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ABSTRACT

This study summarizes the theory and the available evidence on the effects of size on the responsiveness and efficiency of local government. For each of four important sections of the California Code bearing on the structure and authority of cities and school districts, the study summarizes (1) the primary provisions of the present Code, (2) some recent experience illustrating the effects of the Code, and (3) suggested changes in the Code. Major findings indicate that student performance is either unrelated or negatively related to the size of the school district. It is suggested that voters in a community within an existing local government should have the right to form a new unit of government, subject only to a substantial consensus within the community and protection of the legitimate rights of other affected parties. It is also suggested that parents should have the authority to enroll their child in any district in the State, subject only to the approval of school officials in the attending district. (Author/DN)

WORKING PAPER #14

CITIES AND SCHOOLS: A Case for Community Government in California

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Summary and Conclusions

Many California cities and school districts are too large. All major municipal services, other than sewage treatment, appear to be subject to constant or increasing per capita costs as a function of city population. Student performance in basic skills appears to decline as a function of the size of school districts. Given these conditions, the major problems of the structure of local government are due to the uniform provision of services to communities within cities and school districts / that have different preferences for the level and character of these services.

The present California Code has contributed to the growth of the population served per unit of local government in this State. The formation of new, smaller cities and school districts is effectively prohibited by the veto powers of semi-autonomous county bodies--the Local Agency Formation Commissions and the County Committees on School District Reorganization--and the thrust of both conventional wisdom and pending legislation on the structure of local government would further centralize decisions on the level and character of local government services.

This study summarizes the theory and the available evidence on the effects of size on the responsiveness and efficiency of local government. For each of four important sections of the California Code bearing on the structure and authority of cities and school districts, the study summarizes (1) the primary provisions of the present Code,

(2) some recent experience illustrating the effects of the Code, and

(3) suggested changes in the Code.

Theory

Local governments are subject to two conditions that may lead to economies of scale:

E1 For a given total level of a service, an increase in the population served reduces the average cost per person.

E2 For any service for which part of the benefits and/or costs extend beyond the boundaries of the government unit, an increase in the area served may increase the average net benefits of this service.

Most present and pending legislation concerning the structure of local governments has been rationalized on the basis of achieving these potential economies.

Local governments, however, are also subject to the following conditions that may lead to diseconomies of scale:

D1 The efficiency of public managers may be reduced by an increase in the area served by a local government.

D2 For a given level of most local government services, an increase in the population served reduces the marginal value of these services due to "crowding" in the use of the services.

D3 For a given cost of service per person, an increase in the population served reduces the average net benefits per person, due to an increase in the range of individual preferences for this service.

These potential diseconomies of area or population have not been as widely recognized in establishing policies affecting the size of local governments. But cities and school districts, of course, may be too large as well as too small, and the optimal size of a government unit for a service involves a balancing of the marginal economies and diseconomies of scale.

Evidence

Over the last 20 years, a large number of studies have been conducted to estimate the economies of scale of local government services. These studies have addressed the combination of the cost spending, managerial efficiency, and in some cases, the crowding effects / (these studies, thus, have not measured either the economies due to geographic externalities or the diseconomies due to an increasing range of preferences for local government services). The numerous scholars have used several different estimation techniques. The estimates reflect data from national samples, samples specific to other states, and several samples specific to California.

All of the studies of major municipal services that we identified reach a common conclusion: There does not appear to be any significant economies of scale in the supply of municipal services (other than sewage treatment services) above the level of the smallest cities.

The numerous studies of school districts that we identified also reach a similar, common conclusion: Student performance is either unrelated or is negatively related to the size of the school district. Our own estimates from a sample of the 144 largest unified school districts in California confirm several effects found in earlier studies:

1. Student performance is most strongly determined by family background at all grade levels.

2. School expenditures per student appear to make a significant contribution to student performance at the sixth grade but not at the twelfth grade.

3. School district size has a consistent negative relation to student performance.

The underlying reasons for the negative relation between student performance and school district size are less clear, but they appear to be associated with older teachers and larger classes in the larger districts.

Suggested Changes in the California Code

Our criterion for suggested changes in the California Code, in each case, is the following:

> Voters in a community within an existing local government should have the right to form a new unit of government, subject only to a substantial consensus within the community and protection of the legitimate rights of other affected parties.

This criterion explicitly denies the right of public officials in county, regional, or State bodies to determine what is the "best" structure of local government, either for the community or for the larger region.

On this basis, we suggest consideration of the following changes to the California Code:

1. Provisions of the Government Code concerning the Exclusion of Territory.

Voters in a community within an existing city would have the authority to form a new city, subject to a two-thirds vote within that community and, possibly, a minimum size constraint. Approval by the city council of the existing city would be required only if the assessed value per resident in the proposed new city is substantially higher than in the remainder of the city. The LAFCO could serve an analytic and advisory role but would have no authority to deny or delay action to form a new city.

2. Provisions of the Streets and Highways Code concerning Improvement and Assessment Districts.

The basic structure of the Municipal Improvement Act of 1911 and the Improvement Act of 1913 would be maintained. The basis for a qualified protest would be changed from owners of one-half of the land in the proposed district to owners of property on which one-third of the assessments would be levied. The city council would maintain the authority to overrule a qualified protest, by a four-fifths vote, but only on the basis that a failure to form the district would create significant problems in other sections of the city.

3. Provisions of the Education Code concerning the Dissolution and Reorganization of School Districts.

Voters in a community within an existing school district would have the authority to form a new district or to merge with an adjacent district, subject to a two-thirds vote

within the community and, possibly, a minimum size constraint. Approval by the school board of the district from which the area would be separated would be required only if the assessed value in the petitioning community is substantially higher than in the remainder of the district. Approval of the school board of the "receiving" district would be required on any petition to merge with that district. County and State education officials could serve an analytic and advisory role but would have no authority to deny or delay action to form a new school district.

4. Provisions of the Education Code concerning Interdistrict Attendance.

   Parents of each child would have the authority to enroll their child in any district in the State, subject only to the approval of school officials in the attending district. For each child attending schools in another district, an amount of funds would be transferred to the district of attendance equal to the lower of the revenue limit per student in the district of residence and in the district of attendance. School officials in the district of attendance would have the authority to require a payment by parents of an amount no greater than the difference in the revenue limits as a condition for approving the requested transfer.

The several changes in the California Code that we suggest for consideration each recognize that voters may make a mistake in choosing to form a new unit of local government or that parents may make a mistake

in enrolling their child in another district. We believe, however, that they are less likely to make a mistake in terms of their own interests than would any elected or appointed body. Moreover, we believe they have the right to make such mistakes. The experimentation and diversity that would result is the basis for the viability of our federal system.

I. INTRODUCTION

Citizens choose and control their local governments through three major processes:

--changing the managers of a government unit,

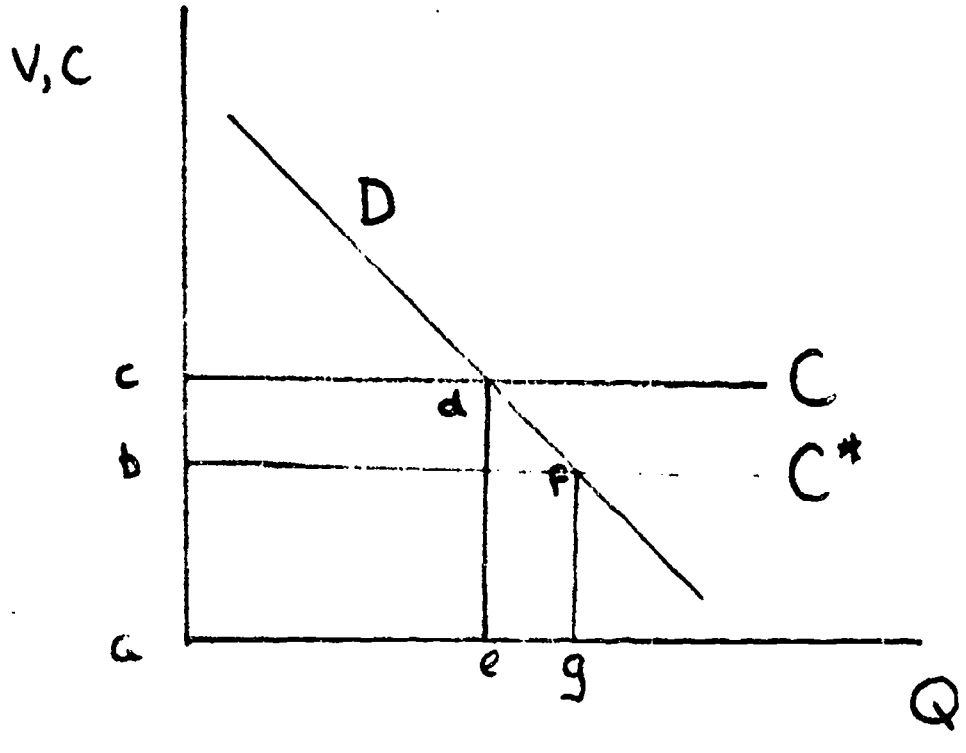
--moving to an area served by another unit, and

--changing the unit serving a specific area.

Each of these processes is efficiency-inducing, but each has serious limitations. The better any one process serves an individual, however, the less important is the efficiency of the other processes.

Conventional political processes focus on selecting the officials of a government unit. Competition among alternative sets of officials and majority rule induces the present officials to be responsive primarily to the median voter. As the present officials have personal incentives to increase the rewards and to reduce the more onerous duties of their positions however, even the median voter is not perfectly served.[1]

Consider the conditions represented by Figure 1.



D is the demand (or marginal value) function by the median voter for a government service. C is the actual unit cost of this service times the tax share of the median voter. C* is the minimum achievable unit cost times the tax share of the median voter. The difference between C and C* reflects the costs of higher-than-competitive rewards and poor management by the present officials. At the actual cost C, the government will supply a level of service ao, and the median voter will pay taxes of acde. At the minimum achievable cost C*, the government would supply a level of service ag, and the median voter would pay taxes of abfg. The combination of higher rewards and poor management by the present officials, thus, reduces by the amount bcdf the net benefits of this service to the median voter.

The opportunity to replace the officials reduces, but does not eliminate, this loss of net benefits. The median voter will vote for the present officials as long as

$$C_1 + C_o \geq G^* - G,$$

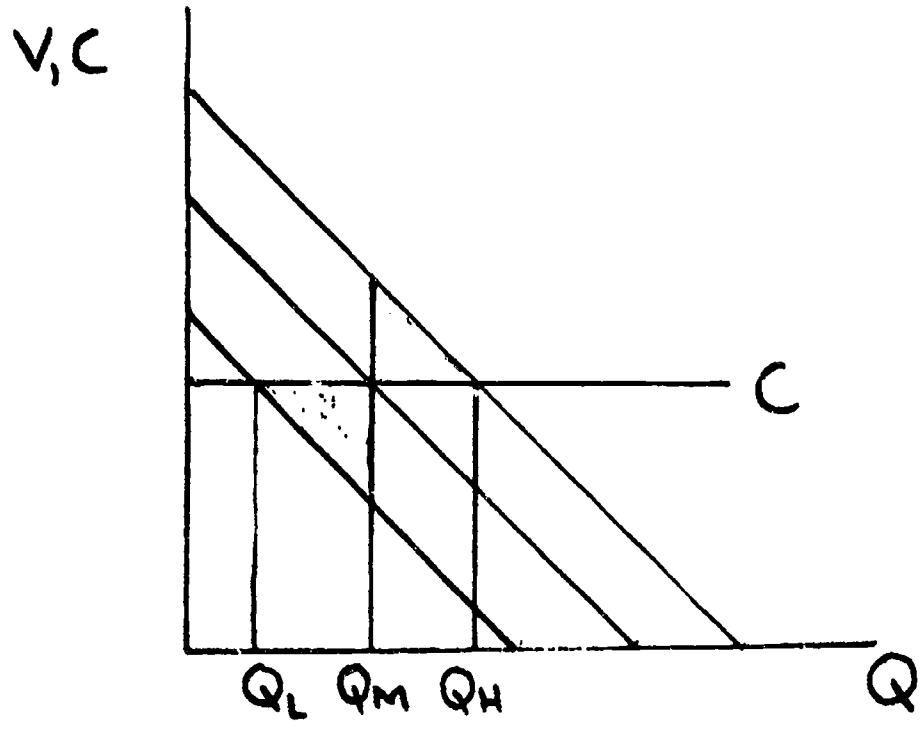
where, in terms of the costs and benefits faced by this voter, C_1 is the cost of acquiring information about the potential increase in net benefits from replacing the present managers, C_o is the cost of organizing a majority coalition to elect alternative managers, G* is the net benefits from the government service with the best alternative public managers, and G is the net benefits from the service with the present managers. Rearranging terms,

$$G \geq G^* - C_1 - C_o.$$

The electoral process, thus, assures that the actual net benefits to the median voter will be larger--the greater are the net benefits that

would be generated by the best alternative managers, the lower are the costs of acquiring information about government performance, and the lower are the costs of effective political activity. This is the basis for the focus of traditional political and public administration reforms on improving the quality of public managers and reducing the cost of information and campaigns. One should also recognize that the present managers have both the incentive and some ability to increase these costs.

A second set of problems is not so effectively constrained by the electoral process.[2] These problems derive from the supply of the same level of services by government to people with different preferences for these services. These problems are illustrated by Figure 2.



Conventional political processes will lead the level of service Q_m, the level preferred by the median voter, to be supplied to all individuals in the political unit. This creates losses for those with both relatively

low and high demands for this service. Those with low demands would prefer the amount Q_L, but the common provision of the amount Q_M creates a net loss equal to the lower shaded triangle, unless they are able to exchange the excess service for something more valuable. Those with high demands would prefer the amount Q_H, and the common provision of the amount Q_M creates a loss equal to the upper shaded triangle, unless they are able to augment privately the amount of this service without foregoing the common level provided. As it is usually easier for an individual to augment a government service then to reduce it, the losses are probably distributed asymmetrically toward those with low demands who, as a rule, have lower incomes. The aggregate losses due to the uniform supply of such services will be proportional to the sum of the squared differences bewteen the level preferred by each individual and uniform level supplied. Optimal behavior by the government would be to supply the amount Q_L or a unit-wide basis and permit private or neighborhood augmentation of this level to meet the higher demands.

