Our study, based primarily on census data, measures variations in the degree of income group clustering among America's major metropolitan areas and examines whether these variations are correlated with inter-area variations in factors which we associate, respectively, with the racial motive and the fiscal motive for imposing public land use controls. About this approach, three preliminary comments are necessary.

First, our study presents only a "snapshot" of the United States at a particular point in time. That is, we have been concerned only with differences in clustering between different metropolitan areas, rather

16. *Serrano v. Priest*, 5 Cal. 3d 584, 487 P.2d 1241, 96 Cal. Rptr. 601 (1971).

17. *Rodriguez v. San Antonio Independent School Dist.* (W.D. Tex. 1972), *prob. juris. noted*, 406 U.S. 966 (1972).

18. See also *Robinson v. Cahill*, 118 N.J. Super. 223, 287 A.2d 187 (1972); *Van Dusartz v. Hatfield*, 334 F. Supp. 870 (D. Minn. 1971). *Contra Spano v. Bd. of Educ. of Lakeland Central School Dist. No. 1*, 68 Misc. 2d 804, 328 N.Y.S.2d 229 (Sup. Ct. 1972).

19. See CIVIL RIGHTS HEARINGS, *supra* note 1, at 828 (testimony of David M. Trubek).

than with variations in the degree of clustering which occur within each area over time. Trends over time are obviously important for policy analysis, but reliable census data for metropolitan areas are available only decennially, and only the two most recent censuses presented data in a sufficiently detailed manner for our purposes.

Second, our study—like any statistical study—deals only with correlations, *i.e.*, associations, between variables. The fact that changes in variable A are highly correlated with changes in variable B does not itself prove that the changes in B are causing the changes in A. The reverse might equally be the case, or it might be that changes in some undetected variable, C, are causing the observed changes in *both* A and B. Suppose, for instance, that in comparing one city with another we find that, in the latter, people both work longer hours and have shorter life-spans. This bare correlation between work hours and life-span is consistent with three divergent hypotheses: that long hours shorten life, that people who know their lives will be short choose to work long hours, and that some third factor, *e.g.*, poverty, causes both long work hours and a short life-span. Further statistical study might permit us to narrow the possibilities, but at some point we would probably have to invoke experience and common sense to interpret the raw correlations. The correlations we establish in our study often permit of several hypotheses. At times a rough standard of plausibility must be invoked to decide between hypotheses; at other times, we simply leave the question open for further investigation.

Third, our study unfortunately mixes together the two distinct questions which, in the previous section, we noted as being important for purposes of policy: (1) To what extent is clustering caused by public land use controls, rather than other factors—such as restrictive covenants, the racial attitudes of individual sellers and renters, or free market bidding for locations made desirable by factors other than land-use controls? (2) What motivates local officials to impose public land-use controls? An ideal statistical study would proceed in two steps. First, it would measure the correlation between inter-area variations in income group clustering, on the one hand, and inter-area variations in public controls on the other hand. Next, it would measure the correlation between inter-area variations in controls and inter-area variations in factors associated with the possible motives for imposing controls. But such an approach would require, at both stages, quantification and measurement of the extent to which “controls” are imposed in metropolitan areas. We found this an impossible task: controls take myriad forms, from lot size zoning to building codes, and there is no

objective method by which all these devices can be compared, measured, and ranked along a single quantitative scale. Even if such an objective method were found—which we think unlikely—the costs in data gathering would be enormous.

Therefore, our approach represents a compromise. Rather than proceeding in two steps, our study probes directly the relationship between various “motives” and clustering. Findings about this relationship require cautious interpretation: some of the factors which we associate with the fiscal and racial motives may themselves operate through the *private* real estate market to aggravate clustering. Thus, if we find that a particular “motive”-factor correlates with clustering, it need not follow that that “motive” in fact animated public officials to impose controls which then caused the observed degree of clustering. Rather, we may merely have isolated a factor which influenced the preferences of buyers toward clustering or which encouraged sellers and renters to discriminate individually or to execute restrictive covenants regarding land use. Despite all these qualifications, however, our study does provide *some* indication that public controls influence the degree of clustering and *some* information about the motives which influence imposition of public controls. Further discussion of our results, however, must await a fuller description of the study itself.

B. *The Variables*

Clustering (Y): The Dependent Variable

Our first task was to develop a way to measure income group clustering. We decided to look at the patterns of where poor people actually live and to contrast these patterns with a hypothesized “norm” of dispersion. The norm we selected was that the poor people as a percent of municipal population be the same for every town in a metropolitan region. We define the deviation between this arbitrary norm and actual patterns as the degree of “clustering” present.

It was, of course, necessary to define a standard of poverty. Food, housing, and clothing are the major items purchased by the poor. Due to differences in climate and geography, the costs of these items differ in various urban areas. Rather than use the same absolute monetary definition for all metropolitan areas, we defined poverty in relative terms for each metropolitan area. Consider the analysis for 1960. For each metropolitan area, we defined as poor any family which had less than the median family income in 1959, rounded to the nearest one thousand dollars. Thus our “poverty” standard is considerably higher

than the \$3,000 usually used in government publications.²⁰ For example, in 1959 the median family income in the New York metropolitan area was \$6,696; we round this to \$7,000 and consider as poor all families with a 1959 income below \$7,000. By this definition, in the New York metropolitan area 54 percent of the families were poor in 1959. We then computed the proportion of poor families in each town in the New York metropolitan area; this ranged, in 1959, from 6.7 percent in East Hills to 79.5 percent in Mastic Shirley.

We next sought to summarize the information about residential patterns in each metropolitan area into a single number, *i.e.*, a clustering index, so that we could compare clustering between metropolitan areas.

