A Statistical Analysis of the School Finance Decisions: On Winning Battles and Losing Wars

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The American judiciary is at the threshold of dismantling the educational finance systems of almost every state. Recent federal and state court decisions have condemned five such systems as violations of the equal protection guarantees in the United States Constitution.¹ Their common theory has been that reliance on property taxes produces substantial disparities in local educational expenditures and that such funding “invidiously discriminates against the poor because it makes the quality of a child’s education a function of the wealth of his parents and neighbors.”² Suits presently at various stages of the ju-


dicial process could overturn the systems of thirty-one states.¹ Final resolution of these cases will await the Supreme Court’s consideration, this term, of *San Antonio Independent School District v. Rodriguez*.² But regardless of that case’s outcome, the courts will almost certainly remand the task of restructuring educational finance to the legislatures rather than assuming it themselves.

This Note will examine the school finance decisions with an eye toward this restructuring. It will be argued that the three critical premises on which these decisions are based—premises concerning individual wealth, district property values, and local educational expenditures—are fraught with ambiguities in their definition of key terms. As a result of these ambiguities, the decisions leave the legislatures latitude to revise educational finance in ways which would not help—and in fact could hurt—the poor.

All of the decisions to date contain the following premises:

(i) The individual wealth of the residents of a school district is directly related to the assessed value of the property in that district;

(ii) Assessed property value is directly related, because of reliance on property taxes, to local educational expenditure levels;

(iii) Local educational expenditures are directly related to the quality of public education.

The legal argument contends that the above chain relationship between individual wealth and quality education is constitutionally impermissible.

Although there has been rather extensive commentary on Premise Three,⁵ there has been very little serious analysis of Premises One and Two. Therefore, while the Note will discuss the jurisprudential problems of all three Premises in Part I, it will focus, in Part II, on Premises One and Two using Connecticut as a model. Finally, in Part III, it will analyze a number of fiscal alternatives that could be employed in revising educational finance.

1. See pp. 1315-16, n.55-57 infra.
I. The Logic and Limitations of the School Finance Decisions

A. Premise One: Individual Wealth is Related to District Wealth

Premise One, involving proof of a relationship between individual and district wealth, serves to identify the injured class as the children of the poor. Although such identification is essential (as will be argued here) from both a legal and fiscal standpoint, the school finance decisions have thus far largely ignored its significance. In *Serrano v. Priest* the state did contend that the taxable wealth of a school district, as measured by assessed property value per pupil, was not necessarily related to the individual wealth of its residents. The California Supreme Court could have rejected this contention on the grounds that the state's demurrer necessarily conceded plaintiffs' factual allegations. But the court went further, stating that discrimination on the basis of district wealth, without any tie to individual wealth, was invalid per se. The court cited no authority for this conclusion, but rather intimated that the arbitrariness of the system injured pupils in all districts except the wealthiest in the state. In *Van Dusartz v. Hatfield*, the district court similarly did not feel compelled to find any relationship between individual and district wealth. Two other decisions, *Hollins v. Shofstall* and *Robinson v. Cahill*, are silent on the issue.

Only one court to date has clearly identified the children of the

6. "Per pupil" measurements in *Serrano* were in terms of average daily attendance (ADA), the ratio of total students present each day divided by the number of school days in the school year. 5 Cal. 3d 584, 592, 487 P.2d 1241, 1246, 96 Cal. Rptr. 601, 605, n.4 (1971).

7. Throughout this Note we shall define individual wealth as individual income. It might be argued that accumulations of wealth—as is common among the elderly—should be considered. But this is seldom done in statistical analysis both because it is difficult to compile figures on wealth accumulations and as it is typically assumed that such accumulations—in any given sample—follow income closely.

8. The state originally filed general demurrers to the complaint. The trial court sustained the demurrers and, upon plaintiffs' failure to amend, entered an order of dismissal. The court of appeals affirmed this order. 10 Cal. App. 3d 1110, 89 Cal. Rptr. 345 (1970).


10. *Id.* at 601, 487 P.2d at 1252-53, 96 Cal. Rptr. at 612-13. Plaintiff school children represented "all public school pupils in California, except children in that school district, the identity of which is presently unknown, which school district affords the greatest educational opportunity of all school districts within California." *Id.* at 589, 487 P.2d at 1244, 96 Cal. Rptr. at 604 (1971).


poor as the victims of traditional school finance. In San Antonio Independent School District v. Rodriguez, the three-judge federal panel concluded from rather slight evidence that there was a relationship between property values and median family income.14

In Private Wealth and Public Education, the Bible of school equalization, Professors Coons, Clune, and Sugarman attempt to justify such minimal attention to individual wealth by contending that all children in “poor” districts, regardless of parental wealth, are injured when less is spent on their education than is expended in “wealthy” districts.15 To the extent that district wealth does dictate educational quality,16 and to the extent that non-poor children in poor districts do not defect to private schools, this argument may have some force. But it may nevertheless prove vulnerable when evaluated in terms of the legal and policy considerations in the school finance decisions.

1. The Legal Significance of Premise One

For the purpose of legal argument, the pupils in low-wealth school districts may be conceptualized as two separate groups. The first, poor children in poor districts, can claim that because of their individual poverty, they are deprived of a fundamental right, equal educational opportunity. Although the legal theory supporting this claim is not conclusive, it is accepted by many commentators17 and a grow-

14. 337 F. Supp. 280, 282 (W.D. Tex. 1971), prob. juris. noted, 92 S. Ct. 2413 (1972). Plaintiffs showed the following relationship between district and individual wealth for the sample of 110 districts surveyed:

<table>
<thead>
<tr>
<th>Market Value of Taxable Property Per Pupil</th>
<th>Median Family Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property (1960 Census)</td>
<td></td>
</tr>
<tr>
<td>Above $100,000 (10 districts)</td>
<td>$5000</td>
</tr>
<tr>
<td>$100,000-$150,000 (25 districts)</td>
<td>4425</td>
</tr>
<tr>
<td>$50,000-$30,000 (30 districts)</td>
<td>4900</td>
</tr>
<tr>
<td>$30,000-$10,000 (40 districts)</td>
<td>5050</td>
</tr>
<tr>
<td>Below $10,000 (4 districts)</td>
<td>3325</td>
</tr>
</tbody>
</table>

Affidavit of Joel S. Berke at 6.

A substudy of the six districts in Bexar County also indicated a direct relationship between the wealth factors (Berke Affidavit at 25).

15. J. COONS, W. CLUNE, S. SUGARMAN, PRIVATE WEALTH AND PUBLIC EDUCATION 2, 152-54 (1970) [hereinafter cited as PRIVATE WEALTH; references to Professor Coons in the text include collaborators Clune and Sugarman, except where otherwise indicated].


ing number of courts. But the second group—non-poor children in poor districts—cannot base their legal claim on personal poverty; rather they must complain of the sheer irrationality of a system that allocates education on the basis of property values. Such a claim is unrelated to wealth analysis, except insofar as district wealth is viewed as an arbitrary classification. The argument would be similar and no less tenable should the state make educational expenditures dependent on some other irrelevant factor, such as the number of telephone poles in the district.

Serrano and its progeny ignore the distinction between these two claims. Instead, the decisions attack discrimination on the basis of district wealth, a discrimination affecting both classes of children. While such analysis is structurally sound, it may be legally deficient. Every case cited in Serrano to support the contention that discrimination on the basis of district wealth is "suspect" deals with individual poverty. These cases, invalidating certain criminal procedures and
suffrage restrictions, 23 concern the inability of poor individuals to pay for essential public services or benefits. The Serrano court simply had no authority to support the proposition that the poverty of a collective unit triggers "suspect classification" analysis. 24

This is not to say that it is impossible to argue that the non-poor child should receive judicial protection. 25 First, as noted above, the non-poor child could claim that he is injured as the system irrationally diverts educational resources from his district. Or he might argue that discriminations on the basis of collective wealth should be constitutionally suspect. The plaintiffs here have to convince the court that equal protection analysis should be extended to this more subtle form of discrimination. 26 Finally, Coons has suggested that one could consider all children—regardless of parental wealth—as poverty stricken. 27 Although both the factual and legal assumptions of this last approach are clearly open to challenge, it does have the advantage of making the "individual poverty" decisions applicable. Judicial examination of these theories would be valuable, but such analysis is unlikely as long as the courts blur the legally distinct concepts of individual and district wealth.

2. The Fiscal Implications of Premise One

Beyond these inadequacies in legal argument, the failure of Serrano to require a factual demonstration of Premise One may also have serious fiscal implications. A high concentration of commercial or corpus applications); Burns v. Ohio, 360 U.S. 252 (1959) (requiring the payment of filing fees as condition precedent to criminal appeal); Griffin v. Illinois, 351 U.S. 12 (1956) (conditioning the availability of trial transcripts on ability to pay); In re Antazo, 3 Cal. 3d 100, 473 P.2d 999, 89 Cal. Rptr. 255 (1970) (imprisoning convicted indigent defendant solely because of an inability to pay a fine).


26. Although the poverty cases have thus far been based on personal inability to pay, nothing in their legal theory would prevent their extension to collective poverty, provided that the collective unit is not a political subdivision. Two recent Supreme Court decisions, however, suggest that the Court may be unwilling to permit such an extension. Cf. p. 1329, n.79-80 infra.