Conventional political processes, in summary, will be more responsive and efficient--the greater the benefits from replacing the present managers, the lower the cost of detecting poor performance and of organizing effective political action, and the more homogeneous are the demands for government service. The responsiveness of the national governments of large, rich nations are almost wholly dependent on the efficiency of the electoral process. Unfortunately, the primary efficiency-inducing conditions, as listed above, are also weakest at this level. Local

governments are more likely to be responsive just because the other major processes augment the electoral process.

Moving to another government unit is increasingly recognized as an important efficiency-inducing process for local goverments.[3] Moving provides an opportunity for those with relatively low or high demands for a government service in one unit to choose another unit in which their demands are closer to the median. As a consequence, moving also increases the efficiency of the political process by increasing the information on government performance and by increasing the homogeneity of demands for government service within each unit. The limits on this process, however, are less well understood. A major recent contribution suggests the primary limitations on this process:[4]

> For any individual,
>
> --the net benefits of private and government activities in a political unit are a package,
>
> --the governmental services and taxes are a package,
>
> --the costs of moving reduces the net benefits of moving to take advantage of a superior package of private and government activities, and,
>
> --the choice of location will be made in terms of those benefits and costs that accrue to the individual, excluding those benefits and costs that this action imposes on others.

An individual presently located in political unit A will stay in unit A rather than move to unit B only where

$$P^A + G^A + M^{AB} \geq P^B + G^B$$

The net private benefits of locating in A or B (P^A, P^B) are a function of travel conditions; the economic, social, and physical environment; and private costs. The net government benefits of locating in A or B (G^A, G^B) are a function of the combination and level of services and of the taxes in each unit. M^{AB} are the costs of moving from unit A to unit B. For any individual, thus, the net government benefit in unit A necessary to induce him to stay in A are

$$G^A \geq G^B - (P^A - P^B) - M^{AB}.$$

The minimum net government benefits in unit A will be less than in unit B by the difference in private benefits and the moving costs. G^A may even be negative if the net government benefits in unit B are smaller than the difference in private benefits and the moving costs. Local governments, thus, are likely to be least responsive to those individuals for whom the net private benefits are high relative to other units and for whom the costs of moving are high, unless these same individuals have a dominant role in the political process. The least responsive local governments are likely to be in areas where commuting costs are low, salaries are high, the social and physical environment is attractive, and where the political process is dominated by those (renters, etc.) with low moving costs. These problems derive from the joint availability of private and government activities in each area, the costs of moving to take advantage of a superior package, and the broadening of the political franchise.

A related set of problems arises when there are economies or diseconomies of scale of private and governmental activity. An individual's choice of location will be based on only those benefits and costs that accrue to him, regardless of the effects of his actions on the relevant communities. An individual moving between units may either increase or decrease the average cost to others, depending on the economies or diseconomies in each unit. These problems could be corrected by the uniform application of marginal cost pricing and taxation. The general absence of congestion-tolls and effluent fees on the limited common resources and the constitutional restrictions on "discriminatory" taxation, however, will not soon be corrected. Any proposal to increase the freedom of individuals to choose their level of government services must address the major consequences of their actions on other affected individuals.

Changing the government unit serving a specific area has also been an important process affecting the responsiveness and efficiency of local governments, but this process is much less well understood. In recent years this process has become less effective because the costs of changing the government in a specific area are increasing relative to the costs of the electoral process or of moving. The increasing costs of changing the local government serving an area, however, are a consequence of state policy, and these costs can be reduced by changing the state legislation affecting the process for organizing local governments.

California has experienced a long period of rapid growth and urbanization that may now be reaching an end. As a consequence of state policy, however, the population growth has not been accompanied by a proportional growth in the number of local government units, so the average population served by each type of local government has progressively increased. The last new county was formed in 1907. The rate of growth of new cities and independent special districts has been reduced, most substantially since establishment of the county Local Agency Formation Commissions (LAFCOs) in 1963. The total number of school districts has been reduced from 3030 in 1935 to 1067 in 1971, most substantially since establishment of the County Committees on School District Reorganization (CCSDOs) in 1949.

For the immediate future, the population served by most local government units in California will continue to increase. The LAFCOs and CCSDOs have an effective veto power over the creation of new cities and school districts. Conventional wisdom on local government organization, distilled from several decades of academic writing, supports further consolidation and centralization. The conventional wisdom on this subject is probably best reflected in the following quotation from the 1972 Annual Report of the Advisory Commission on Intergovernmental Relations (ACIR):[5]

> Unlike a decade ago, the question now is not whether there will be metropolitan governance, but what form it will take. Will it be fragmented, functionalist-dominated, Federal-State instigated, and planning-oriented, or more fused, generalist-controlled, accountable and action-oriented?

The Commission's action agenda lists four broad priority areas for State action on local problems:

> States should clarify the legal powers of general units of local government, authorize localities to determine their own internal structure and to use liberalized municipal annexation procedures.
>
> States should discourage nonviable units of local governments by establishing rigorous standards for incorporation, by empowering boundary commissions to consolidate or dissolve nonviable units, and by revising State aid formulas to eliminate or reduce aid to nonviable local governments.
>
> States should permit counties to perform urban functions, foster interlocal service agreements, provide for multifunctional authorities in metropolitan areas, encourage metropolitan councils of government and metropolitan study commissions.
>
> States should stop the proliferation of special districts.

California, as is often the case, already has some experience with the type of legislation recommended by the ACIR. And a major bill is now working its way through the California legislature to establish a regional multifunction government in the Bay Area.

The State legislation that promoted the consolidation, merger, and centralization of local governments and school districts may or may not have been appropriate for conditions of any earlier time, but that issue is not relevant to current policy. Our general position on this legislation is summarized below:

> We believe that the present State legislation places wholly inappropriate constraints on the organization of local government and school districts in California.

In the absence of significant economies of scale and overriding externalities, the major source of inefficiency in the supply of local government services is attributable to the supply of a uniform level of services across a jurisdiction where residents have significantly different preferences for these services. Only the creation of smaller units of local government organized around communities with more homogeneous preferences for government services can reduce this loss.

The present research addresses a new approach to improving the responsiveness of local governments in California, an approach that does not change the conventional electoral processes and is not dependent on moving. This approach would permit each individual, separately or with his neighbors, greater freedom to select the local government that most nearly reflects his preferences--without moving. Both the conventional electoral process and the moving process accept the structure of local government as given. This new approach focuses on the process of changing the structure of local government.

A representative voter in a community within a larger area served by a local government will accept the present structure of the local government as long as

$$C_S \geq G^* - G, \text{ where}$$

for this voter, C_S is the cost of changing the local government structure, G^* is the net benefits of a local government organized at the level of the subcommunity, and G is the net benefits from the present government unit. The difference between G^* and G will be larger -- the smaller are the economies of scale in the

provision of local government services, the greater is the difference in preferences for local government services between the individual and the larger community, and the smaller is the difference in preferences between the individual and the sub-community.[6] Rearranging terms,

$$G \geqslant G^* - C_S .$$

The present local government, thus, will be more responsive to this voter the larger is the net benefit of an alternative structure and the smaller are the costs of changing the structure. At the present time, for most voters, C_S is prohibitively high, making them entirely dependent on the limited efficiency of the electoral process and on moving. The costs of changing the structure of government, however, are determined by State legislation and can be reduced (or increased) by changing this legislation.

Changes in the process for changing the structure of local government must necessarily differ between two types of services.

1. For services supplied <u>on-site</u> to a contiguous area--such as streets, sewers, lighting, refuse collection, police, fire, etc.--one must use the services provided by the proximate government unit.[7] The major alternatives for assuring a supply of these services that is more responsive to the preferences of a subcommunity within a larger jurisdiction include

   a) separation of a community from the existing city, form a new city, and/or

b) formation of an improvement district within the existing city.

In each case, the present California Code relevant to these processes is examined to determine whether there are unnecessary restrictions on these processes, considering the legitimate interest of both the subcommunity and the affected existing cities. The recent action by Alviso is described to illustrate the effect of the Government Code on "the exclusion of territories." A proposed improvement district in Hayward is described to illustrate the primary problem with the Streets and Highway Code on the creation of such districts. Recent research on the economies of scale in the provision of local government services is summarized to provide a guide for evaluating the formation of new cities. For each major alternative, the general characteristics of changes in the Code are identified that would permit changes in the structure of general purpose local governments to be more responsive to the varying preferences of the voters.

2. For services provided off-site, on a regular basis, and with personal identification of the recipient -- it is now common, but wholly unnecessary, to use the services provided by the proximate government unit. Schooling is the most important, and may be the only significant case, of such services. The major alternatives for assuring a supply of these services that is more responsive to individual preferences include

a) separation from the existing school district, either to join an adjacent district or to form a new district, and/or

b) transfer of individual students from one district to another.

The first alternative would facilitate the changing of school district boundaries and/or the creation of smaller new districts formed from existing districts. Although this would reverse the trend toward consolidation of school districts, the research summarized in this paper suggests that increased district size--beyond the smaller school districts--would neither reduce costs nor improve student performance. A current proposal to change the boundary of the San Lorenzo and San Leandro school districts is described to illustrate the effect of the Education Code sections on school district operations. The general characteristics of changes in the Code are identified that would facilitate the creation of more responsive districts.

The second alternative would broaden the opportunities for interdistrict transfer of students. Individual families would be permitted to send their children to the districts of their choice, without any necessary approval from the district of residence. Consideration is given to the authority of the attending district to deny enrollment based on capacity constraints and/or relevant State policies. The present Education Code concerning interdistrict transfer is examined and the effects of this Code are illustrated by recent experience. Again, the

general characteristics of changes in the Code are identified that would permit more freedom of choice within the public school system, subject to protection of the legitimate interests of the affected groups.

The three major processes summarized in this section are the primary means to assure the responsiveness of local governments to the interests of the population they serve. An improvement in the efficiency of any one of these processes would also improve the efficiency of the other processes. The research summarized in this paper is addressed to the third process--changing the structure of local government and school districts. A reduction of the costs of changing the structure of local governments would make both a direct contribution to responsive local government and by permitting the creation of smaller government units, serving residents with more similar preferences for public services, increase the responsiveness of local governments to the electoral process and the potential movement of individual families.

II. CITIES

Size and Performance

Theory

For the most part, the size of a city is determined by historical decisions on its area and by the location decisions of individuals. City size is not optimized by any formal process. And the evolutionary processes shaping a city operate only weakly to change cities toward a more optimal size, because both political and location decisions are generally choices of a package of conditions of which city size may be among the least important. Nevertheless, it is worthwhile to recognize the conditions that affect the optimal size of a city. The present California Government Code and the operations of the LAFCOs, in effect, restrict changes in city structure to those that would increase city size or merge it with another unit. In the absence of changes in this Code, recognition of these conditions can help identify those further annexations and mergers that may be desirable. More importantly, recognition of these conditions contributes to identifying the general characteristics of desirable changes in the Government Code.

For a set of cities in a common area, the criterion for efficient city size and spacing is the maximization of total benefits minus total costs for all the cities together.[8] The "optimum" city, thus, involves a balancing of the marginal economies and diseconomies of scale with respect to the population served. The major potential economies of scale derive from the following conditions:

E1 For a given total physical level of service, an increase in the population served reduces the average cost per person.

E2 For any service for which a part of the benefits and costs extend beyond the city boundaries, an increase in the area served may increase the average net benefits for this service.

D1 An increase in the area served by a local government probably reduces the efficiency of the public managers.[9]

D2 For a given level of most local government services, an increase in the population served reduces the marginal value of such services to each individual due to "crowding" in the use of the service.

D3 For a given cost of services per person, an increase in the population supplied a common level of a service reduces the average net benefits per person, due to the increase in the range of individual preferences for the service.

The criterion for efficient city size where all of these conditions apply has not yet been developed and is not obvious. The criterion can be approached, however, in a piece-wise manner. For services for which there are no geographic externalities (i.e., the E2 condition does not apply), a city should extend services to a larger population until the marginal economy due to the E1 condition is equal to the sum of the marginal diseconomies due to the D1, D2, and D3 conditions. The reduction in the cost per person from spreading the cost of a given total level of service, thus, should be equal to the sum of the increase in cost

from reduced managerial efficiency, the reduction in value from crowding of this service, and the reduction in the net benefits per person from providing a uniform level of this service to a population with more heterogeneous preferences for this service.

The effect of geographic externalities on the optimum city size is less well understood. Conventional wisdom on this issue, quoting George Break, "is to expand the geographical scope of governmental units so as to convert external benefits and costs into internal ones."[10] A recent formal analysis of this issue, however, concludes, "The injunction to 'expand the geographical size of governmental units'...is not only an insufficient guide to policy, it is also a misleading one."[11] The optimum service on market area, according to this analysis, is where "the gross benefit to a household at the edge of the market area is equal to the average net benefit of households in the entire market area."[12] Cities and special districts, thus, should not expand to internalize all externalities, but only to the point where the size of the externality at the boundary is equal to the average net benefits from the service within the area; in many cases, this suggests a reduction in the area served, particularly when combined with the condition D1 - D3 leading to diseconomies of scale.

The theory of optimal city size, of course, is not a sufficient guide for policy. It does serve, however, to question the consolidation, merger, centralization, and growth thrust of both conventional wisdom and the present Code. Moreover, it serves to identify the type of empirical evidence that would provide a guide for better policy.

Evidence

Most of the empirical studies on the economies of scale in providing municpal services address the combined effect of the E1, D1, and D2 conditions. The three major sets of these studies represent a sequential improvement in our understanding of the effects of city size on the per capita costs of municipal services.

The first major set of studies on the economies of scale in municipal services were completed in the 1950's. Amos Hawley / 19 / examined the relation of total municipal expenditures for the central cities in 76 metropolitan areas to population size and a set of other social and economic variables. Stanley Scott and Edward Feder / 28 / examined the relation of total municipal expenditures for 192 California cities with a population over 2,500 to a similar set of variables. Harvey Brazer / 7 / estimated the relation of municipal expenditures for eight separate services in 462 cities to city size and other variables. No one of these studies identified any significant economies of scale. Brazer's study found a significant positive relation between per capita expenditures and population for several services.