To appreciate the complexity of this task, consider two hypothetical metropolitan areas, A and B, each having 100,000 persons:

	metropolitan area A			metropolitan area B		
	total population	poor	poor as percent of total	total population	poor	poor as percent of total
town 1	40,000	10,000	25	38,500	8,500	22.1
town 2	10,000	0	0	11,500	1,500	13.0
town 3	50,000	40,000	80	50,000	40,000	80
	100,000	50,000	50	100,000	50,000	50

In each area town 3, the central city, has half the metropolitan population and has 80 percent of the poor, and each area has two suburbs, towns 1 and 2. Which metropolitan area deviates more from our norm of an equal proportion of poor in each town? From the point of view of the mayor of the central city (town 3), both areas represent an equal degree of clustering, since in both hypothetical cases the central city has 80 percent of the poor. A poor person might consider area B to be less “clustered,” since the poor there can live in either of two suburbs, as compared to only one suburb in area A. On the other hand, town 1 in area A is nearer the norm of fifty percent poor than town 1 in area B (and town 2 is further away from the norm in area A than in area B). In constructing an index, what weights should be used to “average” the clustering of town 1 and the clustering of town 2?²¹

20. We chose median income to define the “poor” so as to capture exclusionary effects aimed at buyers and renters of *unsubsidized* “cheap” housing. We did not wish to investigate only the exclusion of low income subsidized housing projects.

21. We could have weighted the clustering of each town by its residential land area, so that towns with a large amount of residential land count for more than small towns. We rejected this scheme because (1) we could not obtain data on the amount of land considered by local observers to be residential in each town in each metropolitan area and (2) the amount of residential land in a town depends on the amount of money available for converting land to residential uses; one could consider a body of water as “residential land,” since homes can be built over water.

We also rejected weighting each town by the number of its poor inhabitants, since a town with very exclusionary zoning would have no poor and so receive a weight of

Any set of weights is somewhat arbitrary. We decided to weight the deviation of the poor in each town from the percentage of the poor in the entire metropolitan population by the relative population of the town, *i.e.*, its share of the total metropolitan population. If all the towns in an area met our norm, the index for the area would be zero.

We call the resulting index for each area the clustering index²² and

TABLE I

Metropolitan Area (1)	1970 Population (thousands) (2)	Median Family Income		Clustering Index of Poor Families	
		1959 \$ (3)	1969 \$ (4)	1960 Census (5)	1970 Census (6)
Birmingham, Ala.	739	5,103	8,499	144	206
Los Angeles, Cal.	7,030	7,066	11,286	71	112
Sacramento, Cal.	801	7,100	10,362	107	70
San Diego, Cal.	1,358	6,545	10,133	45	41
San Francisco-Oakland, Cal.	3,116	7,092	11,762	71	129
San Jose, Cal.	1,065	7,417	12,456	78	83
Denver, Col.	1,228	6,551	10,777	39	118
Miami, Fla.	1,268	5,348	9,245	192	227
Atlanta, Ga.	1,390	5,758	10,695	71	171
Baltimore, Md.	2,070	6,199	10,566	111	176
Boston, Mass.	2,754	6,687	11,449	131	179
Detroit, Mich.	4,200	6,825	12,117	130	184
Minneapolis-St. Paul, Minn.	1,814	6,840	11,682	86	169
Buffalo, N.Y.	1,349	6,455	10,430	103	119
Akron, Ohio	679	6,735	11,047	50	98
Cleveland, Ohio	2,064	6,962	11,417	219	236
Columbus, Ohio	916	6,425	10,460	121	122
Dayton, Ohio	850	6,687	11,234	144	198
Pittsburgh, Pa.	2,401	5,954	9,737	142	130
Providence, R.I.	911	5,666	9,929	70	95
Dallas, Texas	1,556	5,925	10,405	59	82
Fort Worth, Texas	762	5,617	10,101	62	98
Seattle, Wash.	1,822	6,896	11,033	40	102
Milwaukee, Wis.	1,404	6,995	11,291	96	156
Chicago, Ill.-Ind.	7,612	7,268	11,841	134	191
Kansas City, Mo.-Kan.	1,254	6,317	10,623	136	142
St. Louis, Mo.-Ill.	2,363	6,275	10,546	228	293
New York, N.Y.-N.J.	16,179	6,696	11,169	129	174
Cincinnati, Ohio-Ky.	1,385	6,318	10,257	118	192
Philadelphia, Pa.-N.J.	4,817	6,433	10,783	135	101
Total of Above	77,157				
Total of U.S.	203,200				
Total of U.S. Metro.	139,400				
Percent of Metro.	55.3				
Percent of U.S.	38.0				

zero. Nor did we want to give each town in a metropolitan area an equal weight since the number of towns in a metropolitan area depends heavily on state annexation laws and historical factors and ranges, in our sample, in 1960 from nine in Akron to 300 in New York.

22. Let p_i be the proportion of the population in town i that is poor and let w_i be the proportion of the metropolitan population living in town i . Let p be the proportion of poor families in the entire metropolitan population. Then the clustering index for a metropolitan area with n towns is

$$\sum_{i=1}^n w_i (p - p_i)^2$$

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show in columns 5 and 6 of Table I²³ its value for each metropolitan area in our sample for 1960 and 1970.²⁴

A comparison of columns 5 and 6 in Table I reveals that the ranking of areas by the clustering of their poor families is similar in both 1959 and 1969.²⁵ In only four of the thirty metropolitan areas—Sacramento, San Diego, Pittsburgh, and Philadelphia—were the poor less concentrated in 1970 than in 1960.²⁶

Our sample consists of the two Standard Consolidated Areas—New York²⁷ and Chicago—and twenty-eight Standard Metropolitan Statistical Areas (SMSA's).²⁸ The twenty-eight SMSA's were chosen from among 327 SMSA's other than New York and Chicago on criteria set out in the note.²⁹ Our sample area contains fifty-five percent of the metropolitan population of the United States in 1970.