27. PRIVATE WEALTH 152-53.
industrial property in a district with many poor residents may skew
the relationship between district and individual wealth. Four com-
binations are obviously possible: (i) districts where both property
value and family income are high; (ii) districts where both are low;
(iii) districts where property value is high but income is low; and
(iv) districts where property value is low but income is high. Ind-
ividual wealth and district wealth do not correlate in the last two
situations. A policy shifting funds to low-wealth districts, while re-
warding those in situation (ii), will needlessly aid situation (iv)
residents, and yet bypass the poor in situation (iii) districts.28 Thus
a policy favoring low-wealth districts could shift resources toward the
"rich," away from the "poor."

Coons, Clune, and Sugarman defend such a policy by defining away
this problem of diverting resources from the poor. They insist that
the non-poor, as well as the poor, are victimized when their school
districts spend less than others and urge that both groups deserve
judicial protection.29 They avoid the problem of the high-property-
value/low-family-income district by maintaining that every district
except the wealthiest in a state is disadvantaged by traditional financ-
ing systems.30 If educational resources were unlimited this contention
might be valid. But in a world of scarce resources, it must be rejected:
Dollars spent on the non-poor simply cannot be spent on the poor.

Moreover, the failure to distinguish between poor and non-poor
children ignores the impact of private education. In the extreme,
non-poor families can remove their children from the public schools,
purchasing an entire education from private sources. But perhaps
more importantly, non-poor families can supplement the public edu-
cation their children receive. Although it may be difficult to define

28. Robinson noted that the location of commercial and industrial property may
have a significant impact upon educational expenditures. Noting a trend of commercial
migration to the suburbs, the court stated:

Wealthy suburbs are able to attract industry from central cities by preferential
tax rates. The erosion of the central city tax base makes it more difficult for these
cities to raise revenues for school and municipal purposes. . . . Although the
statewide average of equalized valuations per pupil rose from $30,112 in 1960 to
$41,026 in 1971, some central cities suffered a decline in valuations per pupil in
absolute or relative terms, or both.


29. See p. 1306, n.15.

30. PRIVATE WEALTH 154. But cf. Van Dusartz v. Hatfield, where plaintiffs represented
children residing in "relatively" poor districts. The district court indicated that this
definition may lack legal significance: "Whether 'relative' poverty includes every district
poorer than that one district richest in assessed valuation per pupil need not now be
determined, nor would this appear to have great practical significance in the application
of the general principle." 334 F. Supp. at 872, n.2.
precisely, there is a point beyond which inputs are not essential to minimal education, yet are still important to child development.31 A policy that directs funds toward districts with non-poor populations merely makes the purchaser of these important inputs a public agent rather than a private one. In effect, the policy subsidizes purchases that would otherwise be made through private transactions. Again, in a world of scarce public resources, the consequence of such unnecessary subsidization is a lessening of the effect education can have on the children of the poor.

B. Premise Two: District Wealth is Related to Educational Expenditure Levels

Although some commentators have minimized the significance of Premises One and Three, all of them agree on the necessity of proving a relationship between district wealth and educational expenditures in a challenge to the traditional structure of school finance.32 Premise Two is the core of the factual argument, as it establishes that variations in educational expenditures are caused by over-reliance on local property taxes.

There are a number of methods for proving this relationship.33 Regrettably, the decisions thus far have accepted the most superficial analysis and thus have provided little guidance for further study. From a procedural standpoint, this may be understandable: Serrano, Van Dusartz, and Hollins were argued on motions testing the sufficiency

31. While the line distinguishing essential and nonessential inputs is difficult to draw, it is one that voters, legislators, and courts are frequently obliged to make. In Serrano, the state urged the court to adopt the reasoning of Briggs v. Kerrigan, which held that a policy of providing federally subsidized lunches only at schools with kitchen facilities does not violate the equal protection clause. (Briggs v. Kerrigan, 307 F. Supp. 295 (D. Mass. 1969), aff'd 431 F.2d 967 (1st Cir. 1970).) Although the California Supreme Court disposed of defendant's analogy on the grounds that the random availability of kitchens was unlike the patterned system of discrimination fostered by California's financing scheme, it added: “Furthermore, the nature of the right involved in the two cases is very different. The instant action concerns the right to an education, which we have determined to be fundamental... Availability of an inexpensive school lunch can hardly be considered of such constitutional significance.” 5 Cal. 3d at 599, 487 P.2d at 1291, 96 Cal. Rptr. at 611, n.13 (1971).


32. See, e.g., Model Complaint in Hearings Before the Select Comm. on Equal Educational Opportunity of the United States Senate, 92d Cong., 1st Sess., pt. 10D-2 at 8281 [hereinafter cited as Hearings].

33. Coons, Clune and Sugarman use a variety of techniques (e.g., bar graphs and rank order correlations) to establish Premise Two. PRIVATE WEALTH 62-96, 127-48. All references in the text to district wealth and educational expenditures are made on a per pupil basis.
of the complaints. Thus, the relationship between district wealth and expenditures—alleged in each complaint—could have been accepted as proven. But the necessity for proof at eventual trial remains and thus the casual attitude taken by these courts may prove fatal.

There was, in fact, evidence before the Serrano court that the correlation between district wealth and expenditures in California's 1076 school districts was +.791.34 Yet the court ignored this relatively significant statistic in its opinion. Rather it took judicial notice of the truism that local revenue is determined by tax base and rate,35 and concluded that "wide differentials remain in the revenue available to individual districts and, consequently, in the level of educational expenditures."36 However, the court made no showing of any causal connection between district wealth and expenditures. Instead, it relied on a comparison of three districts—Baldwin Park, Pasadena, and Beverly Hills: Noting that annual per pupil expenditures for the three in 1968-1969 were $577, $840 and $1,231, respectively, the court assumed that the source of these disparities was the 1 to 4 or 12 variation in district wealth.37 Such analysis is deficient in two respects. First, the comparison says nothing about the relationship between district wealth and expenditures in the 1073 other districts. Second, such analysis ignores the other major variable determining expenditure levels, the willingness of residents to tax themselves.

1. The Assumption of a Continuum of Predictable Behavior

Serrano's reliance on tax base, to the exclusion of all other factors, seems to be founded on a belief that poor districts, regardless of their tax sacrifice, are unable to produce expenditure levels equal to those of wealthy districts.38 Again, the court relied on a comparison of the state's wealthiest and poorest districts.39 But proof that an extremely poor district cannot raise as much revenue as an extremely wealthy

34. Brief for Stephen Sugarman, The Urban Coalition, The National Committee for the Support of the Public Schools and John Coons as Amicus Curiae at 29, Serrano v. Priest, 5 Cal. 3d 584, 487 P.2d 1241, 96 Cal. Rptr. 601 (1971). For the significance of this statistic see n.112 infra.
35. 5 Cal. 3d at 592, 487 P.2d at 1246, 96 Cal. Rptr. at 608 (1971).
36. 5 Cal. 3d at 594, 487 P.2d at 1247, 96 Cal. Rptr. at 609 (1971) (emphasis added).
37. 5 Cal. 3d at 594, 487 P.2d at 1248, 96 Cal. Rptr. at 608 (1971).
38. 5 Cal. 3d at 598, 487 P.2d at 1250, 96 Cal. Rptr. at 610 (1971). The inability of low-wealth districts to raise revenues equivalent to the amounts collected in rich districts was the reason used by the court to refute the defense that the financing system represents a compelling state interest. The court argued that the goal of local control is illusory in a district incapable of raising funds necessary to support a high quality educational program. 5 Cal. 3d at 611, 487 P.2d at 1260, 96 Cal. Rptr. at 620 (1971).
39. 5 Cal. 3d at 600, 487 P.2d at 1252, 96 Cal. Rptr. at 612, n.15 (1971).
one does not refute the significance of tax rates for the vast number of districts in between. Consider a state with five districts with the following characteristics:

<table>
<thead>
<tr>
<th>District</th>
<th>Valuation Per Pupil</th>
<th>Tax Rate</th>
<th>Tax Expenditure Per Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>District A</td>
<td>$150,000</td>
<td>2%</td>
<td>$3,000</td>
</tr>
<tr>
<td>District B</td>
<td>75,000</td>
<td>3%</td>
<td>2,250</td>
</tr>
<tr>
<td>District C</td>
<td>60,000</td>
<td>2%</td>
<td>1,200</td>
</tr>
<tr>
<td>District D</td>
<td>50,000</td>
<td>3%</td>
<td>1,500</td>
</tr>
<tr>
<td>District E</td>
<td>10,000</td>
<td>6%</td>
<td>600</td>
</tr>
</tbody>
</table>

A comparison of Districts A and E supports the *Serrano* line of reasoning: the poorest district would be required to tax at a wholly confiscatory rate (30%) in order to approach the amounts expended by the wealthiest district. But such analysis fails to disclose that as among Districts B, C, and D, it is tax rate, not tax base, that largely determines the amount available for education.\(^{40}\)

In *Rodriguez*, the district court also ignored significant statistical relationships, limiting its discussion to a similar "richest-to-poorest" comparison.\(^{41}\) As *Rodriguez*, unlike *Serrano*, was a hearing on the merits, its cursory treatment of Premise Two clearly suggests that school finance plaintiffs may satisfy their burden of proof by the most simplistic comparisons between the wealthiest and poorest districts in a state. But *Robinson*, also a hearing on the merits,\(^{42}\) exemplifies a more extensive approach. The court constructed an appendix of data

\(^{40}\) In actuality, this was apparently not the case in California. Amicus briefs indicated that there was a negative correlation of \(-0.562\) between district wealth and educational tax rates for all districts in 1968-69. (Brief for Stephen Sugarman, The Urban Coalition, The National Committee for the Support of the Public Schools and John Coons as Amici Curiae at 20, *Serrano v. Priest*, 5 Cal. 3d 584, 487 P.2d 1241, 96 Cal. Rptr. 601 (1971). When combined with the strong positive correlation between wealth and expenditures, this statistic further indicates that poor districts, despite high tax rates, must spend less on education. But the condemning force of such analysis is lost when the same conclusion is based on a simplistic comparison of the extremes within a state.