The next major advance in these studies was made by Werner Hirsch / 20 /. His primary contribution was an attempt to control for the scope and quality of municipal services. He also tested for the existence of a U-shaped relation between per capita expenditures and population, in an attempt to identify the city size for which per capita expenditures are lowest. Hirsch estimated per capita expenditure functions for police, fire, refuse collection, and primary and secondary education using a sample of cities in the St. Louis metropolitan area and for sewage disposal using a sample

of waste treatment plants in Massachusetts. The expenditure functions for the four municipal services revealed shallow U-shaped relations but, in general the coefficients on scale were not significant. Only waste treatment appears to have any significant economies of scale. Hirsch's conclusion is important:

> Efficiency considerations, thus, do not appear to warrant across-the-board consolidation of metropolitan area governments. Consolidation of water services and sewage services, preferable into a multipurpose district, can be a move toward greater efficiency and lower expenses. Otherwise, economic efficiency may be highest in medium-sized communities of 50,000-100,000 residents.[13]

A third major set of studies was completed in 1972. The primary contribution of these studies is the derivation of the expenditure relations from the theory of consumer demand and the theory of output determination with majority rule. The estimated expenditure relations provide for a direct estimate of the effect of the "tax price" on the level of service demanded, provide an indirect estimate of the combined effect of cost spreading and crowding from increasing the population served, and avoid the difficult and not wholly satisfactory procedures for estimating the scope and quality of each service. Theodore Bergstrom and Robert Goodman, in the most directly relevant of these studies / 57, estimate expenditure relations for general municipal services (excluding education and welfare), for police, and for parks and recreation. Their aggregate sample includes 826 cities with populations between 10,000 and 150,000 located in 10 states; the subsamples for each state include a sample of 160 California cities in

this population range. For each of the three types of municipal expenditures, the effects of family income, local taxes, population of the city, and other social and economic conditions are estimated. For our purposes, the most important of their results are the estimated levels of the "crowding parameter"; this parameter measures the combined effect of spreading the cost among a larger population, any increase in cost due to lower marginal efficiency, and the reduced value of the service due to the sharing of the service among a larger population. Considering only the median voter, a value of this parameter less than one (1) indicates economies of scale, and a value greater than one indicates diseconomies of scale. For all other voters, any net economies of spreading the cost among a larger population must be balanced against the losses due to the supply of a level of service different from that which they prefer. Table 1 below presents the Bergstrom and Goodman estimates of the crowding parameter from the national and California samples.

Table 1

Municipal Services Reveal No Economies of Scale

Sample	General Expenditures	Police	Parks and Recreation
	(Estimates of the Crowding Parameter)		
National	1.09	1.07	1.44
California	1.10	1.00	2.09

These estimates suggest that general municipal services and park and recreation services are subject to significant diseconomies

of scale. Police services appear to be provided at a constant per capita cost. Bergstrom and Goodman conclude ". . . over the range of city sizes which we studies, there appear to be no economies of scale to larger municipalities in the provision of public goods . . . One might reasonably ask why, if there are not increasing returns in the municipal provision of the goods and services which we study, is there provision in the public domain?" [14]

A similar study by Thomas Borcherding and Robert Deacon [6], estimated expenditure relations for eight state and local services. For our purposes, their estimates are less valuable because their samples are expenditures by service aggregated at the state level for 44 states. Their estimates bear on the economies of scale of local government only because of the fairly strong correlation of state population and average city size. The Borcherding and Deacon estimates of the crowding parameter (they define as the "capturability parameter") are presented in Table 2.

Table 2

Most State and Local Services
Reveal No Economies of Scale

Service	Estimates of the Crowding Parameter
Local Education	1.05 - 1.09
Higher Education	.82
Highways	.87 - .93
Health	1.01
Police	1.02
Fire	1.01
Sewers and Sanitation	.93 - 1.00
Parks and Recreation	1.00 - 1.05

The only state services that reveal economies of scale (to the median voter) appear to be higher education and highways. The only local government service that appears to be subject to economies of scale is sewers and sanitation. All other state and local services appear to have either constant or increasing unit costs as a function of the population served. Although the Borcherding and Deacon estimates are less efficient in measuring the economies of scale at the local level, they are remarkably consistent with those derived from local data by Brazer, Hirsch, and by Bergstrom and Goodman.

In summary, the evidence developed by all the major studies in the last 20 years -- by numerous scholars using different techniques and different data sources -- is consistent and, in total, overwhelming: There do not appear to be any significant economies of scale in the provision of local government services (other than water and sewer services) above the level of the smallest cities. One wonders why the conventional wisdom, as represented by the ACIR position and the state municipal codes, has been so resistent to this evidence.

Good empirical estimates of the nature and level of geographic externalities from local services, unfortunately, do not exist. For the present, it is important to recognize that expanding the area served by a local government is neither a necessity nor, in most cases, the most appropriate policy to resolve the problems caused by these externalities. Geographic externalities are most likely to be largest for education and environmental services; for such services, federal and state subventions are probably a superior instrument.

In the absence of economies of scale in the provision of local government services or the necessity of enlarging local government to internalize geographic externalities, the primary source of inefficiency in local government is probably due to the uniform supply of services over subcommunities with different preferences for these services. Both theory and the available evidence suggest that the state municipal codes should be revised to facilitate the organization of local governments at the level of subcommunities with residents that have more homogeneous preferences for local government services.

The Exclusion of Territory

Summary of the Present Government Code

The California Government Code empowers a community or territory of a city to disannex and disincorporate itself from the city of which it is a part. The provisions are valid irrespective of whether the territory proposed to be excluded is contiguous or non-contiguous. This process of Exclusion of Territory is intended to provide for "an ordinary and reasonable" change in boundaries of cities: it is not intended as a means of "practically disincorporating" a city, for it presupposes the continuance of the city's existence.

The process of Exclusion of Territory requires decisions by citizens of the territory to be excluded, the city from which the territory wishes to be excluded, and county officials. Action for exclusion is initiated by filing an application for exclusion with the executive officer of the Local Agency Formation Commission (LAFCO) of the principal county in which the city is located. The application must include a description of the territory which is sought to be excluded, plus any additional information which may be requested by the LAFCO.

Approval of the LAFCO is a prerequisite for any further procedures for exclusion. The LAFCO must modify or approve of a report and recommendation drafted by the executive officer of the LAFCO, set a date for a hearing to be held within 70 days of the initial filing, and publish and mail notices of the hearing as per the guidelines established in the Code. The Code specifically requires that the LAFCO investigate the

following when considering an application for exclusion: (1) demographic and topographic features, land usage and assessed valuation, expected future growth patterns; (2) need for organized community services, present cost and adequacy of government services and controls in the area and probable future needs for such services, and the effect of exclusion upon such services; (3) effect of exclusion upon governmental structure, and mutual social and economic interests of the community and adjacent areas; (4) the nonconformance of proposed boundaries with lines of assessment of ownership and creation of islands or corridors of unincorporated territory; and (5) conformity with appropriate city or county general and specific plans with respect to the "sphere of influence" of any city which would be affected by the exclusion. Since there is no appeals process to contest a LAFCO decision, the LAFCO has an effective veto power in the exclusion of territory process. Many of the LAFCOs in California have based decisions on the "spheres of influence" concept: if a territory is within a city's sphere of influence as defined in the county master plan it cannot become its own city. Section 54774 of the Government Code states in part that "Among the purposes of a LAFCO are the discouragement of urban sprawl and the encouragement of the orderly formation and development of local government agencies...." LAFCOs seem to have interpreted this to say "The fewer municipalities, the better."

The LAFCO must reach a decision within 35 days of the hearing. The LAFCO may deny the request for exclusion, whereupon proceedings terminate and no other exclusion proposals involving the same territory may be filed with the LAFCO for at least one year. There is no provision for an appeal, except through the courts.

The LAFCO may conditionally approve a request, or approve it with modifications or conditions, in which case exclusion proceedings may continue only in compliance with such rules.

The legislative body representing any affected governmental agency may file a written application to LAFCO requesting modifications in the LAFCO decision. The LAFCO may, at its own discretion, deny or approve such a request "in whole or in part," or provide for a hearing. If the initial proposal for exclusion is signed by all land owners of the territory proposed to be excluded, the LAFCO may approve such exclusion without a hearing, or "authorize the legislative body of the city to detach such territory without notice and hearing by the legislative body, without an election, or both."

The LAFCO may approve an application for exclusion, in which case a petition may be circulated in the city from which the territory is to be excluded. If the petition is signed by 50 per cent of the qualified electors of the city, "as shown by the last vote cast at the last municipal election" (or if within 5 years of incorporation by 25 per cent of the electors), the petition is submitted to the city council.

The territory can be separated from the city, then, only if 50 per cent or more of the votes cast in <u>both</u> the territory and the city are in favor of exclusion, or, if within two years after incorporation of the city, two-thirds of the <u>total</u> votes cast in the city are in favor of exclusion. If a majority of votes in either the territory <u>or</u> city are against the proposal, another election for exclusion of the same territory cannot be held for at least three years.

In sum, exclusion of territory requires approval from the County LAFCO, a petition signed by 25 - 50 per cent of the voters of the city of which the territory is a part, and a majority vote in favor of exclusion in both the territory and the city. The LAFCO is the major obstacle for a territory that wishes to disannex; no further action can be taken without its approval, and there is no appeals process in the Government Code by which one may protest a LAFCO decision. This is a startling observation when one considers that any LAFCO decision is final, even though the LAFCO is a semi-autonomous body far from public visibility and approval.

A Recent Example

Prior to 1968, Alviso was an incorporated city with a predominantly Mexican-American population of around 1,800 whose main occupation of agriculture provided its citizens with a poor, but self-sufficient living. This pattern was then broken by several large businessmen-landowners who attempted to consolidate Alviso into the City of San Jose as a means of effecting needed improvements in the community. Alviso community leaders who opposed the consolidation viewed the movement as a ploy by the landowners to use the improvements so as to increase their property values. Although Alviso was bordered by the Cities of Sunnyvale, Santa Clara, and Milpitas, civic leaders of San Jose were attracted by the idea since the consolidation would give San Jose much territory to expand, including frontage land on the San Francisco Bay. Councilmen envisaged draining and changing part of the Alviso mudflats into a beac tourist community, or, to quote a San Jose newspaper, a "Sausalito of the South Bay"; other plans included a large international airport in the Alviso territory. Santa Clara LAFCO reports show that the "Alviso Improvement Commission (AIC)" was the driving force behind the 1968 consolidation. The AIC contacted several law students from Stanford who prepared an analysis supporting the consolidation movement. Alviso community leaders (current disannexation proponents who say they represent the vast majority of Alviso's citizens) now look back and recognize that a majority of the poor Alviso citizens, many of whom do not speak English, were swayed by the campaign for consolidation, which was accompanied by a written contract by San Jose promising certain improvements. The final vote in Alviso favored annexation, 189-180, with 9 votes not counted because they were "improperly completed."

Since the consolidation in 1968, there have been several reasons that have pushed these community leaders to exclude, or disannex Alviso from San Jose. First, they contend that Alviso citizens wish to maintain their rural, agricultural community; they became quite upset when they realized the extent of San Jose's renewal plans. Second, Alviso community leaders say that some of San Jose's written improvement promises have not been implemented; the promises are now recognized as an underhanded "lever" by many Alviso citizens. Finally, the same leaders point to vast public support for exclusion in Alviso and, as evidenced by a recent San Jose City Council election in which a strong proponent of Alviso's exclusion was handily elected over the incumbent, the proposed exclusion is supported by San Jose citizens. Meanwhile, an AIC representative claims that the majority of Alviso citizens would oppose the exclusion.

The California Government Code requires that the LAFCO approve such a request for exclusion before a petition may be circulated or an election conducted. The petition culminating five years of frustrating efforts has not led Alviso beyond this initial hurdle, despite popular support. The Code identifies the LAFCO's role as preventing urban sprawl and enumerates a vast assortment of criteria which this county body should follow in evaluating the request for exclusion. However, the Santa Clara LAFCO has established its own priorities for evaluating the efficiency of local governmental bodies. The LAFCO has approved and adopted as a guideline for city foundation and expansion a "spheres of influence boundary map" prepared by the County Planning Commission and the Intercity Council in 1972. The map divides Santa Clara County into 15 shperes of influence, one for each city. It is a guideline for long-range planning wherein any territory within a city's sphere of influence will sooner or later

be annexed by that city. The Alviso quest for disannexation and independence is obviously contesting this seemingly cut-and-dried guide for city formation which simplifies the LAFCO's task. It is interesting to note that each city within reasonable distance of the San Francisco Bay has its sphere of influence extended to the waterfront, and although the LAFCO is required by the Code to minimize urban sprawl via "islands" or "corridors" or other types of "gerrymandering," Alviso is connected to San Jose by a strip of city territory two miles in length and as wide as a highway (Alviso Road). One would expect that if this map had been completed prior to the consolidation of Alviso with San Jose, Alviso would have had its own sphere of influence and would be protected from any consolidation movement.

Alviso community leaders have recognized their lack of political power and have tried to create a web of support from various public groups as a means to sway the LAFCO decision. These leaders and the poor citizens have purposely proved to be a large stumbling block to San Jose's beachfront plans and, as a result, there was a split vote (3 - 3) in the San Jose City Council on a motion supporting the disannexation. When one dissenting vote requested a "cost-benefit analysis" of the proposal, the study was conducted, thus delaying the LAFCO proceeding. San Jose took the liberty to exclude 700 acres, including a power plant, from the area under consideration and passed a motion (4 - 2) favoring exclusion of all but this 700 acres. Petitioners of the exclusion proposal were caught in a bind and temporarily withdrew their motion from the LAFCO agenda. (Although the exclusion procedure does not require approval from San Jose, petitioners believe that it is an important step in convincing the Santa Clara LAFCO.) Alviso community leaders have sought and obtained support from several public leaders and environmental groups;

however, some of the public leaders recognize the Alviso issue as a political tinderbox and have thus denied offering public support. The recent election of an Alviso supporter to the San Jose City Council exemplifies the public support for the disannexation.

Despite these efforts, Santa Clara LAFCO officials have told the petitioners that this public support will not help. The LAFCO denial of the request at this point seems to be only a formality. Proponents of exclusion are thoroughly convinced that the LAFCO is its only hurdle in gaining exclusion: a petition signed by 25 per cent of San Jose electors is seen as an easy task, while a final vote of majority approval in both San Jose and the Alviso community seem equally feasible. In fact, community leaders claim that only a very small minority of all Alviso's qualified electors oppose exclusion.