For the two hypothetical metropolitan areas in the text, the clustering indices are:
area A: $.4(.50 - .25)^2 + .1(.5 - 0)^2 + .5(.5 - .8)^2 = .095$

area B: $.385(.50 - .221)^2 + .115(.50 - .13)^2 + .5(.5 - .8)^2 = .0907$

23. In Table I we multiply each actual clustering index by 10,000 to avoid decimals.

24. The 1970 index uses 1969 income.

25. The correlation between 1959 rankings and the 1969 rankings is .71.

26. It is interesting to note that two out of the four SMSA's which showed a decline in concentration of the poor during the decade were in Pennsylvania. This state has consistently restricted local zoning powers more stringently than most other states. Moreover, during the 1960's Pennsylvania courts struck down a number of exclusionary land-use practices, including bans on multi-family dwellings and large lot zoning. *See, e.g.,* Concord Twp. Appeal, 439 Pa. 466, 268 A.2d 765 (1970); Girsch Appeal, 437 Pa. 237, 273 A.2d 395 (1970); National Land & Inv. Co. v. Easttown Twp. Bd. of Adjustment, 419 Pa. 237, 273 A.2d 395 (1970).

27. One might note that New York, which is the origin of much of the publicity on "exclusionary zoning," and is one of the few areas where detailed data on actual zoning policies have been collected, ranked twelfth in the amount of clustering in 1959 and eleventh in 1969.

28. The federal government defines a standard metropolitan statistical area as an integrated economic and social unit with a large population nucleus. More specifically, "each standard metropolitan statistical area must contain at least one city of at least 50,000 inhabitants The standard metropolitan statistical area will then include the county of such a central city, and adjacent counties that are found to be metropolitan in character and economically and socially integrated with the county of the central city. In New England the requirement with regard to a central city as a nucleus still holds, but the units comprising the area are the towns rather than counties." U.S. BUREAU OF THE CENSUS, STANDARD METROPOLITAN STATISTICAL AREAS 1967, at vii-viii (1967). The New York Standard Consolidated Area consists of the New York SMSA, Newark SMSA, Jersey City SMSA, Paterson-Clifton-Passaic SMSA, Middlesex County and Somerset County. The Chicago Standard Consolidated Area consists of the Chicago SMSA and the Gary-Hammond-East Chicago SMSA. We use 1960 definitions of each SMSA.

29. (1) The SMSA was among the fifty largest SMSA's as of July 1, 1968;

(2) the SMSA has one city of at least 150,000 population in both 1960 and 1970; this excluded San Bernardino-Riverside-Ontario and Albany-Schenectady-Troy;

(3) the Washington, D.C. SMSA is omitted because the District of Columbia does not receive funds from a state government;

(4) Newark and Paterson-Clifton-Passaic are omitted because they are part of the New York Standard Consolidated Area;

(5) Anaheim-Santa Ana-Garden Grove is not counted separately but is included in the Los Angeles SMSA;

(6) the SMSA (a) has at least fifteen "places" of over 2,500 population (Census data for our variables do not exist for smaller "places") or (b) had nine or more "places" in 1960, with the suburban "places" having at least half

Explanatory Variable—Fiscal Incentives (X_1 , X_2 , X_3 , X_4)

We surmise that individuals and local governments are concerned with the fiscal implications of having poor families to the extent that (1) the local property tax absorbs a large proportion of the local citizens' income, (2) the local property tax is an important source of local revenues, (3) the local government finances a large fraction of local expenditures, and (4) the allocation of state funds among communities ignores the number of poor families in the community. These four factors taken together measure the "strength" of the fiscal incentive for imposing land use controls. We label them X_1 , X_2 , X_3 , X_4 and define them more precisely as follows:

X_1 —*property tax burden*: As an index of the importance of the local property tax, for each of the thirty metropolitan areas, we measure the local property tax as a proportion of personal income in the 1950's and in the 1960's;³⁰ in the 1950's this ranged from 1.7 percent in Birmingham to 5.4 percent in Boston, and in the 1960's from 1.8 percent in Birmingham to 6.1 percent in Boston.³¹

X_2 —*municipal property tax dependence*: This measures the percentage of total local government revenues in the entire metropolitan area that accrue from the local property tax. This ranged in the 1950's from 30.5 percent in Birmingham to 69.8 percent in Providence, and in the 1960's from 26.6 percent in Birmingham to 65.8 percent in Providence.

X_3 —*local school burden*: On the expenditure side, we examined only education, because it represents the largest single item in the budget of local governments and because it responds more to changes in local population than many other items in the local budget. As a measure of the relative burden on local taxpayers, we used the proportion of expenditures on local schools that is financed by the local property tax. In 1957 this ranged from 18.8 percent in Birmingham to 87.7 percent

the suburban population. (We denote as "suburbs" all places within a SMSA which are not considered by the Census Bureau to be "central cities.") We wish to exclude SMSA's with only a few suburbs unless these few suburbs contain a majority of the population living outside the central city. Thus Akron, Columbus, and Sacramento were included although they contain less than fifteen suburban "places," but the following were excluded: Houston, Phoenix, New Orleans, Indianapolis, Portland (Oregon), Tampa, St. Petersburg, Rochester, San Antonio, Hartford, Louisville, Bridgeport, Memphis, New Haven, and Toledo.

30. The proportion for the 1950's was that found in 1957. The proportion for the 1960's was the average of that in 1962 and 1967. The source of this data is the *Census of Governments*, which was published, during these decades, only in the above years.

31. We do not use the ratio of the property tax to property values because we consider income a superior measure of people's ability to pay.

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in Boston, and in 1967 this ranged from 16.1 percent in Birmingham to 81.6 percent in Boston.