\(^{41}\) In convincing tabular and graphic form, the plaintiffs demonstrated a close relationship between district wealth and educational expenditures for the entire range of a 110 district survey. (Berke Affidavit at 6-7, 13.) However, in its opinion, the court limited its examination to the state's ten wealthiest and four poorest districts, and the wealthiest in San Antonio with that city's poorest. (337 F. Supp. at 282.) Again, this is not to suggest that the court's analysis was factually invalid; only that its tests are so vague as to ignore more subtle influences which may lead to undesired policy results.

\(^{42}\) 118 N.J. Super. 223, 287 A.2d 187 (1972). Technically, the case was argued on plaintiffs' motion for summary judgment. However, to insure a complete record for review and to permit opportunity for disputing factual assertions, the court conducted a trial on the merits.
from government documents for selected districts in each New Jersey county, information it utilized in a full discussion of educational finance. Although the Robinson court arrived at essentially the same conclusions as those in Serrano and Rodriguez, the decision demonstrates that meaningful analysis of Premise Two is possible with a minimum of statistical research.

2. The Failure to Consider Other Factors

The failure to fully examine the relationship between district wealth and expenditures may be due in part to the past assumption of such a relationship by analysts of educational finance. Nevertheless, the causal connection between the two factors is neither absolute nor automatic. In addition to the total property value of a district, educational expenditures may be influenced by at least four other factors:

- Mix of Property. Residential taxpayers in a commerce-laden district have a clear incentive to increase tax rates: Such taxpayers will pay but a fraction of total taxes, and as beneficiaries of municipal services, will receive far more than they contribute. With this incentive, they may muster sufficient community support to outmaneuver or outvote commercial property owners.

- Taxpayer Perspectives. The composition of the taxpaying public may affect the level of educational expenditures. A district containing a large proportion of families with school-age children can be expected to support a higher tax rate than one composed of taxpayers who do not need the public schools. Similarly, the existence of a high proportion of taxpayers whose religious or social views require that their children attend parochial or private schools should have a depressant

43. 118 N.J. Super. at 237-38, 287 A.2d at 194 (1972). A graph demonstrating this conclusion was also developed by the court. Id. at 239, 287 A.2d at 195.
44. Coons, Clune and Sugarman comment that: "The analysis of complex state systems in terms of wealth discrimination can be made convincing without esoteric economics or statistics." Private Wealth 148. They maintain that Premise Two can be documented by examining public records on (1) assessed valuation, (2) tax rates, and (3) pupil populations for the districts in a state. Brief of John Coons, William Clune and Stephen Sugarman as Amici Curiae (brief re jurisdictional statement of appellants) at 13, McNinis v. Shapiro, 394 U.S. 322 (1969).
effect on tax rates. Other factors such as individual income, prior education, or unemployment also may influence educational tax rate.47

The Institutional Framework. The nature of the local decision-making process may affect the level of educational expenditures. A board of education that submits its budget to a separate political institution (e.g., a city council) may produce a different level of expenditures than one similarly situated which must appeal directly to the public. Tax rate limitations in state law may decree a ceiling on rate decisions.48 Conversely, prior expenditure levels tend to set a floor below which a budget will not fall.49 Finally, many significant fiscal decisions are negotiable: A strong teachers' union may have an inflationary effect; a strong taxpayers' group, a depressant one.

Non-educational needs. Although the courts seem prepared to distinguish education from other public services,60 the taxpayer may not do so: He is likely to be more concerned with his total tax burden than with the specific rate for education. Thus, schools must compete with other public services for a finite tax dollar. Obviously, their bargaining position is weakest where demand for non-educational services is greatest.

Such demand, usually termed "municipal overburden," is concentrated in urban school districts, where non-educational needs are typically greatest.51 Such districts may be above the state average for

47. See, e.g., Davis, Quality and Inequality: Some Economic Issues Related to the Choice of Educational Policy, in The Quality of Inequality: Urban and Suburban Public Schools 91-95 (C. Daly ed. 1968); H. JAMES, J. THOMAS & H. DYCK, WEALTH EXPENDITURE AND DECISION-MAKING FOR EDUCATION 73-98 (1983).

48. Statutory tax rate limitations are not always inflexible. In California, a majority of the district's voters may approve a "tax override" (Cal. Educ. Code § 20803-20801 (West. 1969)); in fact most districts do vote to surpass the statutory ceiling. Serrano v. Priest, 5 Cal. 3d 584, 592, 487 P.2d 1241, 1246, 96 Cal. Rptr. 601, 606 (1971). In contrast, Florida's tax rate ceilings are far more difficult to waive. A "millage rollback statute" (F.S.A. § 236.251) provides that overtaxing more than ten mills will forfeit participation in the state's minimum foundation program. A challenge to the constitutionality of the Florida statute, on the ground that it discriminates against districts with low property values, lingered in the federal courts and was eventually withdrawn by its plaintiffs. Hargrave v. McKinney, 413 F.2d 320 (5th Cir. 1969), on remand sub nom. Hargrave v. Kirk, 313 F. Supp. 944 (M.D. Fla. 1970), vacated sub nom. Askew v. Hargrave, 401 U.S. 476 (1971). But the Florida legislature has repealed the statute, effective July 1, 1974, possibly in part as a result of the suit. FLORIDA LAWS 1970, cit., 70-94, 39.

49. Literature on the budgetary phenomenon of "incrementalism" is surveyed in I. SHARKANSKY, SPENDING IN THE AMERICAN STATES 13-17 (1968).

50. See 5 Cal. 3d at 614, 487 P.2d at 1262-63, 96 Cal. Rptr. at 622-23. See also Van Dusartz v. Hatfield, 254 F. Supp. at 875, n.8; PRIVATE WEALTH 414-19. But cf. Hawkins v. Town of Shaw, 437 F.2d 1260 (5th Cir. 1971), aff'd on rehearing en banc (1972) (racial discrimination in the provision of street paving, lighting, water mains, fire hydrants, and sanitary sewers by a municipality is prohibited by the equal protection clause).

51. For all but one of the thirty-seven largest standard metropolitan statistical areas in the United States in 1967, per capita non-educational expenditures were greater in the central city than in the outlying suburbs. 2 Advisory Commission on Intergovernmental Relations, Fiscal Balance in the American Federal System: Metropolitan Fiscal Disparities 105 (1967).
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district wealth as a result of their high concentrations of commercial and industrial property. But they may be forced to spend less on education than “poorer” suburbs with lesser “overburden.” A policy that equalizes merely on the basis of district wealth would ignore this expenditure pattern and transfer resources from the urban to residential district.

C. Premise Three: Educational Expenditures Are Related to the Quality of Education

Unless Serrano and its progeny are to be interpreted merely as taxpayer suits, a third link, relating expenditure levels to the quality of education, is essential. Premise Three thus defines the injustice of traditional school finance as a denial of equal educational opportunity, not a mere difference in local tax burdens.

The relationship between expenditures and educational quality, although assumed by many, is nevertheless the subject of considerable controversy. Opponents of Serrano can cite the conclusion of the Coleman Report that academic performance is primarily determined by factors other than educational expenditures. While this finding

53. Of the school finance cases, only Robinson has explicitly recognized the factor of municipal overburden, 118 N.J. Super. at 273, 287 A.2d at 213 (1972).
54. The taxpayer’s argument is that it is unfair to require residents of poor districts to bear a higher tax burden than residents of wealthy districts in purchasing equal educations. Three of the school finance decisions have recognized this taxpayer complaint. In Serrano, the court said merely that the parent-taxpayers had a valid cause of action. 5 Cal. 3d at 619, 487 P.2d at 1265, 96 Cal. Rptr. at 625.
55. Hollins, on the other hand, focused on taxpayer inequities, arguing: Arizona’s school financing system imposes grossly disparate tax burdens on taxpayers in the different school districts. Taxpayers in a school district poor in taxable wealth are forced to make a substantially greater tax effort to provide substantially less monies for the operation and maintenance of their schools in comparison with what is required of taxpayers in a district rich in taxable wealth. No. C-253652 (Super. Ct. Ariz., Jan. 13, 1972) at 5-6 (slip).
56. Robinson adopted a middle position. The court construed the Education Clause of the New Jersey Constitution (Art. VIII, § 4, ¶ 1) to establish education as a statewide, rather than local, purpose. Relying in part upon a second constitutional provision and in part upon history, the court found uniform tax rates are mandated. 118 N.J. Super. at 276-80, 287 A.2d at 215-16. The court thus imposed taxpayer equity as a standard to measure the equalized nature of a financing scheme.
57. The primary problem with the taxpayer argument (some pay more and yet receive inferior service) is that it does not rely upon the unique position of education. The same argument can be made with regard to any public service financed by property taxes. Such a view would invite the judiciary to obliterate every aspect of local fiscal control. Premise Three avoids this difficulty by relating differential expenditures to the quality of only one governmental function, education.
58. See, e.g., the statement made by Senator Walter F. Mondale: “I don’t know how it can be said that somehow, unlike most other things, money has no relationship to [educational] output.” Hearings 6752.
has spurred extensive criticism and a number of counter-studies, it is unlikely that educators will arrive at a clear verdict on the cost-quality issue before the Supreme Court must deal with Premise Three in *Rodriguez*. Nor will that Court be greatly aided by discussion of the question in the decisions to date—opinions which have largely ignored or assumed away the problems inherent in the cost-quality debate.