However, the Santa Clara LAFCO remains firm in upholding its basic philosophy: the fewer the number of municipalities, the better. In this light, the uphill battle for exclusion of Alviso is seen as all the more frustrating since the Government Code does not include any provision for appealing a LAFCO decision.

Suggested Changes in the Government Code

Our criterion for suggested changes in the California Code affecting the organization of cities is the following:

> Voters in a community within an existing city should have the right to form a new city, subject only to a substantial consensus within the community and protection of the legitimate rights of other affected groups.

This criterion explicitly denies the right of public officials in county or regional bodies, such as the LAFCOs or metropolitan councils of government, or the State to veto such actions. Specifically, such public officials would not have the right to determine the "best" structure of local government either for the petitioning community or for the larger region.

The present California Government Code in combination with the operations of the LAFCOs essentially prohibit the creation of new cities from existing cities. Our earlier analysis and evidence suggests that these restrictions are not consistent with responsive and efficient local government. Voters in individual communities in certain conditions may make a mistake in choosing to form a new city. We believe, however, that they are less likely to make a mistake in terms of their own interests than would a semi-autonomous elected or appointed body. Moreover, we believe they have the right to make such mistakes. It is just such experimentation and diversity that has been the basis for the viability of our federal system.

Our approach to the suggested revision of the California Government Code is permissive, rather than prescriptive. Our suggested changes would make it easier to form a new city of any size or character. We do not believe it is

appropriate for the Code to specify the "optimum" size of new cities or to prescribe a reorganization of existing cities. The range of near-optimum city sizes is likely to be very large, and no evidence is available that would permit a general specification of this range.

Sections of the Government Code pertaining to the formation of counties provide a useful model for changes in the Code affecting the formation of new cities. For counties, the Code specifies certain minimum size and area conditions and a voting process in the affected counties. The voting process involves only the voters in the affected counties; no review or approval by any regional or State body is required. As no new county has been formed in California since 1907, we suspect that the voting process requirements for new counties are too restrictive, but it is the character, and not the specific provisions, of these sections of the Code that provides the model for changes in the Code bearing on the formation of new cities.

We suggest consideration of the following general Code provisions bearing on the Exclusion of Territory:

1. Action for formation of a new city would be initiated by filing a petition with the governing board of the existing city describing the area, population, existing municipal facilities, and assessed value of the proposed new city.

a) The area of the proposed new city should probably be modular to existing tax assessment areas, contiguous, and wholly within one county.

b) The petition must be signed by one-third or more of the registered voters in the area of the proposed new city.

c) Approval by a majority of the governing board of the existing city would be required only if formation of the proposed new city would create either of the following conditions:

.1 the assessed value per resident in the proposed new city is more than 25 per cent higher than the assessed value per resident in the remainder of the city, and/or

.2 formation of the new city would reduce the assessed value per resident in the remainder of the city by more than 10 per cent.

City council approval would not be required if neither of these restrictions are effective, in which case a qualified petition would be followed directly by an election. Approval by the city council would also be followed by an election. A majority vote by the city council against formation of the proposed new city, where either of the two restrictions are effective, would be final, and action could not be renewed for a stated period.

2. On qualification of the petition, the city council would construct an election only in the area of the proposed new city. A ballot pamphlet describing the proposed new city, a brief analysis by the LAFCO, and one argument each for and against the proposal would be distributed to each relevant qualified elector. Approval by two-thirds or more of the qualified voters in the area of the proposed new city would be required.

An alternative form of provision 1.C should also be considered. Approval by the city council would be required if the assessed value per resident in the proposed new city is more than 25 per cent greater than in the remainder of

the city. Approval by a majority of the voters in the remainder of the city would be required if formation of the proposed new city would reduce the assessed value per resident in the remainder of the city by more than 10 per cent. In general, we expect that the city council would adequately protect the interests of the remainder of the city on an Exclusion of Territories issue but this alternative may provide better protection to the voters against a substantial change in their tax base per resident.

These provisions are designed to assure both a substantial consensus within the proposed new city and a protection of the interests of the residents in the remaining city. The two-thirds voting rule would assure that new rules would be formed only if there is a substantial consensus for that action in a community. The more restrictive provisions where formation of a new city would significantly reduce the assessed value per resident of the remaining city would prevent the creation of "property tax islands" containing a concentration of the assessed value of the existing city, except with the majority approval of the governing board of the existing city. The effect of these provisions would make it easier for a less-wealthy community to form a new city than for a more-wealthy community; it would also be easier to form a new city from a larger existing city than from a smaller city. The suggested 25 and 10 per cent thresholds are arbitrary; they are designed to allow only insignificant reductions in the property tax base of the remaining city, except by approval of the council of the existing city. For the same level and unit cost of municipal services, these thresholds would permit a maximum reduction in the property tax rate in the new city of 20 per cent and a maximum increase in the property tax rate of the remainder of the city of

11 per cent. The Education Code bearing on the formation of new school districts also provides precedent for the 10 per cent threshold.

On this issue, the LAFCO would be restricted to an analytic and advisory role; it would have no authority to deny or delay the petition or voting process on the formation of new cities. Our study makes no judgments on the other existing activities and authority of the LAFCOs.

Some consideration should also be given to establishing a minimum city size although, for lack of evidence concerning the economies of scale among very small cities, we are reluctant to suggest a specific level. The early discussion by the LAFCOs may provide some guidance: Among the eight new cities (formed from unincorporated area) first reviewed by LAFCOs, the population ranged from 600 to 12,000 with an average of 5,325.[15] If a minimum city size is established, we urge that the minimum level for both the new city and for the remaining city be set at a population no higher than 10,000. This level is the smallest size city on which the Bergstrom and Goodman evidence / 5 / on economies of scale is based. A city of this size would also be sufficient for a coterminous school district of around 2,000 students. The Government Code also provides for the formation of new counties with a population of 10,000 or more. A minimum constraint on the population of new cities to a level of 10,000, we believe, may not be necessary but is probably sufficient to protect the interests of the major affected groups.

Some provision must also be established to assure the equitable division of existing public facilities and outstanding debt. We make no judgment on the appropriate procedures to resolve this necessary issue, except to express a concern that these procedures not be used to prevent a change desired by the affected parties.

Formation of Improvement Districts

Summary of the Present Streets and Highways Code

The Improvement Act of 1911 and the Municipal Improvement Act of 1913 of the California Streets and Highways Code are the main provisions enabling the creation of improvement and special assessment districts within a municipality. Although the two Improvement Acts follow different procedures, both include provisions for the creation of a broad range of improvements on streets, public transportation systems, public parks, and other public facilities such as lighting, flood control, and sanitation. A community wanting an improvement may recommend to the city council that certain improvements are necessary. Some cities require a petition signed by owners of 50 per cent to 60 per cent of the area of a proposed improvement district prior to improvement proceedings so as to eliminate proposed improvements that will not be accepted by the community.

The Improvement Act of 1911 requires that the City Engineer prepares a "resolution of intention" to create an improvement district which must include a description of the work to be done, estimated costs of the work, property within the district to be exempt from assessment, types of bonds to be issued, any contributions from city funds, and times of public hearings to be heard. After the resolution of intention is approved by a majority of the city council, the text of the resolution is published. The City Clerk and Superintendent of Streets then announces the public hearing via newspaper, mailed notices, and posted notices. The hearing(s) must be held between 15 and 60 days following the council's acceptance of the resolution.

A city council may allow or overrule any protest at its own discretion. If a written protest is filed by owners of more than 50 per cent of the area of the property to be assessed for the improvements, then improvement proceedings shall be discontinued and not resumed for at least one year, unless four-fifths of the city council overrides the protest. Any written protest filed by owners of less than 50 per cent of the area of the property to be assessed is not sufficient to prohibit proceedings; councils often informally override such a protest by a majority vote. Thus, despite the inordinate number of protest cases cited in the Streets and Highways Code, the provisions to undertake improvement districts are finalized by the city council, and the power of the property owners in the proposed district to protest are seemingly insubstantial.

The Engineer's resolution of intention is also a solicitation of contractors' bids. The Superintendent of Streets and the City Engineer reports to the City Council "the lowest responsible bidder" and, following a notice of award of contract, work on the improvement may begin.

The Superintendent of Streets and City Engineer then spread the assessment for the improvement district among the parcels of land in the district "in

proportion to the estimated benefits to be received by each of the several lots or parcels of land."[16] Since the method of "frontage assessment" was repealed in 1963, there is no specific criteria by which the superintendent evaluates benefits. The Code does have a provision which empowers landowners to protest the assessment at a public hearing, but the city council may refuse the appeal at its own discretion. The article in the Code concludes by stating: "All the decisions and determinations of the legislative body, upon notice and hearing as aforesaid, shall be final and conclusive upon the persons entitled to appeal to the legislative body."[17]

The Municipal Improvement Act of 1913 provides a different procedure for creating similar assessment districts. The 1913 Act requires a resolution of intention that need not specify detailed plans, but does require an engineer's report which must include an assessment roll containing a property description of all subdivisions of land and proposed individual assessments in proportion to "benefits." Although the Code does not specify guidelines for spreading assessments, the publication of the Engineer's report with the individual assessments allows landowners to lodge more knowledgeable written protests prior to the hearings. The hearings can therefore encompass a broader range of meaningful topics: both the method of assessments and individual amounts can become valuable determinants of the fairness of the improvement district, and the city council may adjust the assessments at the hearing. Similar to the 1911 Act, if written protests are lodged by owners of a majority of the area of the land in the proposed district, proceedings shall stop and not resume for at least one year unless four-fifths of the city council overrides the protest. Also, the Code concludes by establishing the finality of the council's decision.

Those landowners assessed must pay their assigned share within 30 days; following this date, the city council may sell, either publicly or privately, improvement bonds to represent unpaid assessments. The council may allot to the district a supplemental assessment which comes from the city's general fund. If a surplus exists, the council may create a special fund, refund money to those landowners assessed, or put it into the city's general fund (if it does not exceed 5 per cent of the cost of the total assessment).

A Recent Example

The City of Hayward Citizen's Information Bureau has published a pamphlet entitled "Financing Local Improvements." It describes the procedures that a community within a municipality must take in making a local improvement. The procedure described in the pamphlet may be deceivingly inviting to many property owners who can unwillingly be included in an improvement district.

A proposed improvement district in the Hayward Highlands within the City of Hayward illustrates problems which may be confronted by the City Engineer, the City Council, and landowners of property situated in an improvement district. The Hayward Highlands district, a large improvement district which encompasses 800 acres and would cost nearly $4 million, was proposed as a means to widen streets in the community and to install the necessary storm drainage facilities. The procedure to create the district was initiated by a written petition signed by owners of more than 60 per cent of the area of the proposed district. This petition is not required by the Streets and Highways Code, but is requested by the Hayward City Council as a means to estimate popular demand for an improvement. One landowner in the proposed improvement district owns approximately 55 per cent of the property. There are several reasons why some homeowners residing in the district oppose the improvement. First, a large majority of homeowners residing on Hayward Boulevard oppose the proposed improvement district since their street would become the main artery of the community. Second, several homeowners are opposed since they contend that they cannot afford the

assessment for the improvements, and that the projected benefits of the improvements are lower than the assessed costs. Third, a group of wealthy landowners oppose the improvement since it is their wish to limit population density and maintain the "rural identity" of the community. Finally, many of the small landowners either believe that their individual assessment is too high, or they repudiate the idea of being "sucked-into" an improvement district by a large landowner whose voting power is in proportion to the ratio of the size of his property to the entire area of the improvement district.

It is surprising that none of the property owners included in the assessment rolls protested the shape of the district. When the procedure for creating the district was switched from the Improvement Act of 1911 to the Municipal Improvement Act of 1913, it became a requirement that the City Engineer describe all parcels of land affected by the proposed improvements and the assessments on each parcel. Since the improvement district is nearly rectangular, the sizable area in the center of the entire district and immediately adjacent to Hayward Boulevard which is excluded from the district is obviously within the area affected by the improvements. As a result, the relatively wealthy homeowners in this "island" are exempt from the assessment rolls.

Thus, for numerous reasons, the owners of more than one half of the area in the territory filed a written protest to the Hayward City Council prior to the scheduled public hearing (the large landowner was among the protestors). This protest put the City Council into a bind: over $500,000 from the City's general fund had already been spent on engineering work and other preparations for the improvements. A standing protest would

effectively "tie-up" these city funds by preventing the construction of the improvements, the collecting of individual assessments, or the selling (either privately or publically) of bonds to compensate for uncollected assessments. The City Council offered to donate the spent money to a fund earmarked for the improvement district. This offer to lower each individual assessment on a prorated basis was done as a means to persuade landowners to withdraw their written protests. When owners of all but 15 percent of the land in the district removed their protests, it was no longer necessary for four-fifths of the city council to override a majority protest. The council informally overrode the remaining 15 percent protest by a majority rule and the order to begin construction was issued.

At this point, those protesting owners representing 15 percent of the district's area took their protest to Court. On June 27, 1973, the Superior Court of Alameda County upheld their protest and placed an injunction upon further construction of the improvement. In his Memorandum of Decision, Judge Robert Bostick accepted the cost analysis submitted by an expert witness for the petitioners, stating that "there is no substantial evidence" that the "District will provide to the petitioners' properties the requisite special benefit from the improvements to be constructed in any way proportionate to the cost of the assessments." Rather, the Judge concurred with the petitioners in concluding that "the relationship between the assessed value of certain properties in the district and the amount of the assessments indicates the severe cost burdens to be borne by those property owners."

Although successful court action is uncommon for homeowners within an improvement district the Hayward Highlands Improvement

District exemplifies several problems inherent in the Streets and Highways Code relating to local improvements. First, a large landowner may legally become a part of an improvement district in which he represents a majority of the land. In this manner, small landowners may be included on the assessment roll of a district to which they do not wish to a part. Second, the Code states that costs for an improvement should be assessed to landowners "in proportion to the estimated benefits to be received by each of the said several lots or parcels of land." Interviews with several city officials reveal that there are no established guidelines by which present and future benefits of an improvement ban be estimated. Third, the voting rule, which allocates votes in proportion to the area of land in the district, may not be fair to all landowners on the assessment roll of an improvement district if the assessments are distributed on any other basis. Finally, although the owners of land within an assessment district may file a written protest with the city council, the council is empowered to override any protest, and the only recourse to a council override is through the judicial process.