X₄—educational equalization formula: States allocate educational funds by formulas which, at one extreme, ignore differences in the wealth of local communities and, at the other extreme, enable poor school districts to spend as much as wealthy ones. Because of the absence of an effective objective indicator of educational equalization, we examined the educational aid formulas contained in past and present state statutes and the commentary on many of them contained in the works in this field,³² and from this information we created a series of ratings of effectiveness of equalization for each state for each year, from 1950 to 1959, and from 1960 to 1969. Ratings from one to ten were assigned, one for a strict flat grant system or the equivalent, ten for a plan in which all aid was equalizing. Theoretically, a rating below one could be achieved, since some aid has been given out in direct proportion to wealth, but no state achieved either this dubious distinction or a rating above nine. For those seven metropolitan areas covering two states,³³ we computed an equalization rating as the rating for each state weighted by the proportion of metropolitan population in each state.

We considered that a state aid formula was more equalizing to the extent that:

- (1) A larger proportion of the aid was equalizing aid, rather than flat grant aid, in actual effect.
- (2) There were no (or low) floors and no (or high) ceilings on equalizing aid.
- (3) There was "negative" aid for especially wealthy districts (found only in Utah).
- (4) The local share was a large proportion of total local costs. (Where the local share was particularly low, as in Washington, Georgia, Florida, and Alabama, even though all aid may have been nominally equalizing, some was effectively flat grant, since all districts received *some* aid.)
- (5) The state provided no increase in aid to those districts employing better qualified teachers.
- (6) The foundation level approached the level of actual costs.

32. J. BURKHEAD, *PUBLIC SCHOOL FINANCE, ECONOMICS AND POLITICS* (1964); J. COONS, W. CLUNE & S. SUGARMAN, *PRIVATE WEALTH AND PUBLIC EDUCATION* (1970); R. GARVUE, *MODERN PUBLIC SCHOOL FINANCE* (1969).

33. Chicago, Cincinnati, Kansas City, New York, Philadelphia, Providence, and St. Louis.

- (7) The state matched local effort above the foundation level on an equalizing basis.
- (8) The state did not match local effort above the foundation level on a strictly matching basis.
- (9) There was special aid for districts with high proportions of children from low income or AFDC families.
- (10) Local taxes were levied or redistributed by a larger unit of government, such as the county.
- (11) There was special aid for high tax districts.
- (12) Actual rather than theoretical costs were used to determine the foundation level.
- (13) Aid was not increased for consolidated school districts.

In the 1950's the most equalizing state was Pennsylvania and the least equalizing was Washington; in the 1960's the most equalizing state was Wisconsin and the least equalizing was Ohio.

Note that, if the fiscal motive is important, one would expect this variable to vary inversely with clustering. The other fiscal variables, by contrast, would be expected to vary directly with clustering.

Explanatory Variable—"race" (X_5)

We conjectured that racial discrimination motivates government policy and also affects covenanting and other behavior on the private real estate market. Thus, we calculated the proportion of the metropolitan population in 1960 or 1970 that was either Black or "Spanish Heritage"³⁴ and predicted that the greater the proportion of these two minority groups in the population, the greater would be income group clustering. In 1960 this proportion ranged from 1.95 percent in the Minneapolis SMSA to 34.6 percent in the Birmingham SMSA, and in 1970 it ranged from 2.7 percent in the Minneapolis SMSA to 38.6 percent in the Miami SMSA.

Explanatory Variable—housing availability (X_6)

We include a low-cost housing "availability" variable, lagged by nine years. We do this for two reasons. First, it helps us measure (and hold constant) the spatial distribution of poor people one decade before

34. We followed the Census Bureau definition as to Spanish Heritage. In 1970 this meant "persons of Spanish language or Spanish surname" in New Mexico, Colorado, Arizona, California, and Texas; "persons of Puerto Rican birth or parentage" in New York, New Jersey, and Connecticut; and "persons of Spanish language" in all other states. In 1960, this meant "persons of Spanish surname" in New Mexico, Colorado, Arizona, California, and Texas and "persons of Puerto Rican birth or parentage" in all other states.

the year in question, and thus to account for the multitude of historical factors peculiar to each metropolitan area. Second, to the extent that, for one reason or another, a community had low-cost housing occupied by families of above median income a decade before our clustering observations, this variable measures the “built-in” ability of the community to increase its proportion of poor families through remodelling, the filtering process, or other forms of “down-grading.”

This variable is computed in a fashion closely related to that used to compute clustering. Consider the analysis of housing availability before 1960. We deflate each 1959 SMSA median income by the change in the consumer price index for housing in the metropolitan area during the 1950's.³⁵ For each locality in the metropolitan area, we then compute the percentage of units which in 1950 could be afforded by poor families living in the SMSA in 1959. We assume that these dwellings include (a) rental units renting for twenty percent or less of the deflated 1959 SMSA median income and (b) owner-occupied units for sale at no more than two times the deflated 1959 SMSA median annual income. The weighted variance in the percentage among the different localities within the SMSA is then computed and serves as our housing availability variable in the 1960 analysis. An analogous procedure is followed for the 1970 analysis.

Explanatory variable—zoning fragmentation (X_7)

There is substantial variation in the “balkanization” of land-use control powers in metropolitan regions. The number of zoning authorities per million persons ranged in 1957 from 3.7 in the Baltimore metropolitan area to 132.1 in the Pittsburgh metropolitan area; in 1967 the number ranged from eight in the Sacramento area to 128.2 in the Pittsburgh area. Under prevailing law each separate authority can act autonomously. We conjecture that the degree of fragmentation of land-use control power should affect the nature of the decisions that are made. The existence of large numbers of small districts may encourage each district to look after its own interests without considering regional impact. The smaller the unit, the more likely that voters will reflect relatively uniform values and interests. All other things being equal, the greater the number of zoning authorities in a metropolitan area, the more clustering should occur.

35. For those eleven SMSA's for which the consumer price index for housing is not published, we use the average housing price index for other SMSA's in the state or, in the 4 cases for which there is no index for any SMSA in the state, we use the national housing price index. Price indices are from U.S. BUREAU OF LABOR STATISTICS, HANDBOOK OF LABOR STATISTICS 1971 Table 118 (1972).