1. *Premise Three in the School Equalization Decisions*

*Serrano* (and its progeny) recognizes the necessity for proof at trial of the alleged relationship between expenditures and educational quality. But the cases cited by *Serrano* in support of this proposition indicate that the burden of proof may be satisfied by use of what is in effect an irrebuttable presumption, or a mere showing that increased expenditures produce increased educational inputs of all kinds (without relating those inputs to the quality of education). Among

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58. 5 Cal. 3d at 599, 487 P.2d at 1253, 96 Cal. Rptr. at 611, n.14 (1971).

59. *Serrano* "comes close to saying," according to Coons, Clune and Sugarman, that the court should assume a positive correlation in the absence of proof to the contrary. Coons, Clune & Sugarman, *A First Appraisal of Serrano*, 2 YALE REV. LAW & SOC. ACTION 111, 114 (1972). The Model Complaint, drafted in part by Professor Coons, adopts a similarly casual view towards Premise Three. The document measures injury in terms of variations in spending, rather than the quality of education.

Two of the cases relied on by the *Serrano* court suggest that plaintiffs can satisfy their burden at trial by use of such an irrebuttable presumption. In *McIntyre v. Shapiro*, the court declared: "Presumably, students receiving a $1000 education are better educated than those acquiring a $600 schooling." 293 F. Supp. 327, 331. The *Serrano* court endorsed this contention. 5 Cal. 3d at 601, 487 P.2d at 1253, 96 Cal. Rptr. at 613, n.16 (1971). *Dicta* in *Hargrave v. Kirk* suggests that the court considered proof of the relationship between expenditures and educational quality, but the authorities cited are merely statements of expenditure differentials. The district court said that:

"Turning now to the defenses asserted, it may be that in the abstract "the difference in dollars available does not necessarily produce a difference in the quality of education." But this abstract statement must give way to proof to the contrary in this case.


60. In *Hobson v. Hansen*, Judge Wright, sitting as a district judge, limited his investigation of intra-district racial discrimination to the "objectively measurable aspects" of public education. 269 F. Supp. 401, 496 (D.D.C. 1967), aff'd sub nom., *Smuck v. Hobson*, 408 F.2d 175 (D.C. Cir. 1969). Judge Wright's concern for "input" variables such as per pupil expenditures, faculty salaries and physical facilities leaves unanswered the question of whether such factors actually affect student performance. The reference in *Serrano* to *Hobson* thus implies a requirement for some proof of a relationship between inputs and student performance. 5 Cal. 3d at 601, 487 P.2d at 1253, 96 Cal.
the equalization decisions, only Robinson has required a demonstration of a correlation between expenditures and measures of both input and output.\textsuperscript{61} While conceding that such correlations must be less than absolute,\textsuperscript{62} the Robinson court cited data establishing that expenditures were related to factors such as faculty effectiveness (as measured by pupil-teacher ratios and advanced degrees) and physical facilities,\textsuperscript{63} and relied on expert testimony to refute the conclusions of the Coleman Report.\textsuperscript{64}

\section{Premise Three and Justiciability}

The requirement of proving a relationship between expenditures and the quality of educational output would seem to be an essential element of the equal protection theory applied in these cases. Serrano focuses on output—the role of public education in training and preparing a child to compete in society—in declaring education to be a "fundamental interest."\textsuperscript{65} If the evil to be remedied is variance in

\textsuperscript{61} 118 N.J. Super. at 246-57, 287 A.2d at 199-205 (1972). The court declared that the relationship was proven on the basis of probabilities and expert opinion. \textit{Id.} at 248, 287 A.2d at 200. However, examination of the record indicates that the court need not have relied on probabilities. Plaintiffs produced an abundance of expert opinion affirming the cost-quality relationship. The state, in turn, offered no witnesses to contradict this testimony. The two state witnesses that did testify limited their comments to an objective discussion of state funding programs and, on cross-examination, admitted the existence of a cost-quality relationship. Record at 3.117, 2.22.

\textsuperscript{62} \textit{Id.} 118 N.J. Super. at 237, 287 A.2d at 194 (1972). The trial court explained that the level of educational expenditures will be affected by the following non-quality factors: (1) proportion of high schools to elementary schools, the former normally producing higher costs; (2) cost of living; (3) transportation costs; (4) fixed costs and capital expenditures; and (5) economies of scale.

\textsuperscript{63} \textit{Id.} at 249, 287 A.2d at 200-01 (1972).

\textsuperscript{64} One witness estimated a correlation of +.4 between per pupil expenditures and student performance. Testimony of Harry S. Dyer. Record at 4.129. While this statistical showing is less than overwhelming, the court regarded it as significant enough to mention, albeit with qualifications. 118 N.J. Super. at 253, 287 A.2d at 202 (1972). Professor Dyer also suggested that educators can be "relatively certain" that substantial disparities in expenditure levels will enable students in wealthy districts to outperform those in poorer districts. Record at 4.135. He submitted tables which indicated a direct relationship in New Jersey between per pupil expenditures and college matriculation, verbal Scholastic Aptitude Test scores, and math SAT scores, and an inverse relationship between expenditures and truancy rates (Plaintiff's Exhibit). Another expert, Professor Henry Levin, related per pupil expenditures to both input and output measures of educational quality. He placed particular emphasis on the relationship between dollars spent and the quality of faculty and administrative personnel. Record at 1.18-1.20. The court also received affidavits documenting the inadequacy of education in particular cities with relatively low per pupil expenditures. See affidavit of Aaron Schulman, Manpower Planner for Jersey City; Affidavit of Daniel Kelly, Jr., Director of the Department of Administration and Finance, Plainfield, New Jersey; Affidavit of Charles Kelley, Secretary and Business Administrator, Paterson Board of Education.

educational opportunity, it is the quality of output, not the amount of expenditures, which is critical.66

Insistence on output equality, however, would very likely lead the courts into a non-justiciable morass.67 Experts will continue to disagree on the relationship between expenditures and student performance.68 Achievement tests, the most widely accepted proof of such performance, will continue to pose interpretive problems.69 And most importantly, a focus on output would require the courts to distinguish the varying needs of individual students; the summary rejection of such a task by the Supreme Court in McInnis v. Ogilvie70 suggests that the courts are unlikely to decree a standard of equal output.

Insistence on input equality, by contrast, raises no such problems. Courts have already had considerable experience with many input standards.71 Moreover, per pupil expenditures can be used as a shorthand for all purchasable inputs.72 Indeed, one of the equalization decisions, Van Dusartz, holds that a showing of expenditure equality


68. Robinson may thus be a rather unusual case. Given the controversy aroused by the cost-quality issue, it is rather surprising that the defense did not present a single expert to refute Premise Three.


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is sufficient. Nevertheless, the courts should be prepared to consider the varying costs of educational inputs among districts to insure that expenditures bear some meaningful practical relation to the quality of education provided.

D. The Legal Argument: The Demonstrated Chain Between Individual Wealth and Educational Opportunity Is Constitutionally Impermissible

Taken together, Premises One, Two, and Three link the quality of education in a district to the individual wealth of its residents. Two lines of cases are used to support the conclusion that such systems

73. Van Dusartz states:
Plainly put, the rule is that the level of spending for a child’s education may not be a function of wealth other than the wealth of the state as a whole.

74. If plaintiffs choose to rely on per pupil expenditure variations to satisfy the input standard, courts should at least recognize the defense that the existing differentials relate to uneven cost patterns. In Hobson v. Hansen, 327 F. Supp. 814 (D.D.C. 1971), the district court faced a comparison between black and white schools in Washington, D.C. Defendants argued that the disparity related to economies of scale attained within the older, black schools. The court’s procedural treatment of this issue can serve as an example for future judicial analysis of Premise Three. Judge Wright viewed the disparity as prima facie evidence of racial discrimination, thus transferring the burden of proof to the defendant. The economies of scale argument, while credible, was found insufficient to explain the entire $100 difference. Since the defendant had not succeeded in disproving the prima facie case, the cost analysis was unsuccessful as a defense.
Id. at 850, 853. This approach would mean that plaintiffs in school finance cases can meet their initial burden by proving only Premises One and Two. If, however, defendants established that expenditure disparities were caused wholly by valid cost reasons, the Premise Three burden would return to plaintiffs. Cf. Fessler & Harr, Beyond the Wrong Side of the Tracks: Municipal Services in the Interstices of Procedure, 6 Harv. Civ. Rights-Civ. LIm. L. REV. 441, 450 (1970).

75. While judicial concern may be limited to insuring a relatively equal input standard, legislatures and administrators are not so confined. They may, as a matter of policy, compensate students with special needs. In reopening Hobson, Judge Wright emphasized this possibility:

while setting a minimum standard, the Court did not wish to preclude the school administration from focusing, if it saw fit, on equality of output, in terms of giving each student an equal educational opportunity to attain his own unique potential, rather than an equality of inputs.