Suggested Changes in the Streets and Highways Code

Formation of an improvement or special assessment district provides an opportunity for a community within a city to obtain a higher level of certain municipal services than that available throughout the city. This opportunity, thus, can substantially reduce the costs of the uniform provision of a service throughout a city where the physical conditions and/or community preferences for these services vary widely within the city. Most California cities include one or more such dis .icts. The primary problems that have developed under the two Improvement Acts in the California Streets and Highways Code involve the distribution of assessments among the affected property owners.

Our criterion for suggested changes in this Code is the following: Commu..ities within a city should have the right to form improvement districts for several types of municipal services, subject only to substantial consensus within the community and protection of the legitimate rights of other affected parties. On this basis, we suggest consideration of the following changes to the Streets and Highways Code:

1./ The Improvement Act of 1911 and the Municipal Improvement Act of 1913 would be modified in the following ways:

a) The City Engineer, as presently required, would prepare a report describing the purpose and area of the proposed improvement

district and the estimated assessment on each property owner in the district. After distribution of this report to all property owners in the proposed district, a written protest signed by owners of property on which one-third or more of the estimated assessments are being levied would be sufficient, except under the specific condition described below, to stop proceedings and delay resumption for at least one year.

b) The City Council would maintain the authority to override a qualified protest by a four-fifths vote of the Council, only if there is a determination that a failure to form the district would create problems (flooding, sanitation, traffic, etc.) in other sections of the city.

The first suggested modification of these Acts would change the basis for a qualified protest from owners of one-half of the area of the proposed district to owners of property on which one-third of the estimated assessments would be levied. This suggested shift from an area to an assessment basis for a qualified protest would better discipline the distribution of assessments within the proposed district; at the present time, owners who would pay most of the assessments may own less than one-half of the area and, thus, not have sufficient votes for a qualified protest.

This change would weight individual protests in proportion to the increased taxes they would pay. Nicolaus Tideman [30] has recently proposed a similar "administered compensation" procedure for weighting protests to zoning changes. The suggested change from a one-half to a one-third rule for a qualified protest would assure a substantial consensus for the proposed district, measured by the proportion of the total costs of the proposed improvements.

We do not believe that an explicit criterion for distributing assessments can be effective, and we endorse the authority of the city engineer to distribute the assessments as he believes appropriate. If the estimated assessments are lower than the perceived benefits by owners of property on which a significant proportion of the assessments would be levied, a qualified protest would be registered. In this case, the city has the options of not renewing the proposal, contributing general revenues to lower all assessments if there are potential benefits to other sections of the city, changing the area of the proposed district, and/or redistributing the estimated assessments. We believe this is a sufficient discipline on the necessarily complex task of estimating the assessments on individual property owners.

The second suggested modification of the 1913 Act reflects a recognition of several types of potential external costs of urban development in areas within a city. If activities in one area create problems in other areas of the city, it is entirely appropriate to place the cost of facilities to reduce these problems on the property owners in the "problem-exporting" area. For this reason only, we suggest that the city council

maintain the right to override a qualified protest. Since this authority may be subject to abuse, we suggest that a four-fifths vote of the council be required to override a qualified protest. Property owners in the proposed district would then have the opportunity of a legal challenge of the council ruling on the specific grounds of failure to prove such external costs.

On net, we believe the process for creating improvement districts in California works quite well, and the better features of this process should be preserved. Specifically the procedures for initiating consideration of a proposed district, the responsibility of the city engineer for developing the detailed proposal and managing construction of the improvements, and the hearings process appear to be satisfactory. Our suggestions are primarily designed to improve the equity of this process, by minimizing the loss to those whose perceived benefits are less than the estimated assessments for the proposed improvements.

III. School Districts

Size and Performance

Theory

The general conditions affecting the optimal size of a school district are the same as for cities. This does not mean that the population served by a school district should be the same as for a city, indeed there is no reason to believe that the optimal jurisdiction is the same for any combination of local government services. A brief summary of the theory outlined in the last chapter, as it applies to school districts, is sufficient: The major potential economies of scale arise from spreading the cost of a given level of school services among more students and from geographic externalities. The major potential diseconomies of scale arise from managerial inefficiency, the reduced value of crowded services, and the increasing variance of preferences for school services. Determination of an optimal size of school district involves a balancing of the marginal diseconomies and economies of scale.

A quite different theory, specific to school systems, has been developed in the education literature and merits understanding. This theory develops in roughly the following way:

Educators determine a desirable range of courses and student services that each school system should provide.

Educators then determine the maximum desirable number of students per teacher, per counselor, etc.

The optimum school district size, thus, is based upon arithemetic product of the above two determinations. An increase in the desired number of courses and services, thus, would increase the optimum size of the school district, and a reduction in the desired student/professional ratio would reduce the optimum size.

This line of reasoning has had a powerful effect on the views of both educators and legislators. On this basis, the California State Board of Education grants greater local authority to unified school districts of 1500 or more students. James Conant /15/ recommends a minimum school district of 2,000 students. Howard Dawson /16/ earlier recommended a minimum school district of 9800 students. The American Association of School Administrators /3/ recommends minimum school districts of 10,000 - 15,000 students to make possible the direct provision of special services. The differences in these recommendations are primarily attributable to differences in range of courses and services to be offered directly by the district. The following statement drawn from a 1961 Study Guide prepared jointly by the California State Combined Committee on School District Organization and the State Department of Education /13/ efficiently summarizes the views of education officials on this issue:

> Studies have shown that it is not likely that a district having fewer than twelve to fifteen hundred pupils in grades 1 through 12 can provide even minimum

> desirable services at a reasonable cost. For such districts a number of services would undoubtedly have to be provided through the county superintendent of schools office. In an area where continued rapid growth is expected for a number of years, a unified school district which initially would have 2,000 plus pupils could be reasonably satisfactory. This statement, however, does not mean that a district should be organized for each area which has the minimum number of pupils. One having ten thousand or more pupils would be adequate in size and able to provide needed services at a reasonable cost. Other things being equal, optimum in terms of size, is probably one having from ten thousand to forty or fifty thousand pupils.

These views are widely shared by education officials and have been substantially incorporated into the California Education Code As far as we can determine, however, there was no evidence available at that time that school districts larger than the minimum acceptable size (around 1500 students) are superior on either a cost or student performance basis. The collective views of educators merit attention, but they are not a sufficient guide to good policy.

Most importantly, the approach leading to these recommendations accounts for only one of the conditions affecting the optimal size of a school district -- the spreading of the cost of a given level of services among a larger number of students. The above quotation from the Study Guide concludes with the statement, "Districts may, of course, be too large as well as too small for satisfactory operation," but there is no further consideration of the potential diseconomies of scale.

Our own research does not contest the value of the historical consolidation of the many small school districts in California

At the level of very small school districts, the economies from spreading the cost of a given level of services probably dominate the several types of diseconomies. Such consolidation of the very small school districts in California and elsewhere most likely reduced per student costs and/or increased the range of courses and services. The earlier consolidation movement, interestingly, was strongly supported by the California Taxpayers Association and the State Chamber of Commerce. At the present, however, two conditions are different: The consolidation of the very small school districts has almost run its course; over 90 percent of California students in unified districts are in districts of 1500 or more. And a substantial body of formal research that addresses the economies of scale of school districts is now available. It is now appropriate to question whether the California Education Code is appropriate to contemporary conditions.

Evidence

Over the last fifteen years, a substantial body of research has addressed the effects of school size and school district size. This section summarizes the results of the major prior studies and reports our study on the relation of student performance to school district size in California.

Several studies of local government expenditure functions described in the previous chapter also addressed the relation of public school expenditures to the population served. The studies by Harvey Brazer / 7 /, Werner Hirsch / 20 /, and by Thomas

Borcherding and Robert Deacon [6] -- using different methodologies and data sources -- each found no significant economies of scale in the provision of public school services.

We have identified only two studies that report any significant economies of scale in school services. Nels Hanson [18] estimated the relation of the unit cost residual (derived from another school expenditure study which controlled only for community characteristics) and school district size for a sample of 577 school districts in nine states. Hansen estimated that the minimum cost school districts ranged from 20,000 to 160,000 students in the nine states, with a median of 50,000. The estimated reduction in per student costs from a district of 1,500 students relative to the minimum cost district ranged from $15 to $96 (in 1958-1959), with a median savings of $27. The Hansen study, however, has two major flaws which have been corrected in subsequent studies: His study does not control for the level and quality of school services or for student performance. Hansen's statistical technique is also faulty; a relation of the unit cost residuals from another relation to school district size is valid only if there is no correlation of district size with the included community characteristics or with other important excluded characteristics. Hansen's results are suspect for these reasons and are not confirmed by any other study. John Riew [27], estimated the relation between unit costs and school size, attempting to control for the level and quality of school services, for 109 high schools in Wisconsin. Riew found that per student costs are lowest among high schools of 700 to 900 students.

Controlling for courses offered and teacher salaries, he found that per student costs are minimized for a high school of around 1,675 students. The corresponding school district sizes for a one high school district would be around 4,000 and 8,000 students. Riew's study is quite careful; its major weakness is the assumption that school quality and student performance are positively related to teachers salaries.[18]

Several more recent studies have directly estimated the relation of student performance on various types of standardized tests to school size or school district size, controlling for characteristics of the students, the schools, and the community. Jesse Burkhead, Thomas Fox, and John Holland / 11 / estimated this relation separately for high schools in Chicago, Atlanta, and some smaller communities. M.C. Alkin, Charles Benson, and R.H. Gustafson / 2 /,estimated this relation for school districts in California. Both of these studies found no significant relation of student performance to size. Herbert Kiesling / 24 /, in the most comprehensive study to date, found a consistent negative relation between student performance and school size over a range of high schools from less than 200 to over 4,000 students. Thomas James and Henry Levin / 21 /, in a recent review of this set of studies conclude with the following statement:

> "...all of the studies that have tried to relate school or school district size to educational outcomes have found either no relationship or a negative one between school enrollments and the level of educational output. These answers are not necessarily the final ones, for each of these studies acknowledges a number of

> methodological shortcomings that would qualify its conclusions. Yet, what cannot be dismissed is the consistency of the conclusions -- that while diseconomies of scale appear, economies of scale do not -- despite differences in the techniques of analysis, samples of schools, measures of educational outcomes, and so on."[19]

The primary study on which we have modeled our own research on school district size is by Herbert Kiesling / 23 /. Using a sample of 97 school districts in New York State, Kiesling estimated the relation of student performance on a standard battery of tests to IQ, school expenditures per student, size of the school district, and growth of the district. Separate estimates were made at three grade levels and for students from six socio-economic groups. Kiesling summarizes his findings on the size effect as follows "When all districts in the...sample are considered together, there are few pupil populations where the relationship of size and performance is not negative at advanced levels of statistical significance."[20] Kiesiing also finds strong effects of IQ, significant effects of per student spending only among the larger districts, and small and generally insignificant effects of the percentage growth in the district. One major advantage of Kiesling's study was his access to individual student data which he aggregated by socio-economic group within each district. The most serious qualification of his study is that the estimated effects of IQ and expenditure may be biased; student performance in basic subjects, IQ, and expenditures may be <u>jointly</u> determined by family background and community characteristics. In this case, Kiesling's use of ordinary least

squares estimation procedures may overestimate the effect of IQ and underestimate the effect of expenditures on student performance, but there is no similar reason to question his estimates of a negative effect of school district size.

Our own study of the relation of student performance to school district size was conducted for two reasons--to base the estimates on data specific to the largest California unified school districts for a recent year and to correct for the major potential methodological weakness of the Kiesling study. Our major disadvantage is the lack of access to individual student performance scores and characteristics. Kiesling's estimates, thus, may be more efficient than ours but possibly biased and less relevant to the California experience.

The basic structural equation for each of our tests was the following:

$$\frac{S}{S^*-S} = a + bI + cX + d \log_e N + u$$

The variables were defined as follows:

S median test score for each test

S* number of test questions on each test

I median IQ for each grade

X total current expenditures per student

N average daily attendance, grades 1 - 12

This formulation follows that by Kiesling, although we use a different tranformation of several variables. (In addition, Kiesling included the percentage growth of the numbers of students in each district, but this variable was not generally significant. We also included the

percentage growth in our original estimates with the same result, so this variable was deleted from subsequent estimates.)

The specific form of our dependent variable, $\frac{S}{S^*-S}$, is the ratio of correct answers to incorrect answers on each test. This form was chosen on the belief that test scores are probably not a linear measure of student achievement, e.g., on a test with 50 questions, a test score of 40 is a greater difference in achievement from a score of 30 than is the difference between a score of 30 from a score of 20. Use of this form of the dependent variable should also reduce any change of the variance of the residuals over different levels of the variable.[21]

We also recognized the possibility that student performance on cognitive tests, the measured level of IQ, and school expenditures per student may be jointly determined by family background and community characteristics. Both student performance and IQ, for example, may be jointly determined by school characteristics and family background. And parents with high potential children may be willing to spend more for education for any given community tax base. In these cases, both IQ and expenditures per student would not be considered "exogenous variables" and the ordinary least squares estimates of the structural equation would be biased.

For this reason, we used a two-stage least squares procedure. The first-stage "reduced form" equations express IQ and expenditures per student in terms of a set of family and community characteristics. The instrumental variables in these equations are defined below:

P index of family poverty

M per cent minority students

A assessed value per student

N average daily attendance, grades 1 - 12

The estimated level of IQ and expenditures per student from these equations are then used as independent variables in estimates of the structural equations. These estimates, thus, will reflect those effects on student performance of poverty, minority background, and community wealth that operate through the effects of IQ and expenditures. For a given level of IQ and expenditures, any additional effects of those conditions will not be reflected; this does not bias the results unless these additional effects are correlated with the included variables. All of the data are drawn from The California Testing Program 1970-1971 /14 7, with the exception of the expenditures data. A more detailed description of the data and sources is presented in the Appendix.

Student performance relations have been estimated for both reading and mathematics skills at both the sixth and twelfth grade levels. The IQ variable in each test is specific to each grade. All other variables are common to the district.

The basic sample includes 144 of the 146 largest unified school districts in California, all districts with average daily attendance of 2,000 students or more in 1970-1971. One district was deleted for lack of complete data. The basic sample also excludes the large Los Angeles Unified School District; this district of around 600,000 students is nearly six times the size of the next largest district, and we did not want this one observation to dominate the estimated effect of district size. Subsequent estimates based on an expanded sample including the Los Angeles district are essentially identical to those from the basic sample, so this concern was not merited. The basic sample includes districts with 46 per cent of the total public school

students in California and 70 per cent of those in unified districts. The expanded sample includes 60 per cent of the total students and 91 per cent of those in unified districts.