The values for our seven explanatory variables are set out in the Appendix.³⁶

III. Results

The extent of correlation between one variable and a set of "explanatory variables" may range between zero and one hundred percent. In the social sciences correlations are rarely as high as in the natural sciences. For example, the "Coleman Report" on factors influencing student achievement was able to "explain" only about twenty percent of the variation of scores on a verbal test in a sample of 570,000 school pupils in the U.S.³⁷

The seven variables in our study together "explain" fifty-five percent of the variation in the dispersion of poor families in our thirty metropolitan areas.³⁸

The most significant explanatory variables are the "availability" of housing (X_6), the racial composition of the metropolitan population (X_5), and the number of zoning authorities per million persons (X_7). These three variables all influence clustering in the direction indicated by our conjectures. Our results indicate that the clustering index is larger, all other things equal, (1) the greater the number of zoning authorities, (2) the greater the proportion of racial minorities, and (3) the more concentrated was the housing stock a decade earlier. The proportion of the local school budgets that is financed locally (X_3) is only weakly related to the degree of clustering.

By contrast, the other three fiscal variables—local property tax as percentage of personal income (X_1), local property tax as a percentage of local revenues (X_2) and state educational equalization formula (X_4)—have no statistically significant impact on clustering after the impact of the other variables has been taken into account. (In addition to being statistically insignificant, the coefficient of X_4 is positive rather

36. We did not include a variable for the dispersion of jobs for two reasons, one practical and one theoretical. We did not have good data on the physical dispersion of jobs that a poor person might reasonably be expected to fill. As for theory: if all jobs were located in one area and if poor people had equal access to all residential land within the metropolitan area, then we would expect poor people to live in a circle whose center would be the place of employment; if there are several concentrations of jobs for the poor, we would expect each to have poor people living in a circle about it, and our clustering index cannot distinguish these two alternative patterns.

37. OFFICE OF EDUCATION, U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, *EQUALITY OF EDUCATIONAL OPPORTUNITY (COLEMAN REPORT)* (1966).

38. The "F ratio" is 9.16, which indicates that the probability that our results could occur by chance is less than one percent.

than, as conjectured, negative and the coefficient of X_2 is negative rather than, as conjectured, positive.)

These results are derived through the technique of least squares regression and are well summarized in a regression equation:³⁹

$$Y = .27X_1 - .54X_2 + .82X_3 + 2.83X_4 + 2.93X_5 + .14X_6 + .72X_7$$

(.35) (-.61) (1.80) (.62) (3.76) (4.01) (3.09)

The coefficient for each explanatory variable indicates its impact on the dependent variable—the clustering index—when all other explanatory variables are held constant. Below each coefficient we indicate in parentheses the ratio of the coefficient to its standard error; the larger the absolute value of this ratio (the T-ratio) the more confidence one has that the coefficient is significant, *i.e.*, that the variable in question has an influence on clustering.⁴⁰

IV. Legal and Policy Implications: Preliminary Speculations

A—The Fiscal Motive

The first, and perhaps clearest, implication of the study for policy-making is negative; we find no substantial relationship between residential patterns and fiscal incentives for imposition of controls. There is some evidence that a reduction in the locally funded share of school expenditures might have some slight impact on residential patterns,

39. Least squares regression is a standard statistical technique for finding the equation which best predicts the dependent variable—in our case, the clustering index of poor families—from the observed values of a group of explanatory variables. The best predictive equation is the one that minimizes the sum of the squared deviations between the predicted values of the dependent variable and the observed values of the dependent variable. Since we are interested in the coefficients of the explanatory variables, we do not report the constant term in our regression equations.

The regression in the text uses the data for both 1960 and 1970. The separate regressions for 1960 and 1970 are consistent with this regression and are available upon request. Some readers of an earlier draft thought that peculiarities of southern states might have led to misleading results on a national basis. However, we get similar results when we omit the five southern metropolitan areas (Miami, Birmingham, Atlanta, Dallas, and Fort Worth). For the twenty-five non-southern metropolitan areas the combined regression is:

$$Y = .36X_1 + .15X_2 + .76X_3 - .95X_4 + 3.08X_5 + .14X_6 + .77X_7$$

(.43) (.16) (1.60) (-.21) (3.20) (3.97) (3.39)

$$R^2 = .63$$

40. We judge significance by the size of the T-ratio. Economists tend to consider a variable as insignificant if its T-ratio is less than 2.0. Jencks, in his critique of the Coleman Report data on public Schools, considered a variable as insignificant if its T-ratio was less than 1.0. Jencks, *The Coleman Report and the Conventional Wisdom*, in *ON EQUALITY OF EDUCATIONAL OPPORTUNITY* 112 (F. Mosteller & D. Moynihan eds. 1972). The size of the coefficient on each explanatory variable depends on the scale on which it is measured; for example, the coefficient for variable X_7 would be ten times larger if it were measured as the number of zoning authorities per 100,000 persons.

but the statistical relationship is quite weak. And the data suggest that changes in the formulas governing state aid to education would have a negligible effect on clustering.

This may mean either that public controls and restrictive covenants are not in fact motivated by fiscal considerations or that, however motivated, controls and covenants have little effect on clustering. In either event, however, our results raise tentative doubts that decisions like *Serrano* and *Rodriguez*, if upheld, would significantly affect clustering. It is premature to say what remedies will be framed in the school financing cases. One remedy would be complete state financing of education. Our sample does not include any system of pure state finance of education.⁴¹ Therefore, it can offer no prediction of what might happen under a radical change of this type.