Although the legal status of such compensatory programs has not yet been fully resolved, there are indications that such affirmative action would not run afoil of equal protection theory. Several courts have upheld “benign” quotas that explicitly benefit black school-children. (See Developments in the Law—Equal Protection, 82 Harv. L. Rev. 1065, 1108, n.190 (1969).

are invalid under the Equal Protection Clause. The first, dealing with voting and criminal procedural rights, establishes wealth as a suspect classification. The second proclaims the significance of education. Both, however, are open to challenge: Recent opinions in Dandridge v. Williams and James v. Valtierra suggest that the Supreme Court may be reexamining its approach to wealth discriminations. And despite considerable dicta on the importance of education, the Supreme Court has never explicitly declared it to be a "fundamental interest."

But reversal by the Supreme Court with regard to the legal argument should not preclude reform in educational finance. State courts would remain free to follow Robinson and apply equal protection guarantees in most state constitutions. Moreover, regardless of the


79. 397 U.S. 61 (1971) (welfare system allowing smaller families greater per child payments than those received by larger families, held permissible under the Equal Protection Clause).

80. 402 U.S. 137 (1971) (requirement that voters approve low-income housing prior to construction, permissible under the Equal Protection Clause).

81. Most of the cases cited in Serrano (5 Cal. 3d 584, 606-08, 487 P.2d 1211, 1256-59, 56 Cal. Rptr. 601, 615-19 (1971)) to demonstrate the significance of education involve racial discrimination, a classification that invokes strict scrutiny regardless of the interest involved. It is important to note in this regard that, unlike the United States Supreme Court, the California Supreme Court had already invalidated de facto segregation in public education and, therefore, had already held that district lines were irrelevant where racial discrimination was involved. Jackson v. Pasadena City School Dist., 59 Cal. 2d 876, 362 P.2d 878, 31 Cal. Rptr. 606 (1963); San Francisco Unified School Dist. v. Johnson, 3 Cal. 3d 937, 479 P.2d 669, 92 Cal. Rptr. 309 (1971). Whether courts without such precedent will be as willing to obliterate district boundaries when the discrimination is based only on wealth is open to considerable speculation. Conversely, it is conceivable that the equalization cases could be used against de facto segregation: A court that obliterates district lines to prevent wealth discrimination may find it difficult to deny similar relief when the classification is based on an even more invidious factor, race.

82. Robinson relied primarily upon the New Jersey Constitution, which provides: "The legislature shall provide for the maintenance and support of a thorough and ef-
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Court's decision the future of state school finance will be determined largely by state legislatures. If Serrano and its progeny are reversed, the legislatures remain free to equalize local educational burdens through state aid. If the decisions are upheld, the highly unspecific rulings will be remanded to them for implementation. In the remainder of this Note, the possible implications of such restructuring will be analyzed.

II. An Empirical Analysis of Educational Finance in Connecticut

A. Educational Finance in Connecticut Today

Connecticut state educational aid—which now contributes about 33% of the cost of current education—has little equalizing impact. Some 75% of total non-capital state aid is in the form of a flat $210 per pupil grant, which obviously has no ameliorative effect on the disparities in local educational burdens. A second 10% comes through special education grants for both exceptional and handicapped students. Since such children are likely to be distributed randomly...
throughout the state, the grants should not be expected to have any equalizing effect.

There are also a number of categorical grants designed to reimburse towns for special burdens or endeavors in which the state has an interest: School libraries, occupational and agricultural training, transportation of students, driver and adult education, school construction, and the presence of state humane institutions. Most of these categorical programs, however, incorporate a matching concept, and many smaller towns lack the resources to participate fully in such cost-sharing projects. Such towns are also often unable to hire skilled consultants with the expertise necessary to compete for limited state funds. Indeed, in both state and federal categorical grants, it appears that grantsmanship and the capacity to meet matching requirements, more than real need, determine the amount given to each town.

One grant program—Special Aid for Disadvantaged Children—allocates funds according to local wealth (the number of families with incomes of less than $4000 or with children receiving benefits under the Federal Aid to Families with Dependent Children). However, as this program accounts for only 6% of total state aid, it obviously has little overall impact.

A recent study by the National Education Finance Project ranked Connecticut fiftieth in terms of the equalizing impact of state aid. Our own study found that there was absolutely no correlation between either individual or district wealth and total current state

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94. Connecticut towns apparently play the grantsmanship game for federal aid. In 1970 they received over nineteen million dollars in federal educational assistance, Connecticut Education Association, Local Educational Finance 1969-70, 13 (1971). Of this, approximately nine million came from Title I of the 1965 Elementary and Secondary Education Act, designed to aid disadvantaged children, Id. The remainder came from a multitude of smaller grant-in-aid programs. That such programs, estimated by one source to number 232 (Weiss, supra note 93, at 63) place a premium on grantsmanship is suggested by the fact that New Haven received almost twice the federal assistance given to similarly situated Bridgeport, Connecticut Education Association, Local Educational Finance 1969-70, 8 (1971).
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Thus, Connecticut is perhaps the archetype of a pre-Serrano system of educational finance and should illustrate the premises noted above concerning non-equalized fiscal systems.

B. The Sample

The following analysis is based on the 130 largest towns in Connecticut (including 95% of the population and 96% of total property values) as they existed in 1970. These towns constitute both the general municipal and school taxing districts, with no overlapping jurisdictions such as counties to obscure local fiscal decisions.

C. Definitions

In order to avoid the ambiguities which plague the school finance decisions, this Note will define at the outset the terms used in its analysis.

1. Individual Wealth

There are at least three fundamentally different ways to express the individual wealth of the residents of a given town: Median family income, mean family income, and the percentage of families below the "poverty level." Although the three are obviously related, they may produce different results when correlated with district wealth or educational expenditures.

Median family income is the income of the family at mid-point of all those in a town. As it represents the income of the "middle" family, it is not influenced by the typical distribution of wealth where

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97. The linear correlation coefficient between total property value/pupil and total state grants for current education was .045; similarly the correlation between median family income and state grants was -.006. For an explanation of these statistics see n.112 infra.

98. The primary reason for omitting the thirty-seven smallest towns and using 1970 as the base year was to allow the use of individual income and other socioeconomic data available only from the United States Census. Two other medium-sized towns were also omitted from the sample as both are atypically "non-local" school systems. The tax base in Groton is largely tax-exempt federal property (a submarine installation), and the town therefore receives an abnormally high amount of federal "impacted" aid. Similarly, Mansfield's grand list is abnormally low due to a tremendous percentage of state property (the University of Connecticut), and it also receives substantial indirect educational aid in the form of a university supported school system.

99. Connecticut is thus unusually well-suited for such a study. Both taxing and spending decisions are clear to observer and taxpayer alike and there are no incentives for "creative accounting" either to overinclude items in the education budget to garner more state funds or to underinclude them to placate "school district" taxpayers.

a few have a large share of total income while many have a small one. Median family income thus provides a measure of how fiscal decisions affect the "typical" family.

Mean family income is the average obtained by dividing total family income by the number of families in the given group. It may therefore be somewhat misleading since it can represent an "average" between one very rich family and ten poor ones. But mean family income does have the advantage of indicating the amount of total individual wealth in a given group. This factor is therefore particularly useful in analyzing the impact of fiscal alternatives on a group as a whole.

Finally, insofar as the school finance decisions are dependent on, or at least concerned with, the "poor," a third expression of individual wealth—the percentage of families with incomes of less than some predetermined "poverty level"—becomes critically important. This is particularly true when significant "pockets of poverty" exist within taxing units which nevertheless have relatively high median or mean incomes because they include many middle- and upper-income families.

2. District Wealth

The Serrano court defined district wealth as assessed valuation per child. Although the concept of taxable wealth per pupil is basically sound, recent policy debate over the decisions suggests that a number of different definitions of "district wealth" are possible. Some have argued that it is the impact of property taxes on the home-owner or renter that should be of greatest concern; others have suggested

101. Id. at App. 26.
102. The index used by the Bureau of the Census provides a range of poverty income cutoffs, adjusted by such factors as family size, sex of family head, number of children under 18 years old, and farm and nonfarm residence—124 thresholds against which the total family income of each family in the sample is tested. At the core of this definition is a nutritionally adequate food plan ("economy" plan) designed by the Department of Agriculture for "emergency or temporary use when funds are low." Id. at App. 29-30.
103. For example, while Hartford and New Haven had poverty indices approximately 250% of the state average, their median and mean incomes were only about 25% below the state norm.
104. 5 Cal. 3d 584, 592, 487 P.2d 1241, 1246, 96 Cal. Rptr. 601, 606 (1971).
105. General discontent with residential property taxes was elevated to presidential proportions in 1972. See President Richard Nixon, The State of the Union Address, Jan. 20, 1972, 8 Wkly. Comp. Pres. Doc. 66, 71 (1972). The President directed the U.S. Advisory Commission on Intergovernmental Relations to study school property taxes, with special attention to an Administration proposal to replace residential, but apparently not commercial, school property taxes with a federal value-added tax. President Richard Nixon, Letter to Robert Merriam, Chairman, Advisory Commission on Intergovernmental Relations, Jan. 20, 1972, 8 Wkly. Comp. Pres. Doc. 92-93 (1972). However, the Administration quickly added that the value-added tax, which was to be made less regressive by family rebates, was "by no means a final decision . . . ." See N.Y. Times, Feb. 2, 1972, at 55, col. 1. The President himself promised that the Administration would not "replace one regressive tax [the residential property tax] with another regressive
that it is the uneven impact on commerce and industry—and the consequent "lumping" of business properties—that is of primary interest. This Note will measure "district wealth" in terms of both categories: Included is a calculation of the values of "residential property," which made up slightly over 55% of the total state grand list, and "business property," which made up slightly over 15%.