Several contentious issues should be addressed before reporting our results. We do not contend that student performance on cognitive tests captures all of the attributes of school output. And different school districts place different emphasis on the skills measured by these tests. Other conditions--the ranges of courses offered, the pleasantness of the school environment, student understanding of their colleagues and community--are surely important. However, we share the view expressed by Kershaw and McKean that

> ...despite...qualifications, we take the position that achievement in basic subjects is the most widely accepted and the most important dimension of school output. Learning in these subjects is a necessary part of the foundation for accomplishing the things that most people, individually or as nations, seem to want. We think, therefore, that scholastic performance is an appropriate measure of output to use in comparing education policy.[22]

We also do not contend that our results apply to unified school districts with less than 2,000 students or to elementary and high school districts. There still may be value to consolidating the smallest districts and to the formation of unified districts in areas served by a common high school, but we do not address these issues. Our sample includes a high proportion of public school students in California and most of those for which there has been special concern about the quality of their schooling. Any conclusion from our estimates should be specific to the sample from which they are made.

The two stage estimates of the structural equations from the basic sample are presented in Table 3 below:

Table 3 Student Performance in Relation to IQ, Spending, and Size

	Constant	I	X	N	R^2
Sixth Grade Reading	-14.38 (-20.65)	.18 (26.92)	.52E-3 (1.94)	-.11 (-3.73)	.90
Mathematics	-13.43 (-16.01)	.17 (20.30)	.75E-3 (2.34)	-.04 (-1.05)	.85
Twelfth Grade Reading	-2.16 (-12.34)	.03 (17.98)	.51E-6 (.83E-2)	-.17 (-2.46)	.81
Mathematics	-2.42 (-11.07)	.03 (15.53)	.19E-4 (.25)	-.18 (-2.11)	.78

Sample size is 144

Numbers in parentheses are "t" statistics

The major conclusions from the above estimates are the following:

1. Median student IQ makes a positive and highly significant contribution to median student performance on all tests. The effect of IQ on student performance, however, appears to be significantly larger at the sixth grade level than at the twelfth grade.
2. Current expenditures per student in the school district makes a significant positive contribution to both reading and mathematics performance at the sixth grade level. There appears to be no significant effect of school spending on student performance at the twelfth grade level.

3. School district size has a consistent negative relation to student performance and is highly significant on three of the four tests.
4. The explained variance of median student performance appears to be slightly higher for reading tests than for mathematics and slightly higher at the sixth grade level than at the twelfth grade.

These conclusions are almost wholly consistent with those by Kiesling, based on New York State data. More importantly, they confirm the general conclusion from a number of studies that "have found either no relationship or a negative one between student enrollments and the level of educational output." [23]

The conclusion that student performance in large school districts is lower than in smaller districts is sufficiently important and significant to merit more detailed examination of the underlying reasons for this relation. We were able to examine some of these phenomena, but more study would be valuable. Using only data from The California Testing Program and our basic sample of 144 of the largest districts, we tested the relation of school district size to a number of school district characteristics not included in our structural relations. We found, for example, that staff turnover has a significant negative relation to district size. We also found that median teacher salaries have a significant positive relation to district size, not because the salary schedules are significantly different, but just because of the lower turnover of teachers. Large school districts, apparently in response to the higher median teacher

salaries, have larger average class sizes. In general, thus, larger school districts appear to have older teachers, higher teachers' salaries, and larger classes--and these conditions may explain much of the lower relative performance of their students for a given expenditure level. We were surprised by two of our findings: neither the measured number of non-teaching personnel per student nor the amount of pupil mobility appears to be significantly related to school district size. A closer examination of these phenomena is necessary, however, to provide a guide to more detailed educational policy.

Dissolution and Reorganization

Summary of the Present Education Code

The California Education Code contains two provisions relating to major reorganization of unified school districts. The first enables a portion of a unified school district to exclude itself from the district and createits own district(s). This procedure requires that both a motion for dissolution of the original district and a motion for the creation of a new district be considered and voted upon simultaneously. The second is a provision allowing boundary changes of unified school districts. Although the procedures for Transfer of Territory are not the same as those for Dissolution, both methods must travel through the same administrative bodies.

The dissolution procedure is initiated by the filing of a petition signed by at least 25 per cent of the registered voters residing in the district with the county superintendent of schools having jurisdiction over the district. The county superintendent verifies the validity of all required signatures and sends the petition to the County Committee on School District Reorganization. This county committee is augmented to include representatives of the governing boards of each district situated in the territory under consideration. Each school district counts as only one for quorum and voting purposes, and the vote of each district must represent the majority of the members of the governing board of the district.

The augmented county committee adopts a tentative recommendation and then holds a public hearing; the final recommendation submitted to the

State Board of Education must be approved by a majority of the county committee. If the school district sought to be dissolved is situated in more than one county, the principal county committee notifies the supervisor of each county affected. After studying the recommendations of the county committee of the principal county, the county committee of an adjacent county may (1) concur in the plans and recommendations, in which case the concurrence accompanies the report submitted by the principal county committee to the State Board of Education, (2) not take any action, which is interpreted as a concurrence with the plans and recommendations of the principal county committee, or (3) not concur, in which case it may negotiate with the county committee of the principal county within 60 days, or submit its own plans and recommendations to the State Board of Education.

Each set of plans and recommendations submitted to the State Board of Education must include plans for both dissolution and reorganization. The creation of new districts must comply with several minimum requirements stated in the Education Code. The State Board of Education considers the "boundaries of existing high school districts as the minimum geographical base for the organization of individual unified school districts" unless (1) the proposed new district has adequate average daily attendance: a projected ADA of greater than 10,000 by its seventh fiscal year, or, if the assessed value per pupil in grades K - 12 is greater than the statewide average, (then) an ADA of greater than 5,000 after the first year, or greater than 7,000 by the seventh fiscal year of existence; (2) the proposed new districts are adequate in financial ability: the average assessed value per pupil of the territory comprised

by the new district cannot deviate from the assessed value per student of the existing district by more than 10 per cent, or by more than 15 per cent if the average assessed value per pupil in the territory of the proposed new district is above the statewide average; (3) the new districts are each organized on a basis of substantial community identity, (4) the plans result in an equitable division of existing property and facilities, and (5) that the plans and recommendations do not promote "racial or ethnic discrimination or segregation."[24] In addition, the Code specifies that for each new high school district, (A) that the assessed value of the elementary district is greater than $25 million, and the existing district from which territory is withdrawn has an assessed value greater than $25 million, (B) the area of all elementary school districts comprises at least 200 square miles, (C) the ADA of the elementary districts is at least 500, and (D) the ADA of grades 7 - 12 in the new district is greater than 500.[25]

The above regulations severely restrict the creation of any new district which is not substantially larger than the average of present districts. A school district with an ADA greater than 5,000 is larger than 82 per cent of all California school districts, while one with an ADA of 10,000 is larger than 91 per cent of all California school districts. Although these are guidelines to be followed by the State Department of Education, the county committees are well aware of their effective veto powers since the State Board will most likely concur with the county recommendations denying dissolution.

The State Board of Education must act upon submitted plans and recommendations within 90 days. The State Board may deny a request

for reorganization, in which case it must notify each county superintendent and committee affected by the request. (It must submit to each body a statement of the reasons for disapproval.) Any county committee may revise and resubmit its reorganization plans and recommendations so as to accommodate the suggestions of the State Board. The Code concludes by stating that if the plans are not resubmitted within 18 months, the county committee no longer has jurisdiction over the plans.

If the State Board of Education approves the submitted plans and recommendations, the notice of approval is submitted to the county superintendent of schools who prepares an election. The superintendent may hold a public hearing, and must mail to each registered voter a ballot pamphlet to include an outline of the reorganization and the recommendations of the county committee, plus arguments for and against the proposed reorganization. This ballot pamphlet must receive approval from the State Board of Education before it is circulated. The costs of the election are charged against the general fund of the county in which the original district is situated, or are prorated to the general funds of the counties in proportion to territory if the district is situated in more than one county.

All qualified electors residing within the territory of the district under consideration are eligible to vote. The original district is dissolved and the reorganization is effected if a majority of the votes favor dissolution. If a majority of the voters oppose the proposal, no petition or election "for a similar purpose" may be ordered for at least three years.

Similar to the dissolution provision, the Transfer of Territory procedure is initiated by the filing of a petition signed by 25 per cent of the

registered voters residing in the territory proposed to be transferred with the County Superintendent of Schools. A hearing is then conducted by the governing board of the district to which the territory is to be transferred. The recommendation of the governing board is then re-submitted to the county superintendent who transfers the proposal to the County Commission on School District Reorganization unless the territory involves less than 5 per cent of the total area of the district from which it is transferred, in which case the proposal may go directly to the County Board of Supervisors.

The Education Code states that the County Committee on School District Organization should send the proposal, accompanied by its recommendation on the proposal, to the county supervisor unless it is incompatible with the Master Plan, in which case it should to to the State Board of Education. Since every transfer of territory inherently involves a change in the Master Plan, the State Board of Education is empowered to deny the petition, or order one of the following procedures to be undertaken: (1) grant the transfer, (2) hold an election in the territory to be transferred, or (3) hold an election in the entire district from which the transfer is proposed.

Another public hearing must be held prior to an election, at which time two actions may be taken: (1) the board may determine whether all or part of the territory shall be transferred, and (2) the governing board of the district "losing" the territory may submit a written opposition to the transfer. The board may then order an election to be held in the territory on the written protest, unless the territory to be transferred represents at least 25 per cent of the assessed valuation

of the entire district or the territory contains the only school building of the district, in which case the election is to be held in the entire district that the territory is situated.

Any election relating to reorganization is determined by a majority of the votes cast in the territory.

Thus, the procedures for both dissolution and transfer of territory have a major common characteristic: both the County Committee on School District Reorganization and the State Board of Education hold effective veto powers over any petition. Although the stringent regulations for dissolution in the Education Code are not included as guidelines for the transfer of territory procedure, county boards on school district reorganization and the State Board of Education are given the discretionary power to reflect effectively the concepts of the current consolidation movement.

Some Recent Experience

Although the strict limitations for dissolving and reorganizing unified school districts prevent the majority of California's school districts from changing boundaries, numerous districts feeling the strains of diseconomies of scale are eligible for decentralization under the California laws. (California has 25 unified school districts with average daily attendance greater than 20,000.) However, the reorganization of these districts has thus far been thwarted by school administrators who (1) feel at home with their current positions and do not want the system to be upset and (2) find a national appeal and a sense of accomplishment in large organized units. For example, Alameda County school officials say that they cannot feel that their job is completed until the last remaining high school and elementary school districts are unified. This type of thought is reflected by two characteristics prevalent in the Education Code relating to school district reorganization. First, all reorganization procedures are geared towards consolidation of school districts and second, there is not any mention of school district organization in terms of educational performance of students. One must assume that authors of these sections of the Code placed administrative ease at a higher priority than student performance.

An example of a district that has used the Code's dissolution procedures has not been found. This may reflect past denials by the County Committee on School District Reorganization and the resulting hopeless feeling of decentralization proponents. A bill in 1970 proposing an administrative decentralization of the huge Los Angeles Unified School

District passed the legislature but was vetoed for political reasons.

There are examples of attempted reorganization by means of the Transfer of Territory provisions of the Code. A recent example of this procedure is the attempted transfer of territory of the Washington Manor community from the San Lorenzo School District to the San Leandro School District. The community proposed to be transferred, which includes 3,500 students, receives all of its services except education from the City of San Leandro. This unique situation began in 1954 when the Washington Manor community realized that it would receive more State and Federal aid if its first schools were built as a part of the San Lorenzo School District. There are currently one high school and four elementary schools in the community. There are several reasons why this community is pushing for a transfer of territory. First, it is seeking complete identity with San Leandro. Second, the expenditures per pupil and revenue limit of San Leandro are much higher than those of San Lorenzo's school district. Finally, San Leandro's higher assessed valuation enables a substantially lower educational tax to be assessed than in San Lorenzo. A petition signed by 25 per cent of the electors in Washington Manor has been submitted to the County Superintendent of Schools; a hearing to be conducted by the County Committee on School District Reorganization is pending. San Leandro will most likely prevent the transfer since the average tax base per pupil in Washington Manor is smaller than its own; the transfer would cause San Leandro's tax rate to increase by approximately $1 per $100 if expenditures per pupil are to remain the same.

The transfer of territory would "reverse" the average daily attendance of the two districts: San Lorenzo's current ADA is about 13,000 while San Leandro's ADA is about 9,500. The importance attached by education officials to a district size of 10,000 students will probably be considered a sufficient basis to effectively deny this proposed transfer. The average assessed value, racial balance, and poverty level in Washington Manor are the same as in the entire district of San Lorenzo; thus, the only reason why San Lorenzo would oppose the transfer would be due to the school administrator's over-concern with "fixed costs." As a result, this seemingly logical transfer of territory will probably be denied.

This example illustrates the uphill battle faced by one who wishes to alter substantially school district boundaries. The Code procedures for dissolution are "stiffer" than those for transfer of territory, since, for dissolution, the entirety of the district losing territory may stop proceedings, while the district losing territory in a transfer proceeding in only empowered to offer written and vocal protests at hearings, or require that an election be held.

A view of recent trends in California school district reorganization shows the inclusion of dissolution and transfer of territory provisions in the Education Code to be deceivingly difficult in effecting. The "four phases of Reorganization Plans" (since 1945) as identified by the State Department of Education has included financial incentives to districts that unify and a period of mandatory elections on unification in those territories served by high school and elementary school dis-

tricts. The high rate of unifications, coupled with an increase in statewide average daily attendance, has resulted in many oversized school districts whose structure may be in the best interest of aumini-strators but not the students. This interpretation of the Code is not a condemnation of all unifications; rather, its purpose is to make visible the obstacles faced by citizens who have become disenchanted by relatively poor student performance and inordinately high expendi-tures in large unified school districts. For example, it is safe to say that the parents of all 678,919 students attending schools in the Los Angeles Unified School District in 1972-73 were <u>not</u> satisfied with the district's organization. Why, then, should the aforementioned proce-dures, highlighted by semi-automonous administrators with veto powers, force these citizens to put the matter into the hands of Sacramento officials who cannot be as sensitive to the local conditions and the preferences of the local population? This question is only one of many which naturally arise while following the procedures for school district reorganization.