It is more likely, however, that the school financing cases will precipitate less drastic changes. State aid formulas might be altered so that only a small change is made in the share of school expenditures coming from the local property tax. Our statistical evidence suggests that this approach would not have much impact on clustering.⁴² Thus even if every state adopted a system of local finance approximating that of Alabama, whose system seems to present the weakest fiscal motive, we would anticipate no significant change in residential patterns.

B—Metropolitan Fragmentation

The strong relationship between clustering and the number of independent zoning bodies in a metropolitan region indicates that the less the public power to control land use is fragmented in a metropolitan region, the less clustering one finds. This finding is quite important. Not only does it lend credence to several theories about local exclusionary behavior; it also provides the clearest evidence we could secure that public controls do, in fact, materially influence the degree of clustering.

41. Hawaii would fit this criterion, but it also has state-wide zoning, so that it does not offer an opportunity to study the effect of educational finance on decentralized land-use decision-making.

42. An extensive series of interviews with planning officials in the New Haven SMSA indicates that finances have little impact on their zoning decisions. Fear of change in the style of the town (sometimes related to fears of change in the racial composition of the population) is the dominant factor for these officials. R. Colloff, *Serrano and the Suburbs: The Impact of Education Finance Return on Suburban Zoning Practices* (Senior Studies Paper, Yale Law School, May 1972). A recent study of two Boston suburbs concludes that racial and class discrimination, not the fiscal burden, led to the refusal to allow small public housing projects. ENGLER, *SUBSIDIZED HOUSING IN THE SUBURBS: LEGISLATION OR LITIGATION?* (Joint Center for Urban Studies of M.I.T. and Harvard U., Abstract No. 4, 1971.)

On this latter point, it might be argued that “balkanization” makes residents more aware of the fiscal advantages of excluding the poor and makes it easier for substantial *private* covenant schemes to preserve the fiscal character of political subdivisions. Thus, conceivably, balkanization increases clustering not through its effect on the decisions of public officials but through encouraging private covenants. But this thesis assumes that fiscal incentives are an important motivation for private covenanting behavior, and—as noted above—our results show at most a marginal role for the fiscal motive.

Heavy reliance on the fiscal motive, by contrast, is unnecessary to explain how a more fragmented system of land-use control administration would lead to more exclusionary *public* policies. In any community, there may be interest groups concerned to preserve the status quo—whether this be fiscal, racial, economic class, or environmental. The larger and more inclusive the jurisdiction, the less likely it is that these interest groups will be able to dominate decision-making. Further, communities may exclude the poor not to attain some *absolute* quality of life in the community but only to give the community a *relative* advantage, compared with neighboring communities, as to fiscal structure, aesthetic environment, snob appeal, and the like. That is, exclusion may be a competitive phenomenon, and competition is more likely where there is a multiplicity of competing jurisdictions than where only a few large political subdivisions compose the metropolitan area. In the latter case, a subdivision will know clearly that its practices will be detected by its few “rivals” and that retaliation by them will be virtually certain and usually effective. Moreover, the larger the jurisdiction, the more likely it is that policies must actually be made through public and formal procedures, and the less likely that ethically or legally questionable motives and arguments would affect decision-making. Finally, it is possible that land-use control decision-making is more professionalized in larger entities, reducing the impact on actual decisions of political passions and popular prejudices.

The findings on fragmentation suggest that efforts to dismantle controls, and thereby “perfect” the market, and efforts to impose greater regional and state control over local decision-making, may both reduce income group clustering.

C—Race

When we turn to the racial data, the task of evaluating our findings becomes more complex. The data show that there is significantly more clustering in metropolitan areas with large minority group populations,

and thus that clustering is in some sense a racial as well as a class phenomena. What our data cannot determine, however, is whether racial considerations alter the locational preferences of buyers, the selling and leasing decisions of landowners, the incidence of covenants restricting land use, the incidence of public controls or some mix of all of these.

Because the incidence of poverty is greater among minority families,⁴³ the high-minority SMSA's are areas where a relatively larger percentage of the *poor* are from minority groups. The greater degree of clustering in these areas could, then, be explained by at least four distinct hypotheses:

- (i) Poor Blacks and "Spanish Heritage" groups have a higher propensity to cluster voluntarily than do the poor of other origins.
- (ii) Racial discrimination by individual sellers and lessors inevitably increases income group clustering in high-minority SMSA's.
- (iii) Covenants restricting land use, while operating to keep out all lower income groups, are *motivated* by fears and dislike of the minority group poor.
- (iv) Public land-use controls, while operating to keep out all lower income groups, are motivated by fears and dislike of the minority group poor.

The first hypothesis is not wholly implausible. Blacks, Chicanos, and Puerto Ricans are generally among the most recent immigrants to urban areas. They may, accordingly, have greater cultural and economic needs for association with others like themselves than those who are further from rural or foreign origins. Or, there may be historical and ethnic factors which cause them to value center city neighborhoods and communities more highly than the white poor.⁴⁴

While the "voluntary clustering" hypothesis is speculative, there is evidence that the private real estate market does discriminate against racial minority groups.⁴⁵ To the extent that private discrimination keeps the minorities—and thus a large percentage of the total poor in

43. Using the Social Security Administration's poverty level of about \$770 per person per year, one finds, for example, that in 1964 one-tenth of the whites in metropolitan areas were poor, as compared to about one-third of the non-whites. Non-whites comprised one-third of the metropolitan poor in 1964. Orshansky, *The Poor in City and Suburb, 1964*, 29 SOCIAL SECURITY BULL. 25 (1966).

44. We know little of the residential preferences of different racial groups. A recent study indicates that a significantly larger fraction of Blacks than whites moved within a metropolitan area between 1966 and 1969, but many of the Blacks were forced to move. McAllister, Kaiser & Butler, *Residential Mobility of Blacks and Whites: A National Longitudinal Survey*, 77 AM. J. SOCIOLOGY 445-56 (1971).

45. DOUGLAS COMM. REPORT, *supra* note 1, at 78-80.

the high minority SMSA—out of the suburbs, it would lead to the higher degree of clustering observed there.