Furthermore, a more refined definition of district wealth should account for the increasing non-educational burdens borne by the larger cities. There is, of course, no precise method for measuring this overburden: To do so would first require an impossible judgment as to which services a municipality should provide. Nevertheless, it is a simple fact of municipal finance in Connecticut that the percentage of total property tax revenue committed to non-educational and capital expenditures ranged from 8.5% in one small town to 81.3% in one large city—with the other 167 towns in a complete distribution in between. These differing non-educational expenditure levels therefore were accepted as a fiscal given, and a second set of "revised" district wealth indices was generated to reflect the differences in district "ability-to-pay" due to non-educational expenses.

Thus, there are six expressions of "district wealth":

- grand list
- residential value
- business value
- revised grand list
- revised residential value
- revised business value.

3. Educational Expenditures

The Serrano court based its analysis on "per pupil expenditures." Apparently the court did not feel it was necessary to define this term...
more precisely. Yet it may represent a number of different formulations depending on whether it includes state and federal aid or only local educational expenditures, and whether it encompasses capital expenditures or is limited to current costs. Here, educational expenditures will be defined as the amount of local revenue—and local revenue alone—spent for the current education of each child. This definition thus excludes both state and federal aid and the retirement of capital bonds (which may be bunched at any one point in time).

4. Independent Variables

A more complete analysis of Premises One and Two requires that independent factors be held constant. Although it is obviously impossible to account for every possible variable, this Note selected three for further analysis: The median educational attainment of those over 25, the percentage of all children in public schools, and the percentage of professional and technical workers in the population. It can be hypothesized that educational expenditures will vary directly with all three: That is, that the taxpayers will be more willing to tax for education: a) The more educated they themselves are, b) The more they use public rather than private or parochial schools, and c) The more education has had an impact on their own careers. Through partial correlations these factors will be held constant to determine whether the relationships in Premises One and Two are significant in and of themselves or are merely secondary ones hiding deeper causal connections.

D. The Surface Validity of Premises One and Two

1. Premise One: The Relationship of Individual Wealth to District Wealth

The linear correlations between the three measures of individual wealth and the six of district wealth were as follows:

111. For the definitions and methodology underlying these statistics see U.S. BUREAU OF THE CENSUS, op. cit., supra note 100, at App. 8-10, App. 18-25. Median educational attainment was given in the census text; the percentage of children in the public schools for towns with over 10,000 was computed using public school enrollments from CONNECTICUT EDUCATION ASSOCIATION, LOCAL EDUCATIONAL FINANCE 1969-1970, at 8-13 (1971) and total school enrollments from the census data, U.S. BUREAU OF THE CENSUS, op. cit., supra note 100, at 215-22, 354-59; the professional percentage was computed utilizing census data. Id. at 236-42, 366-71, 401-08.

112. The linear correlation coefficient for a set of observations of two variables, X and Y, indicates the degree to which the observations coincide with an imaginary line
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TABLE I

<table>
<thead>
<tr>
<th></th>
<th>Median Wealth</th>
<th>Mean Wealth</th>
<th>% in Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand List/pupil</td>
<td>0.449</td>
<td>0.558</td>
<td>-0.144</td>
</tr>
<tr>
<td>Residential Value/pupil</td>
<td>0.659</td>
<td>0.760</td>
<td>-0.314</td>
</tr>
<tr>
<td>Business Value/pupil</td>
<td>-0.140</td>
<td>-0.074</td>
<td>0.390</td>
</tr>
<tr>
<td>Revised Grand List/pupil</td>
<td>0.553</td>
<td>0.660</td>
<td>-0.261</td>
</tr>
<tr>
<td>Revised Residential Value/pupil</td>
<td>0.718</td>
<td>0.815</td>
<td>-0.377</td>
</tr>
<tr>
<td>Revised Business Value/pupil</td>
<td>-0.090</td>
<td>-0.030</td>
<td>0.218</td>
</tr>
</tbody>
</table>

This matrix supports the following findings:

1. Although both median and mean family income correlate fairly highly with total grand list/pupil, the correlation between poverty families and this expression of district wealth is not significant. Thus, the popular belief that the "poor" live in "poor" districts is clearly mistaken.

(L) drawn so as to minimize the sum of the distances (d) between the predicted line and each point of observed behavior.

Perfect correlation—that is a pattern where every observation is on the imaginary line—is indicated by a coefficient of either +1.000 or -1.000, depending on whether the slope of the imaginary line is up or down, whether the two factors vary directly (as X increases, Y increases) or inversely (as X increases, Y decreases). A coefficient of 0.000 indicates a complete lack of any correlation, or random behavior. Thus, the greater the coefficient, whether in the positive or negative direction, the closer the actual observations conform to a straight line, and hence the more they exhibit a linear relationship.

It should be noted that all of our correlations are linear—that is, they measure only the degree to which the observed behavior coincides with a straight line. Though we did establish—by means of a distribution plot—that our key variables produced fairly normal distributions (bell-shaped curves), and thus that there was no compelling reason to look further for non-linear (for example, exponential or logarithmic) behavior, a more complete statistical proof might wish to consider the possibility of non-linear correlation.

The point to be emphasized is that such a correlation coefficient—as well as the partial correlation and linear regression coefficients described below—are based on every observation (every town), not merely the two or three points at the extremes of the continuum. The coefficient thus offers a better chance of understanding the entire set of school districts than does a "biggest-to-smallest" comparison which may well ignore important behavior in the far greater number of towns between the two extremes.
2. When only residential value/pupil is considered, however, there is a very significant relationship between district wealth and all three measures of individual wealth.

3. In addition, there is a significant positive correlation between family poverty and business wealth. Thus, the “poor” tend to live in districts which are actually “wealthier” in terms of commercial and industrial property.

4. Revision to account for overburden tends to make more striking the relationships between all indices of individual wealth and total and residential value. However, it makes the relationships between all three and business wealth less significant. This should not be surprising in view of the relatively high concentrations of business wealth in major cities where overburden is greatest.

Thus, it may be concluded that Premise One is valid if we confine our examination to total district or residential wealth and to median or mean income. It is clearly incorrect, however, to contend that the “poor” live in “poor” districts: The relationship between poverty families and total district wealth is unclear; and in terms of business wealth, the findings show that the “poor” actually live in the “wealthier” districts.

2. **Premise Two: The Relationship of District Wealth to Expenditures**

The correlations between district wealth and expenditures/pupil were as follows:

<table>
<thead>
<tr>
<th>Table II</th>
<th>Expenditures/Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand List/pupil</td>
<td>0.624</td>
</tr>
<tr>
<td>Residential Value/pupil</td>
<td>0.646</td>
</tr>
<tr>
<td>Business Value/pupil</td>
<td>0.295</td>
</tr>
<tr>
<td>Revised Grand List/pupil</td>
<td>0.779</td>
</tr>
<tr>
<td>Revised Residential Value/pupil</td>
<td>0.760</td>
</tr>
<tr>
<td>Revised Business Value/pupil</td>
<td>0.365</td>
</tr>
</tbody>
</table>

These correlations support the following findings:

1. All measures of district wealth correlate quite highly with expenditures/pupil.

2. Moreover, the degree of correlation is equally significant whether the measure of district wealth is total assessment or residential value. But the degree of correlation between business wealth and expenditures is considerably less.
3. The impact of municipal overburden on the district wealth-expenditure relationship is pronounced. In every instance the degree of correlation is greater when overburden is considered. This finding suggests that overburden—as well as district wealth—is a significant factor in expenditure decisions. However, while noting that municipal overburden is important, it still may be concluded that Premise Two is generally valid.

3. The Direct Proof of a Relationship Between Individual Wealth and Expenditures

To the extent that both Premises One and Two are valid, it should follow that there is also a direct relationship between individual wealth and expenditure levels. But as noted above, despite the strong relationships between median or mean family income and district wealth, the relationship between the percentage of poverty families and property values is far from clear. Not surprisingly, then, while the correlations between both median and mean family income and expenditures/pupil are quite significant, .638 and .719, respectively, the relationship between poverty families and expenditures is inconclusive, —178.

While it may be valid to say that expenditures/pupil are related to some measure of individual wealth, it is not correct—at least in Connecticut—to assume that there is an inverse relationship between poverty and such expenditures. Thus, the major factual assumption of Serrano—that the educational financing system discriminates against the “poor”—is simply false in Connecticut.

4. The Direct Proof of an Inverse Relationship Between Tax Effort and Expenditures

Although it was not necessary to its decision, the Serrano court suggested that the true injustice of the California system was demonstrated by the fact that extremely poor districts not only had to tax more to spend the same as rich districts but also had to tax more to spend less.113 While there may be a few districts in Connecticut in such a position, we found that as an overall correlation, the relationship between tax effort—as measured in mill rate equalized for both varying assessment ratios and inflation—and expenditures was not significant, —.107. But it should be remembered that this “icing on the cake” is not essential. All that a plaintiff need prove in Premise

Two is that there is a relationship between district wealth and expenditures—and this generally is true in Connecticut.