Suggested Changes in the Education Code

Many California school districts are too large, in terms of the interests of students and their parents. School expenditures per student do not vary systematically with school district size. And student performance appears to be lower in the larger districts. In the absence of economies of scale, there appears to be no compelling reason for supplying a common level and character of school services over a large district where there are substantially different preferences for these services. And the evidence of significant diseconomies of scale, of course, reenforces this conclusion. The present Education Code, however, effectively prohibits the formation of school districts in a community now served by a larger district because of the effective veto power of county and State education officials. We believe the powers of these officials and the rules by which they operate are inappropriate to current conditions.

Our criterion for suggested changes in the Education Code bearing on the dissolution and reorganization of school districts is the following:

Voters in a community within an existing school district should have the right to form a new school district or to merge with an adjacent school district subject only to a substantial consensus within the community and protection of the legitimate rights of other affected parties.

On this basis, we suggest consideration of the following changes to the Education Code:

1. The process for forming a new school district or for merging a community with an adjacent district would begin with the filing of a petition with the County Superintendent of Schools. This petition

would describe the area, number of students, existing school facilities, and the assessed value of the proposed district.

a) The area of the proposed district should probably be modular to existing tax assessment areas, contiguous, and entirely within a county.

b) The petition must be signed by one-third or more of the registered voters in the petitioning community.

c) Approval by a majority of the governing board of the school district from which the area would be separated would be required if separation of the area would create <u>either</u> of the following conditions:

.1 The assessed value per student in the area proposed for separation is more than 25 per cent higher than the assessed value per student in the remainder of the district, and/or

.2 Separation of the area would reduce the assessed value per student in the remainder of the district by more than 10 per cent.

A majority vote by the school board against the separation of area from the district, where either of the two restrictions are effective, would be final, and action could not be renewed within a stated period.

d) A qualified petition to merge a community with an adjacent school district would also require approval of a majority of the governing board of that district. A majority vote by the "receiving" district against the proposed merger would be final, and action could not be renewed within a stated period.

2. Following validation of the petition and, where necessary, the approval of the school boards of the affected districts, an election would be held only within the area of the petitioning community. A ballot pamphlet would be distributed that would include a description

of the proposed district, an analysis by the County Committee on School District Reorganization, and one argument each for and against the proposal. Approval by two-thirds or more of the registered voters in the petitioning community would be required to form a new district or to merge the area with an adjacent district.

An alternative form of provision 1.c should also be considered. Approval by the school board from which the area would be separated would be required if the assessed value per student in the petitioning community is more than 25 per cent higher than in the remainder of the district. Approval by a majority of the voters in this district would be required if separation of the area would reduce the assessed value per student in the remaining district by more than 10 per cent. Similarly, approval by a majority of the voters in a "receiving" district would be required if merger with a petitioning community would reduce the assessed value per student in the enlarged district by more than 10 per cent. In general, we expect the school boards would adequately protect the interests of the affected districts on Dissolution and Reorganization issues, but this alternative may provide better protection to the voters against a substantial change in their tax base per student.

These suggested changes, we believe, would assure that specific changes in school district organization both reflect a substantial consensus in the petitioning community and protect the interests of the other major affected groups. The two-thirds rule is designed to assure a substantial consensus for change with the petitioning community. Approval by the school board of the district from which the area would be separated

and/or the receiving district, when they have significant interest, should protect these interests. The 25 per cent, 10 per cent thresholds where approval of the school board of the district from which the area would be separated is required, should be sufficient to prevent the formation of "tax island" school districts including a concentrated share of the assessed value of an existing district and would still permit minor changes in the assessed value per student. The suggested levels of these thresholds are recognizably arbitrary but the 10 per cent threshold is consistent with the absolute restriction on assessed value changes prescribed by the present Education Code. For the same level and unit cost of school services, this would permit a maximum increase in the property tax rate in the remainder of the district of 11 per cent. On net, similar to the effects of the suggested changes in the Government Code, these provisions would make it easier for a less-wealthy community to form a new district than for a more-wealthy community and would make it easier to separate from a larger existing district than from a smaller district.

For these issues, the County Committee on School District Reorganization and the State Board of Education would be restricted to an analysis and advisory role. They would specifically not have the authority to deny or delay the formation of a new school district or transfer of territory based on nonconformity with the county master plan or a judgement of what is best for the petitioning community. We make no judgement about the other activities and authority of these groups.

Some consideration should also be given to establishing a minimum size of new school districts. Unfortunately, there is almost nothing but conventional wisdom on which to base a minimum, as there is no consistent evidence of economies of scale even among the smallest districts. If a

minimum size for unified school districts is established, we urge that the minimum for both a new district and the remaining district be set no higher than 2,000 students in grades 1 - 12. A unified district of 2,000 students, according to educators, is sufficient to provide a full range of courses and is the smallest district size on which our finding of diseconomies of scale is based. Around 2,000 students in a district is also consistent with a coterminous city of 10,000 residents, the minimum size of a new city in our suggested changes in the Government Code and the minimum size of a new county authorized by the present Code.

Some procedure also must be established for assuring an equitable division of the property and outstanding debt of between the new district and the remainder of the existing district. As a rule, except where formation of a new district would significantly reduce the assessed value per student in the remaining district, we believe that the officials in the existing district should not have a veto power on actions to separate from this district. The County Superintendent of Schools is probably the appropriate official to resolve any disputes about the division of property and debt, but any powers to deny or delay the action should be carefully limited.

One very sensitive problem remains for which there is no easy solution: The present Education Code states that any proposed reorganization of a school district must not promote "racial or ethnic discrimination or segregation". We understand and sympathize with the reasons for this provision. It is also clear that some communities consisting primarily of minority races and other communities for which most of the residents are of majority races would prefer school districts organized around their own communities. One interpretation of this provision--that "racial or ethnic discrimination or segregation" not be permitted within any school district--

is consistent with both of these concerns, but we make no judgement about the general desirability of this approach or whether it would be supported by the courts. For all the problems of resolving this issue, we believe that the opportunity to form new, smaller school districts is sufficiently important to responsive, quality education that our suggested changes in the Education Code merit consideration, regardless of the way the issue of the racial composition of school districts is resolved.

INTERDISTRICT ATTENDANCE

Summary of the Present Education Code

The California Educational Code has provisions enabling pupils residing within the boundaries of one school district to attend a school in another district. This interdistrict attendance is permitted for students in grades K through 12 (excluding seventh and eighth graders who automatically transfer from an Elementary District to a High School District when they are not part of a Unified School District as established in Sections 10801 to 10816 of the California Educational Code).[26]

The Code currently requires a three-party agreement between the parents of the pupil and the governing boards of both the district in which the pupil resides and the district in which the pupil wishes to attend. If all three parties approve of the interdistrict transfer, the governing boards of the districts must follow the guidelines established by the recent passage of Assembly Bill 1267 in determining how much the residing school district must reimburse the attending district for the pupil's education. Under AB 1267, the average daily attendance is credited to the residing school district, even in the event of interdistrict transfer. The amount to be paid by the residing district to the attending district "shall not exceed the revenue limit per unit of average daily attendance"[27] of the attending district. An agreement of this kind cannot exceed five consecutive school years. The present Education Code does not specify whether a parent may augment the transfer

of funds from the district of residence. Discussion with education officials at the county and State levels, however, suggests that such parental augmentation would not be allowed.

A parent requesting an interdistrict attendance agreement may appeal the case to the county board of education if either or both governing boards of the districts refuse a request, or if either or both governing boards neglects to respond to the parent's request within 30 days.

The Code does not establish any criteria by which a governing board of a school district should follow in either accepting or turning down a parental request for interdistrict attendance. This discretion given to the governing boards has resulted in varied interpretations of the concept of interdistrict attendance and has left many perturbed parents in the wake of inconsistent decisions. The Education Code states that the county board of education should uphold an appeal for interdistrict attendance if "it is for the best educational and health interest of the child."[28] In practice, this nebulous guideline allows the County Board of Education to uphold or turn down a request and say its final decision is in the best interest of the pupil. However, many decision makers on the county and district level camouflage their top priority criteria--such as financial considerations, administrative ease, and appeasement of irate and vocal parents--behind this catch-all phrase. Thus, the best interests of the students are not always served.

In addition, AB 1267 has included in the Code a provision requiring the attending district to record all interdistrict attendance agreements and report them to the county board of education. This new provision

will eliminate "casual" agreements between districts wherein adjacent districts previously allowed interdistrict attendance without paying for the cost of the pupil's education, and will provide, for the first time, statewide data on such arrangements.

The recent changes in the Education Code will have several predictable results. First, the differing sizes of revenue limits will cause school districts to place heavier weights upon financial transactions as a criterion for permitting or prohibiting interdistrict attendance. If districts charge at or close to their individual revenue limits, then a "residing" district with a small revenue limit will be losing money if it permits sending a pupil to another district. Similarly, districts with a high revenue limit would benefit by sending a pupil to a "poorer" district. Second, any district with "isolationist" tendencies may disallow any request for interdistrict attendance and discourage appeals to the county board of education. Third, the administrative paperwork may become a deterrent to a district or county board whose stand on interdistrict attendance was previously permissible. Finally, a district in which a pupil resides may wish to prevent letting any students attend schools outside the district since the district may be concerned with high fixed costs.

There are provisions in the Code which expedite a parental appeal to the county board of education and prevent an absolute veto power by the district in which the pupil resides. If the county board of education upholds an appeal and the residing district refuses to pay the attending district, then the county superintendent of schools having jurisdiction of the residing district

may determine the cost of educating a pupil, within the revenue limits of the attending districts, and draw a requisition against the funds of the residing district in favor of the attending district. In addition, a pupil may attend a school in a district other than the one in which he resides for up to two months pending decision by the County Board of Education.

The Code also includes provisions for special cases of interdistrict attendance. First, interdistrict, intercounty attendance may be granted if the county boards of education of the two involved counties determine that "it is for the best educational and health interest of the child." The financial transactions are limited to the revenue limit of the attending district. Again, there is no provision establishing any criteria in determining whether a transfer is for the best education or health of a pupil.

To summarize, the main changes in provisions for interdistrict attendance-which now require the average daily attendance to be credited to the residing district, a mandatory payment of funds by the residing district to the attending district, the filing and recording of all interdistrict attendance agreements--will undoubtedly diminish the number of interdistrict transfers and not serve the best interests of the students.

Some Recent Experience

Interdistrict attendance of pupils in Alameda County has long been a means by which district and county school officials have appeased parental demands for their child's better education, health, or ease of transportation. Prior to the passage of AB 1267 on July 11, 1973, agreements were undertaken in a casual manner; no consistent records of interdistrict attendance were kept since agreements were considered a "district matter." AB 1267 has formalized interdistrict attendance and changed its financial character. The probable result will be fewer interdistrict transfers regardless of their effect upon a pupil's education, more paperwork for confused school administrators or the district, county, and state levels, and more irate parents who will become increasingly disenchanted with California's educational process.

Prior to AB 1267, the average daily attendance for apportionment purposes was credited to the district that the pupil attended; in this manner, a pupil attending a school in a district other than the one in which he lived would "take" with him the state apportionment to the attending district (about $125 in 1972-73). The Education Code also stated that "The terms of the agreement may require the payment of actual cost of education of the pupil...as determined by the governing boards in their discretion..."[29] The governing boards of school districts in Alameda County, when given their free reign, made casual interdistrict attendance agreements to include a minimum amount of financial transactions. Despite varying expenditures per pupil in different districts, most districts agreed to exchange students at no cost other than transferring the state

apportionment. Most districts tried to maintain informal agreements and avoid controversies provoked by the more vocal parents; as a result, district governing boards negotiated on most matters and few cases were appealed to the County Superintendent. The governing boards' wide discretionary powers in allowing or denying requests for interdistrict attendance seemed to have resulted in a relative neglect of "the best educational and health intereest of a child" in favor of avoiding controversies with the most troublesome parents. Since no consistent records were kept on interdistrict attendance, it is hard to determine the extent to which transfers occurred. For example, financial officers in Albany Unified School district claim that they received 87 pupils from Berkeley Unified, while officers of Berkeley claim that they allowed a total of 40 outgoing transfers for the same academic year. However, it is known that some districts were willing to take a financial loss as a means to avoid controversies and additional paperwork.

The recently passed law requires that the average daily attendance for apportionment purposes is always credited to the district of residence and that the governing board of the district in which the pupil resides shall pay the district in which the pupil attends a negotiated amount not to exceed "the revenue limit per unit average daily attendance of the district of attendance." In addition, all interdistrict attendance must be recorded and submitted to the County Board of Education.

The results of these changes can only be predicted. If districts agree not to charge anything, a district which receives more students than it sends out will lose money; this effect will depend upon the difference in revenue limits among districts in Alameda County. However, if

all districts agree to charge their revenue limits to districts of incoming students, interdistrict attendance will be sharply curtailed: a district with a relatively low revenue limit (for example, Albany's revenue limit is less than $900) will not be willing to pay a district with a high revenue limit (for example, Berkeley's revenue limit is $1520) for the education of a student under consideration for interdistrict attendance. Reversing the order, districts with high revenue limits would benefit by accepting incoming students since a district's marginal cost of educating an extra pupil would most likely be less than its revenue limit. If all districts in a county agree to pay or receive a set amount (say, $1000), not all receiving and sending districts can possibly be satisfied with the arrangement since revenue limits vary substantially among districts. Recent interviews with several school district officers have shown that financial considerations will become the major priority in determining the viability of interdistrict attendance. In fact, the financial officer of one school district with a high revenue limit sent to the District Superintendent a written recommendation that applications for all out-bound interdistrict attendance be denied. Although this recommendation does not seem rational in financial terms, it is representative of the type of confused and unpredictable response one could expect from school administrators confronted by a new set of rules.

The Alameda County Board of Education had previously established guidelines helping it decide interdistrict attendance appeals. Though a new set of guidelines has not been established, the county does expect the amount of appeals to increase sharply. The Educa on Code limits a pupil's interdistrict attendance to five consecutive academic years; however, the previous lax

interpretation of the code permitted some children to receive entire K through 12 educations from a school which is part of a district other than the one in which the pupil resides. One can easily predict the reaction of parents whose child has attended a school in another district for K through 11 when they are told no interdistrict attendance would be permitted for the final high school year.