Finally, our findings may mean that clustering is caused by racially motivated public controls or restrictive covenants which erect barriers to the poor generally: that is, suburbanites may perceive that economic integration means racial integration. No town can lawfully adopt general policies that explicitly exclude racial minorities, and covenants phrased in racial terms are unenforceable in the courts. Moreover, it is extremely difficult to operate public land-use controls on a selective case-by-case basis in a way that will effectively keep out minority group members but not other persons of lower income: it would be difficult to identify in advance which units, areas, or developments would be occupied by Blacks. Thus a *class* policy may be the only effective way to achieve *racial* goals.

Since our data are consistent with all four rival hypotheses, further research will be needed to clarify the policy and legal significance of our preliminary findings. A further study we contemplate, when the necessary data are available, will compare the clustering of poor whites with the clustering of poor non-whites. If we find that poor whites are not significantly less clustered than poor non-whites, we will have strong evidence to dispute the first two hypotheses and to support a conclusion that it is racially motivated governmental policies or restrictive covenants which prevent poor minority families from moving to the suburbs. This is so because if the overall clustering of the poor resulted from racial differences in locational preferences, or from racial discrimination by sellers and lessors acting individually, there would be no reason to find a correlation between the proportion of minority group members in the population and the degree of clustering among *whites*.

Even if the first two hypotheses were refuted, however, it would still be necessary to fashion tests to distinguish between the last two. Earlier we noted that our data suggest that public controls do have an impact on income group clustering and that these controls are not motivated significantly by fiscal considerations. It is possible that the racial factor discussed in this subsection affects the incidence only of *private* covenants restricting land use, and that public controls are motivated by *neither* fiscal nor racial considerations but are rather motivated by such “neutral” concerns as health, safety, aesthetics, and the like. But this seems to us unlikely: public controls and private covenants have nearly identical effects and are commonly viewed as interchangeable; that the two devices are animated by totally distinct motives is implausi-

ble. Thus, if the presence of racial minorities were correlated with clustering among whites, we would be inclined to conclude that *both* public controls and private covenants are racially motivated to a substantial degree in the United States.

V. Conclusion

Challenges to suburban land-use controls have made a number of factual assumptions. We found some qualified support for two of those made by the Equal Protection challenges: that public controls do affect the degree of income group clustering, and that these controls may, to an extent, be racially motivated.

While we stress the importance of further empirical research in this area, such research cannot itself resolve the complex questions raised by the challenges. Indeed, the interpretation of empirical findings will often depend on the resolution of normative issues. For instance, further research may show that public controls aggravate clustering but that residential patterns are largely established by differential buyer preferences and purchasing power. To determine *how much* impact on clustering public controls must have before those controls become "troublesome" or "undesirable" is a normative question. Similarly, further research may show that racial considerations and permissible considerations (of health, aesthetics, and safety) *both* animate the imposition of controls in most cases. The question of when a contributing factor becomes a "primary" or an "important" motive is again normative.

The debate on "exclusion" of the poor and of minorities is now too often a matter of flat empirical assertion and of colorful, but imprecise, rhetoric. We need rather a careful dialogue between empirical researchers and those prepared to sort out the subtle, and often conflicting, normative issues at stake.

APPENDIX

Sources for Table II:

- X₁: 1957 CENSUS OF GOVERNMENTS, Vol. 3, No. 6, Table 3; 1962 CENSUS OF GOVERNMENTS, Vol. 5, Table 12; 1967 CENSUS OF GOVERNMENTS, Vol. 5, Table 12; SURVEY OF CURRENT BUSINESS INCOME DATA (May 1970); HISTORICAL STATISTICS OF THE UNITED STATES, Table 1; STATISTICAL ABSTRACT OF THE UNITED STATES (1963) Table 433.
- X₂: 1957 CENSUS OF GOVERNMENTS, Vol. 3, No. 6, Table 3; 1962 CENSUS OF GOVERNMENTS, Vol. 5, Table 12; 1967 CENSUS OF GOVERNMENTS, Vol. 5, Table 12.

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- X₃: 1957 CENSUS OF GOVERNMENTS, Vol. 3, No. 1, Table 7; 1967 CENSUS OF GOVERNMENTS, Vol. 4, No. 1, Table 8; various state sources for those states with "dependent" school districts.
- X₄: Estimated from evaluation of state statutes and J. COONS, W. CLUNE & S. SUGARMAN, PRIVATE WEALTH AND PUBLIC EDUCATION (1970); R. GARVUE, MODERN PUBLIC SCHOOL FINANCE (1969); J. BURKHEAD, PUBLIC SCHOOL FINANCE, ECONOMICS AND POLITICS (1964).
- X₅: U.S. CENSUS OF POPULATION AND HOUSING (1960) Table p-1; U.S. CENSUS OF POPULATION (1970) Table PC(1)-C1, Tables 81, 91, & 96 for pertinent states.
- X₆: Computed from U.S. CENSUS OF HOUSING (1950) Tables 21 & 24 for pertinent states; U.S. CENSUS OF HOUSING (1960) Tables 16, 17, 21, 24, & 26 for pertinent states.
- X₇: 1957 CENSUS OF GOVERNMENTS, Vol. 1, No. 2, Table 3; 1960 CENSUS OF POPULATION, Vol. 1, Table 5; 1962 CENSUS OF GOVERNMENTS, Vol. 1, Table 15; 1967 CENSUS OF GOVERNMENTS, Vol. 1, Table 19; 1970 CENSUS OF POPULATION, Table PC(1)-C1, Table 13.