E. The Effect of Independent Variables on Premises

One and Two

It has already been suggested that the relationships between individual wealth and district wealth and between district wealth and expenditures may be a product of many variables. Unfortunately, some of the most interesting factors are beyond the scope of statistical analysis, as they are impossible to quantify. This Note has not, for example, considered the impact of local political cleavages, strong teachers’ or taxpayers’ associations, or attitudinal differences among parents, although all may have some part in fiscal decisions. The analysis here will content itself with three variables which one reasonably might suspect would influence local educational decisions: Professionalism, educational levels, and “public schoolness.”

1. Premise One and Independent Variables

The partial correlations\textsuperscript{114} between the measures of individual and district wealth, with each of the three independent variables held constant, were as follows:

<table>
<thead>
<tr>
<th>Holding Constant:</th>
<th>Grand List/Pupil and</th>
<th>Revised Grand List/Pupil and</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Med. Inc.</td>
<td>Mean Inc.</td>
</tr>
<tr>
<td>Education</td>
<td>.3879</td>
<td>.5204</td>
</tr>
<tr>
<td>Public Schoolness</td>
<td>.4406</td>
<td>.5569</td>
</tr>
<tr>
<td>Professionalism</td>
<td>.4493</td>
<td>.5585</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.449</td>
<td>.558</td>
</tr>
<tr>
<td>Residential Value/Pupil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.5799</td>
<td>.7099</td>
</tr>
<tr>
<td>Public Schoolness</td>
<td>.6581</td>
<td>.7595</td>
</tr>
<tr>
<td>Professionalism</td>
<td>.6590</td>
<td>.7596</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.659</td>
<td>.760</td>
</tr>
<tr>
<td>Business Value/Pupil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>-.0890</td>
<td>-.0138</td>
</tr>
<tr>
<td>Public Schoolness</td>
<td>-.2001</td>
<td>-.1068</td>
</tr>
<tr>
<td>Professionalism</td>
<td>-.1392</td>
<td>-.0733</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>-.140</td>
<td>-.074</td>
</tr>
</tbody>
</table>

\textsuperscript{114} The primary purpose of the partial correlation coefficient is to express the degree of correlation between two variables, I and J, while removing the influence of a third variable, K. For example, in calculating a high degree of correlation between I (people with red hair) and J (educational attainment), a study might wish to factor out the impact of K (intelligence) to determine whether it was the relationship between red-hairedness and attainment or between intelligence and attainment that was really at work. We would do this by essentially subtracting the correlation coefficients between I and K and between J and K from the calculated I, J correlation by removing the degree of correlation between red-haired people and intelligence and between in-

1330
In each case the individual wealth-district wealth matrix supports the following findings:

1. Holding educational level constant reduces the relationship between individual wealth and district wealth. This is not particularly surprising as exclusionary zoning is likely to result in educational as well as economic segregation.

2. Professionalism and "public schoolness" appear to have no significant impact on the relationship between individual and district wealth.

3. So far as these three independent variables are concerned, it may be concluded that the relationship between individual and district wealth is a strong one.

2. Premise Two and Independent Variables

The partial correlations of district wealth and educational expenditures, holding the three independent variables constant, were as follows:

<table>
<thead>
<tr>
<th>Holding Constant:</th>
<th>Expenditures/Pupil and</th>
<th>Grand List/Pupil</th>
<th>Revised Grand List/Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational</td>
<td>.5922</td>
<td>.7432</td>
<td></td>
</tr>
<tr>
<td>Public Schoolness</td>
<td>.6156</td>
<td>.7847</td>
<td></td>
</tr>
<tr>
<td>Professionalism</td>
<td>.6238</td>
<td>.7787</td>
<td></td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.624</td>
<td>.779</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Residential Value/Pupil</th>
<th>Revised Residential Value/Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>.5788</td>
</tr>
<tr>
<td>Public Schoolness</td>
<td>.6461</td>
</tr>
<tr>
<td>Professionalism</td>
<td>.6465</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.646</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Value/Pupil</th>
<th>Revised Business Value/Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>.3819</td>
</tr>
<tr>
<td>Public Schoolness</td>
<td>.2661</td>
</tr>
<tr>
<td>Professionalism</td>
<td>.2945</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.295</td>
</tr>
</tbody>
</table>

Intelligence and educational attainment from the red-haired to attainment relationship.

By comparing the partial correlation coefficient with the unfactored coefficient, it is possible to assess the degree to which the independent variable influenced the relationship between the first two. A substantial decrease (in magnitude, not in sign) from the unfactored to partial correlation suggests that the first relationship (as between red-haired people and educational attainment) was a spurious one masking a more significant relationship (as between intelligence and attainment). Conversely, a minimal decrease suggests that the original relationship is valid independently of the third variable. Finally, a substantial increase in magnitude suggests that the original relationship is even stronger when other factors are held constant.
These matrices support the following findings:

1. Professionalism and “public schoolness” have very little effect on the relationship between district wealth and expenditure levels.

2. But educational level tends to be significant in two ways: Holding education constant, the relationship between total and residential value and expenditures tends to decrease; but the relationship between business wealth and expenditures tends to increase. This phenomenon may be explained by the fact that educational level—as it follows individual income—tends to be greatest in areas zoned for residential as opposed to commercial use.

3. In all cases, the district wealth-expenditure relationships tend to survive the factoring of these three variables and thus appear to be independently strong correlations.

3. Premise Two and Individual Wealth

The most obvious omission from the above analysis is the impact of individual wealth on the perceived relationship between district wealth and expenditures. As already noted, there does appear to be a fairly strong relationship between individual wealth and expenditures. If the perceived relationship between district wealth and expenditures is a spurious one—that is, if the “poor” spend less regardless of the operation of the property tax system—then the focus of the school finance decisions is misplaced. The interdependent impact of individual and district wealth on educational expenditures must therefore be examined.

The partial correlations between district wealth and expenditures, holding individual wealth constant, are as shown in Table V on following page.

These matrices support the following findings:

1. Holding constant individual wealth—in terms of median or mean family income—does have a significant impact on the perceived relationship between district wealth and expenditures. Factoring out the effect of individual wealth lessens the relationship between total district wealth and expenditures by approximately 25 per cent. The same factoring decreases the relationship between residential wealth and expenditures by 50 to 60 per cent. Holding individual wealth constant, however, increases the relationship between business wealth and expenditures by 40 to 50 per cent. These findings again support the conclusion that the individually wealthy live in “rich” districts.
A Statistical Analysis of School Finance Decisions

TABLE V

<table>
<thead>
<tr>
<th>Holding Constant:</th>
<th>Expenditures/Pupil and</th>
<th>Grand List/Pupil</th>
<th>Revised Grand List/Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Income</td>
<td>.4907</td>
<td>.6640</td>
<td></td>
</tr>
<tr>
<td>Mean Income</td>
<td>.3865</td>
<td>.5830</td>
<td></td>
</tr>
<tr>
<td>% in Poverty</td>
<td>.6144</td>
<td>.7709</td>
<td></td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.624</td>
<td>.779</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Residential Value/Pupil</th>
<th>Revised Residential Value/Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Income</td>
<td>.3894</td>
<td>.5639</td>
</tr>
<tr>
<td>Mean Income</td>
<td>.2216</td>
<td>.4333</td>
</tr>
<tr>
<td>% in Poverty</td>
<td>.6328</td>
<td>.7607</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.646</td>
<td>.760</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Business Value/Pupil</th>
<th>Revised Business Value/Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Income</td>
<td>.5042</td>
<td>.5506</td>
</tr>
<tr>
<td>Mean Income</td>
<td>.5023</td>
<td>.5561</td>
</tr>
<tr>
<td>% in Poverty</td>
<td>.3808</td>
<td>.4201</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.295</td>
<td>.365</td>
</tr>
</tbody>
</table>

only in overall or residential terms: It is the individually poor who live with business wealth.

2. But while individual "wealth" may have some effect on the district wealth-expenditure relationship, individual "poverty" has little impact. Once again, it is clear that "individual wealth" as used in the school finance decisions cannot refer to the poorest in our society.

Yet, before one concludes that Premise Two is statistically invalid, he must also consider the effect on the individual wealth-expenditure relationship when district wealth is held constant:

TABLE VI

<table>
<thead>
<tr>
<th>Holding Constant:</th>
<th>Expenditures/Pupil and</th>
<th>Med. Inc.</th>
<th>Mean Inc.</th>
<th>% in Pov.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand List/Pupil</td>
<td>.5132</td>
<td>.5714</td>
<td>—.1142</td>
<td></td>
</tr>
<tr>
<td>Residential Value/Pupil</td>
<td>.3702</td>
<td>.4590</td>
<td>.0343</td>
<td></td>
</tr>
<tr>
<td>Business Value/Pupil</td>
<td>.7183</td>
<td>.7772</td>
<td>—.3053</td>
<td></td>
</tr>
<tr>
<td>Revised Grand List/Pupil</td>
<td>.3977</td>
<td>.4347</td>
<td>.0419</td>
<td></td>
</tr>
<tr>
<td>Revised Residential Value/Pupil</td>
<td>.2045</td>
<td>.2623</td>
<td>.1809</td>
<td></td>
</tr>
<tr>
<td>Revised Business Value/Pupil</td>
<td>.7237</td>
<td>.7840</td>
<td>—.2834</td>
<td></td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>.638</td>
<td>.719</td>
<td>—.178</td>
<td></td>
</tr>
</tbody>
</table>

1993
These matrices support the view that just as individual wealth appears to be a significant component of the district wealth-expenditure relationship, so district wealth may influence the correlation between individual wealth and expenditures. Again the interdependence of the two types of wealth is clearest when residential or overall wealth is analyzed. And again, the strong relationship between the “poor” and business wealth is demonstrated.