The problems with the new interdistrict attendance laws encountered by districts in Alameda County may exemplify similar problems in other districts throughout the State. If this is true, "the best educational and health interest of the child" may continue to be stifled by financial considerations of school districts. Thus, the purpose of the legislation will not have been fulfilled, and appropriate changes should be considered.

Suggested Changes in the Education Code

Schooling is one of the few local government services for which there is no reason inherent in the production process to supply a uniform level and character of service to all residents of a contiguous area. As a consequence, an opportunity could be provided for individual families to select the school district for the education of their children, an opportunity that is not dependent on either the approval of their neighbors or on moving their residence. Any restrictions on this opportunity are specific to the Education Code, not in the nature of the service, and could be changed by modifications to this Code.

Our criterion for suggested changes in the Education Code affecting Interdistrict Attendence is the following: Parents of each child should have the right to select the school district in which their child would be enrolled, subject only to the approval of that district. This criterion does not recognize a right of school officials in the district of residence to deny a request for interdistrict transfer or to prevent the authorized transfer of funds to the district of attendance. On the basis of this criterion, we suggest consideration of the following changes in the Education Code affecting Interdistrict Transfer:

1. Parents of each child would have the right to request that their child be enrolled in any school district in the State.

2. School officials in the proposed district of attendance would have the right to approve or deny a request for interdistrict attendance. These officals,

however, could not deny such requests on the basis of the race or ethnic identification of the student, and the pattern of their decisions would be monitored to enforce this restriction.

3. On approval of this request, an amount of funds would be transfered from the district of residence to the district of attendance equal to the lower of the revenue limit per student in the district of residence and the revenue limit per student in the district of attendence.

4. If the revenue limit per student in the district of residence is lower than in the district of attendance, school officials in the district of attendance would have the right to require a payment by the parents of an amount no greater than the difference in the revenue limits as a condition for approving the requested transfer.

These provisions, in effect, would create a "tuition voucher" system within the public schools in California. The level of public financing and the character of the school services would continue to be determined by the voters and school officials in each district, as affected by State and Federal subventions and other provisions of the Education Code. Parents would continue to pay taxes to the district of residence, but would have the authority to transfer the lower of the revenue limits per student to another district. Determination of "the best educational and health interests of the child", however, would be the responsibility of parents and school officials in the district of attendance, and not that of school officials in the district of residence, the county and the State. The primary effect of these suggested changes, thus, would be to transform the interdistrict attendance agreements from three-party agreements to two-party agreements.

These provisions should increase the range of choice within the public school system and protect the interests of other affected groups. If the revenue limit per student in the district of residence is higher than in the district of attendance, an interdistrict transfer would increase the average revenues per student in the district of residence, and the two-party agreement, as a rule, would protect the interests of the child and the district of attendance. If the revenue limit per student in the district of residence is lower than in the district of attendance, the average revenues per student in the district of residence would not be reduced.

School officials in the district of attendance may not require parental payment of the difference in revenue limits if there is significant excess capacity in specific schools in that district. If they do require a payment no greater than the difference in revenue limits as a condition for approving the interdistrict transfer, there appears to be no valid reason to prohibit such a payment; agreement by the parents to make this payment in addition to paying the school tax in the district of residence should be a sufficient indication that they prefer this arrangement to sending their child to the district of residence, and no other party is damaged. The provision of the California Constitution that free public schools shall be maintained throughout the State would not be violated; every child would have the opportunity to attend free public schools in the district of residence at no direct cost to their parents. A parental payment in addition to their school taxes would be made only when three conditions apply--when their child is enrolled in a district other than their district of residence, when the revenue limit is higher in the district of attendance,

and when a parental payment is required by school officials in the district of attendance as a condition for approving an interdistrict transfer. Some consideration should be given to creating a State fund to pay a part of any required parental augmentation, varying inversely with the income of a family requesting an interdistrict transfer.[30] Such an arrangement may avoid any constitutional issue concerning the suggested parental augmentation provision.

One effect of these suggested changes would be to increase the competition among school districts in California, most importantly in the major metropolitan areas. School officials would have to be more responsive to the interests of all of the students in the district, because unsatisfied students could more easily transfer to a nearby district. At present, school districts face a competition only from transfer of students to private schools and from the movement of families to other districts; this competition is limited by the high additional cost of private schooling or the costs of moving a family. Compared to present conditions, the suggested changes in the interdistrict transfer provisions would specially benefit those students from families for which the costs of private schooling or of moving are high relative to their income.

One probable effect of the suggested changes would be to increase public school expenditures in low revenue limit districts. Parents who are dissatisfied with the level and character of public schools in the district of residence are more likely to vote for increased school taxes if the revenue limit per student in that district can be transferred to another district of their choosing. Many of these parents now have

an incentive to vote for low spending in order to afford the costs of private schools. The suggested changes in the interdistrict transfer provisions would probably induce some of the students who attend private schools to return to the public school system, often in some district other than the district of residence.

The effects of the suggested changes in the interdistrict transfer provisions should be evaluated both separately and in combination with the suggested changes in school district organization. Each set of suggested changes, we believe, would be valuable, but they would be more valuable in combination. The value of changing the interdistrict attendance provisions would depend, in part, on the physical distance from a family residence to schools in other districts. At present, the area of many districts is so large as to make the costs of transportation to schools in another district prohibitive for many families. If the provisions for school district organization are not changed, the suggested changes in the interdistrict attendance provisions would most benefit those students living in small-area districts or near the boundaries of large districts, and only a small percentage of students would probably take advantage of the opportunity for interdistrict attendance. By itself, this can be valuable, as students living near the boundaries of large districts, may be among those most dissatisfied with their present schools. In addition, if communities are permitted greater freedom to organize a separate school system, the physical distance to schools in another district would be reduced, and one should expect either more responsive schools and/or a substantially larger number of interdistrict transfers.

A concern will surely be raised that increased interdistrict transfers would complicate the duties of school administrators in planning budgets, hiring teachers, and providing adequate school facilities. Such problems should be recognized and may occur, but they seem no greater than those managed routinely by the managers of any major private firm. In any case, we contend that the effects of the Education Code should be evaluated, not in terms of the interests of school administrators, but in terms of the interests of California students and their parents. On this basis, we believe our suggestions for changing the Education Code deserve serious attention.

APPENDIX

The dependent and explanatory variables of the model are the outputs and inputs of each district's educational system. The cognitive outputs, represented by median scores of each district, are the results of "standardized" tests that are published by major companies and used nation-wide. The tests are administered throughout California to sixth and twelfth graders, and have been adopted by the State Board of Education as measures of educational output.

The Comprehensive Tests of Basic Skills, Form Q, Level 2, were administered to sixth graders.

-The Reading Test includes two parts, Reading Vocabulary and Reading Comprehension. The former consists of 40 multiple-choice questions wherein the student's understanding of underlined words in sentences is tested. 45 questions on reading comprehension test the student's ability to read and understand the ideas and conclusions of several articles, stories, poems, and letters. Only correct answers are counted; there are 85 possible points.

-The sixth grade Arithmetic Test consists of three parts. The first, Arithmetic Computation, tests the four fundamental processes of addition, subtraction, multiplication, and division (48 questions, each of equal weight). The second Arithmetic Concepts (30 items) measures the student's ability to go beyond the four fundamental processes in understanding various numerical concepts and interrelationships. The final section, Arithmetic Applications, consists of 20 problem-solving ques-

tions. The Arithmetic Test has 98 possible points; each score is a summation of the total correct answers.

The Iowa Tests of Educational Development, Form X-4, Class Period Version, were administered to twelfth graders.

-The Reading Test ("Ability to Interpret Reading Materials in the Social Studies") measures the student's ability to read and interpret (comprehend implications and interrelationships of ideas) selections dealing with geography, sociology, social problems, political science, and economics from textbooks, periodicals, and newspapers. There are 53 possible points.

-The twelfth grade Arithmetic Test ("Ability to Do Quantitative Thinking") consists of 33 problems testing the student's ability to employ computational skills in interpreting formulas, graphs, charts, and tables as a means to solve practical problems in the natural sciences and the social sciences. Again, only correct answers are counted.

The structural variables in our model are median district IQ for each grade (I), current expenditures per student (X), and average daily attendance, grades 1 - 12 (N).

-The Median IQ scores are based upon the "Lodge-Thorndike Intelligence Tests - Verbal Battery." The verbal battery, consisting of five separate tests (vocabulary test, sentence completion, arithmetic reasoning, verbal classification, and verbal analogy), is designed to measure abstract intelligence, defined as "the ability to work with ideas and the relationships among ideas."

-Total current expenditures includes all budget classifications (100 through 800 excluding 500, which is transportation costs) that have direct application to the operation and maintenance of the instrumental program.

-Average daily attendance, grades 1-12, is based on annual attendance forms (elementary districts J-18A; grades 7 and 8, J-19EA; and grades 9-12, J-9A); ADA does not, however, include special or adult classes, or summer sessions, opportunity or continuation classes.

The instrumental variables in our model are Index of Family Poverty (P), per cent minority students (M), assessed valuation per unit of average daily attendance (A), and average daily attendance, grades 1 - 12 (N).

-The Index of Family Poverty is quotient of total ESEA Title I funds entitled to a district divided by the district's average daily attendance. The amount of entitlement is used rather than expenditures since (1) some districts do not submit ESEA Title I projects, (2) others submit projects for less than their entitlements, and (3) some districts spend less than the amount approved on the project.

-Per cent minority includes only American Indian, Negro, and Spanish-surnamed, as defined by the State Board of Education (Orientals were not included in this definition of minorities).

-The assessed valuation per student is derived from sources common to all California school districts; the ADA used in the calculations does not include attendance to summer schools, continuation schools, or adult classes.

The ordinary least squares technique was used to separately test several other educational variables with respect to school district size.

-The Rate of Staff Turnover is a product of the State Report of Teacher Turnover as determined by the percentage of either the teachers added to, or deleted from (whichever is smallest) a school district, divided by the total number of employed teachers in the district.

-The Median Teacher Salary is determined by the frequency distribution of salaries among $300 intervals from minimum to maximum salaries paid to teachers in a district.

-Average Class Size is based on the average class size in grades 1-3 as reported to the Bureau of School Apportionments and Reports.

-Certificated Nonteaching Personnel per 100 full-time equivalent teachers, as recorded by the Bureau of Administrative Research and District Organization, is based upon the total number of pupil services and administrative employees divided by the total number of full-time teachers.

-Finally, Pupil Mobility is derived from dividing the average daily attendance of the district by the district's total annual enrollment. Since total annual enrollment includes each time a student enrolls in a new school, the transitory measurement reflects both interdistrict and in intradistrict mobility.

All of the data except total current expenditures is based upon data in the Report on the California State Testing Program, 1970-71; Profiles of School District Performance, prepared by the Office of Program Evaluation

in the State Department of Education. It is felt that the Report's District Variable "Expenditures for instruction per unit of ADA" did not properly reflect total expenditures for education. Instead, our total current expenditures data are based upon the California School Districts Financial Analysis, 1970-71 (Number 2, December, 1971), prepared by the California Agency for Research in Education.

FOOTNOTES

1. See Richard Wagner / 34 / for a general development of the relation of managerial performance to the electoral process.

2. See James Buchanan / 9 / for a general development of the governmental supply of semi-private and private services.

3. See Charles Tiebout / 31 / for the seminal article on the political consequences of moving.

4. See James Buchanan and Charles Goetz / 10 /.

5. See / 1 /, pp. 27, 50.

6. This "decentralization theorem" is developed in Oates / 25 /, pp. 54-63.

7. The proximate unit, of course, could contract with another unit to produce these services, in order to take advantage of any economies of scale. This practice is widespread among the smaller new cities in the Los Angeles area.

8. This discussion is developed from the following major analytic contributions on the size and spacing of local governments: Roland Pennock / 26 /, Charles Tiebout / 32 /, Alan Williams / 35 /, Yoram Barzel / 4 /, Gordon Tullock / 33 /, Wallace Oates / 25 /, and Nicolaus Tideman / 30 /.

9. Richard Wagner / 34 / concludes "...metropolitan consolidation should not only increase the average cost of public output, but should also reduce the mortality rate among public managers." Another interesting conclusion bears on the choice between independent and board-governed special districts and on the procedures for selecting LAFCO and CCSDO officials: "...technical efficiency in a system of metropolitan federalism seems likely to be greater with independent management...than with interlocking management...." The present California Codes, unfortunately, encourage interlocking management of county and regional bodies.

10. George Break / 8 /, p. 175.

11. Nicolaus Tideman / 30 /, p. 331.

12. Nicolaus Tideman / 30 /, p. 336. This criterion had also been developed earlier by Tiebout / 32 / in a less rigorous way.

13. Werner Hirsch / 20 /, p. 240.

14. Theodore Bergstrom and Robert Goodman [5].

15. Richard T. Legates, California Local Agency Formation Commissions. Institute of Governmental Studies, University of California, Berkeley, 1970, p. 49.

16. See California Streets and Highways Code, Section 5343.

17. See California Streets and Highways Code, Section 5368.

18. See Eric Hanushek [17] for some contrary evidence.

19. Thomas James and Henry Levin [21], pp. 253-254.

20. Herbert Kiesling [23], p. 359.

21. For any given independent variable, where

$$\frac{S}{S^*-S} = a + bX + \ldots,$$

the first derivative of S with respect to X is

$$\frac{\partial S}{\partial X} = bS^* (1 + a + bX + \ldots)^{-2}$$

and the second derivative is

$$\frac{\partial^2 S}{\partial X^2} = -2b^2 S^* (1 + a + bX + \ldots)^{-3}.$$

An increase of X, thus, (if $b > 0$) will increase the test score at a decreasing rate.

22. Joseph Kershaw and Roland McKean [22], p. 9.

23. Thomas James and Henry Levin [21], p. 253.

24. See California Education Code, Section 3100.

25. See California Education Code, Section 2031.

26. Pending AB1021 would delete this provision excluding seventh and eighth graders in unified districts. It has passed the Assembly and the Senate Education Committee; and will soon be passed by the Senate.

27. See California Education Code, Section 10805.

28. See California Education Code, Section 10808.

29. Formerly part of Section 10801 of the California Education Code.

30. Mickey Levy considers that such a State fund is an <u>essential</u> complement of permitting parental augmentation.

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