TABLE II
(1960 Data)

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
Birmingham, Ala.	16.9	30.5	18.8	5.0	34.63	197.7	44.3
Los Angeles, Cal.	39.0	45.2	52.6	4.0	18.15	98.8	11.4
Sacramento, Cal.	37.2	39.4	35.4	4.0	13.53	150.6	11.7
San Diego, Cal.	33.5	38.6	38.4	4.0	11.84	36.5	11.4
San Francisco-Oakland, Cal.	40.4	48.5	52.2	4.0	18.82	251.7	18.5
San Jose, Cal.	42.8	48.0	49.0	4.0	15.33	95.7	28.6
Denver, Col.	36.3	51.7	70.6	3.2	10.70	6.2	24.3
Miami, Fla.	39.8	49.5	53.6	5.0	16.13	134.4	31.7
Atlanta, Ga.	25.4	49.8	34.0	5.0	22.86	78.2	33.7
Baltimore, Md.	33.4	47.4	72.3	4.0	22.25	17.4	3.7
Boston, Mass.	53.5	63.3	87.7	5.0	3.44	243.6	25.7
Detroit, Mich.	44.6	55.3	53.5	3.3	15.13	141.4	35.9
Minneapolis-St. Paul, Minn.	36.8	56.9	54.6	2.4	1.95	121.7	84.7
Buffalo, N.Y.	43.1	53.7	46.9	5.0	7.26	430.8	51.2
Akron, Ohio	34.5	53.1	78.2	2.2	8.15	66.8	64.7
Cleveland, Ohio	39.5	60.6	80.2	2.2	14.77	642.9	51.2
Columbus, Ohio	26.7	42.5	74.2	2.2	12.01	224.4	70.6
Dayton, Ohio	28.4	49.2	66.6	2.2	10.20	498.8	86.2
Pittsburgh, Pa.	29.3	53.9	44.1	6.0	6.83	156.7	132.1
Providence, R.I.	37.8	69.8	80.0	2.3	1.99	125.8	35.1
Dallas, Tex.	29.1	56.9	54.6	2.5	17.99	242.2	28.9
Fort Worth, Tex.	26.2	49.5	42.3	2.5	14.20	15.2	54.6
Seattle, Wash.	17.9	33.9	34.1	1.8	4.80	22.0	23.5
Milwaukee, Wis.	44.9	54.8	57.2	4.5	8.36	269.9	46.2
Chicago, Ill.-Ind.	37.1	62.4	79.5	5.1	15.35	265.7	46.1
Kansas City, Mo.-Kan.	31.3	54.4	57.8	3.8	11.40	25.2	48.8
St. Louis, Mo.-Ill.	27.8	54.6	65.8	2.8	14.48	333.5	102.1
New York, N.Y.-N.J.	43.7	51.8	69.8	4.8	15.62	197.7	27.9
Cincinnati, Ohio-Ky.	33.4	45.9	76.5	2.5	12.09	192.5	51.2
Philadelphia, Pa.-N.J.	27.8	47.0	66.2	5.7	16.20	97.8	82.1

continued on next page

TABLE II—continued

(1970 Data)

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
Birmingham, Ala.	18.08	26.6	16.1	5.0	29.77	316.9	48.5
Los Angeles, Cal.	51.65	48.8	56.5	4.3	26.76	200.1	13.0
Sacramento, Cal.	52.32	41.4	45.9	4.3	14.78	346.4	8.0
San Diego, Cal.	48.15	41.2	44.7	4.3	17.38	95.4	10.6
San Francisco-Oakland, Cal.	51.53	47.8	53.3	4.3	22.23	325.9	20.1
San Jose, Cal.	60.52	46.1	52.3	4.3	19.20	159.4	19.2
Denver, Col.	46.55	50.5	61.9	4.5	14.35	201.8	29.6
Miami, Fla.	46.51	47.8	40.9	5.0	38.56	351.1	24.9
Atlanta, Ga.	33.18	44.1	36.7	5.0	23.34	15.3	37.1
Baltimore, Md.	40.76	40.4	63.4	5.1	24.56	165.3	9.6
Boston, Mass.	61.30	58.2	81.6	5.9	5.90	502.2	28.9
Detroit, Mich.	44.31	50.6	46.0	5.3	19.36	252.2	35.0
Minneapolis-St. Paul, Minn.	45.79	52.9	53.5	3.5	2.69	262.1	95.6
Buffalo, N.Y.	50.52	46.4	35.8	5.2	8.46	614.0	47.5
Akron, Ohio	41.91	49.8	54.8	2.8	8.60	266.7	60.2
Cleveland, Ohio	47.90	59.4	74.7	2.8	17.14	854.2	46.2
Columbus, Ohio	34.58	43.4	68.0	2.8	12.22	345.5	57.3
Dayton, Ohio	37.52	48.0	64.9	2.8	11.56	296.6	101.4
Pittsburgh, Pa.	32.68	45.6	53.7	6.6	7.11	380.9	128.2
Providence, R.I.	44.66	65.8	70.5	3.0	3.24	86.6	37.7
Dallas, Tex.	36.47	55.0	49.2	3.5	30.28	176.1	57.5
Fort Worth, Tex.	33.52	46.2	39.3	3.5	16.61	78.7	63.8
Seattle, Wash.	27.02	33.4	36.3	3.5	4.61	238.8	37.2
Milwaukee, Wis.	53.17	49.0	65.2	7.5	9.15	400.7	35.2
Chicago, Ill.-Ind.	43.19	57.2	62.9	5.1	22.40	417.6	54.1
Kansas City, Mo.-Kan.	37.24	50.0	53.8	3.8	14.06	362.9	51.2
St. Louis, Mo.-Ill.	36.54	51.0	58.7	3.6	16.93	445.0	97.6
New York, N.Y.-N.J.	49.18	45.0	74.7	5.8	20.72	359.5	25.7
Cincinnati, Ohio-Ky.	38.72	42.2	68.9	3.0	11.49	275.1	73.0
Philadelphia, Pa.-N.J.	33.34	53.2	54.1	6.6	18.39	403.2	74.4