Perhaps most importantly, it should be noted that when the most common definitions of individual wealth (median income) and district wealth (total grand list) are analyzed, their interdependence is almost equal:

1. Correlation Between Total Grand List and Expenditures:
   - Uncontrolled: 0.624
   - Controlling for Median Income: 0.491
2. Correlation Between Median Income and Expenditures:
   - Uncontrolled: 0.638
   - Controlling for Total Grand List: 0.513

Thus, in the absence of specific findings on the effect of other variables, individual and district wealth appear to combine to produce differences in educational expenditures. While the precise nature of this relationship is open to further examination, these findings show that the simple assertion that the poor live in poor districts and therefore spend less on their children’s education is not only ambiguous but also simply incorrect.

III. The Impact of Permissible Fiscal Alternatives

The above analysis suggests that the validity of key assumptions in the school finance decisions depends on the definitions used. It should not be surprising, then, that the impact of different systems of school finance also varies with both the scheme employed and the particular group under consideration.

In the analysis that follows, fifteen fiscal alternatives will be examined to assess the progressivity or regressivity of each as measured against individual income. Progressivity is, of course, only one element in the selection of a fiscal system: One could just as well assess a system’s predictability, administrative cost, morality, or commercial impact. But Serrano and its progeny are essentially concerned with the problem of providing education in a society with vast disparities in individual wealth. It therefore makes sense to focus on the way in
A Statistical Analysis of School Finance Decisions

which these fiscal alternatives solve that problem by shifting resources from the rich to the poor.\footnote{115}

A. The Alternatives

Five taxes and three expenditure patterns were chosen to represent the broad range of alternatives a legislature faced with a Serrano decree could enact.\footnote{116} In each case the taxation scheme was designed to raise $800 million;\footnote{117} in each, the expenditure pattern was designed to distribute the same amount. The tax contribution of each district was then subtracted from its expenditure grant to determine its net gain or loss (per pupil) under each alternative.

1. The Five Taxes

The most obvious form of taxation which would pass muster under Serrano is a state-wide property tax of a uniform rate levied on all

\footnote{115} Students of the school equalization decisions may raise two objections to the discussion that follows. The first is that we are confusing the concepts of district and individual wealth by comparing the net gains or losses for a district as a whole with the individual income of those who live there. The objection will correctly note that not all of the taxes proposed here will be paid by individuals who live in the district: Some will come from businesses which, in turn will pass the burden along to their stockholders, employees, or consumers. This criticism fails to recognize that while the residents of a given town may not "pay" the hypothetical tax, it is, in a very real sense, their money. Were it not for a system of centralized financing established to conform to Serrano, the residents would have those funds in their local treasury to spend on public goods and services. Thus, a city's contribution to a state-wide scheme does come from its residents, as they have that much less to spend in the combined public-private market. It is therefore proper to compare the net outcome of a fiscal system to an entire district with the individual wealth of those who live there.

Second, it may be objected that this analysis has failed to allow for a system wherein each district is free to select a tax rate and a corresponding expenditure level decreed by the state—so-called power equalization. (For the genesis of the power-equalizing alternative see PRIVATE WEALTH 200-42.) The Note has indeed chosen to ignore the power-equalizing model. First, to the extent that its proponents consider only the expenditure side of financing, they have trivialized the problem. It is quite easy to decree that all towns will be allowed to spend the same amount for each per cent of taxation; it is more difficult to recognize that in any such equalization there will be both "winners" and "losers," and that who wins and loses may depend equally on the system of taxation that is employed.

Moreover, it is impossible to predict, in any statistical way, the net effect of power equalizing. Again, it is trivial to note that a rich town will either have to drop its expenditure level by $400 or raise its tax rate by 20 mills. It is far more difficult to determine which alternative—or which one of an almost unlimited number of responses in between—the political process of the town will produce. Finally, as follows from the above, a focus on power equalizing misses the fundamental point that the centralization of school financing could utilize taxes other than those on property.

116. Each of the schemes to be discussed meets the Serrano mandate that educational expenditures per child be independent of either individual or district wealth. See 5 Cal. 3d 584, 589, 487 P.2d 1241, 1244, 96 Cal. Rptr. 601, 604 (1971).

117. The $800 million level was chosen as it is an approximation of the total level of state and local educational spending in Connecticut today. See CONNECTICUT PUBLIC EXPENDITURE COUNCIL, LOCAL PUBLIC SCHOOL EXPENSES AND STATE AID IN CONNECTICUT 2 (January, 1972) for the trend suggesting the $800 million level for 1972-1973 year.
property following the equalization of assessments. In order to simulate such a tax, a mill rate of 39.7 was applied to each town's grand list (revised for varying assessment ratios and inflation).

To deal with suggestions that the costs of education be placed on various components of the grand list, both residential and business property taxes were simulated by applying mill rates of 66.2 and 338.1 to the residential and commercial values respectively. While such high mill rates are quite unlikely, they were used in order to demonstrate the effect of choosing such a tax as one component of an overall fiscal system.

Since it is also very possible that the states will choose to reduce or eliminate the role of property taxes in educational finance, the analysis simulated the other two most common forms of state taxation—sales and personal income taxes. In simulating a broad based sales tax—one which would exempt food and shelter as necessities—its burden was assumed to be proportional to family income. This simulated tax was therefore set to exact the same percentage of income—7.55 per cent—from each family. However, it should be remembered that the consequences will be different if the sales or value-added tax employed is either more regressive or progressive as a result of its particular exemption scheme.\(^\text{118}\)

Similarly, the experience of the states demonstrates that a wide range of personal income taxes is possible, with differences in exemptions, deductions, exclusions, and rate structures.\(^\text{119}\) In order to be familiar to the greatest number, this analysis employed the structure of the federal income tax and applied a flat "piggyback" percentage of 41 per cent to the 1970 average federal tax burdens for each income category.

2. The Three Expenditure Patterns

The most obvious, and also most simplistic, expenditure pattern is the basic \textit{per pupil} alternative, wherein each district receives the same amount of aid per student.

A second option gaining in popularity among commentators is one which recognizes the varying educational burdens caused by unequal socioeconomic conditions—the commonly termed compensatory model. Many different formulas could be applied to take account of additional educational needs resulting from illiteracy, health problems, psycho-

\(^{118}\). See \textit{Prentice Hall State and Local Taxes} \S 92,952-92,965 (1972).

logical needs, or simple underexposure to mental stimulation. This Note has chosen the index of family poverty to represent the need for such compensation. But it would be unrealistic to believe that a legislature would ever distribute all funds solely on the basis of need. The “compensatory” scheme was therefore set to allot 75 per cent of total funds in the form of “foundation” grants on a per pupil basis and to distribute only 25 per cent according to the number of poverty families.

A third option was designed to account for the unequal distribution of non-educational municipal needs—the overburden alternative. The simulation was constructed to distribute 75 per cent of the grants on a per pupil basis and 25 per cent according to the district’s total expenditures committed to non-educational needs.

B. The Redistributive Impact of the Alternatives

The regression coefficients of the fifteen alternatives when compared to individual wealth were as follows:

<table>
<thead>
<tr>
<th>TABLE VII</th>
<th>Med. Inc.</th>
<th>Mean Inc. % in Pov.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Tax and Per Pupil Expenditures</td>
<td>-.0989</td>
<td>.0835</td>
</tr>
<tr>
<td>Property Tax and Compensatory Model</td>
<td>-.1233</td>
<td>-.0882</td>
</tr>
<tr>
<td>Property Tax and Overburden Model</td>
<td>-.1004</td>
<td>-.0849</td>
</tr>
<tr>
<td>Residential Tax and Per Pupil Expenditures</td>
<td>-.1463</td>
<td>-.1168</td>
</tr>
<tr>
<td>Residential Tax and Compensatory Model</td>
<td>-.1713</td>
<td>-.1315</td>
</tr>
<tr>
<td>Residential Tax and Overburden Model</td>
<td>-.1491</td>
<td>-.1182</td>
</tr>
<tr>
<td>Business Tax and Per Pupil Expenditures</td>
<td>-.0408</td>
<td>.0113</td>
</tr>
<tr>
<td>Business Tax and Compensatory Model</td>
<td>.0158</td>
<td>.0034</td>
</tr>
<tr>
<td>Business Tax and Overburden Model</td>
<td>.0387</td>
<td>.0039</td>
</tr>
<tr>
<td>Sales Tax and Per Pupil Expenditures</td>
<td>-.0763</td>
<td>-.0853</td>
</tr>
<tr>
<td>Sales Tax and Compensatory Model</td>
<td>-.1013</td>
<td>-.0813</td>
</tr>
<tr>
<td>Sales Tax and Overburden Model</td>
<td>-.0784</td>
<td>-.0580</td>
</tr>
<tr>
<td>Income Tax and Per Pupil Expenditures</td>
<td>-.1517</td>
<td>-.1257</td>
</tr>
<tr>
<td>Income Tax and Compensatory Model</td>
<td>-.1767</td>
<td>-.1404</td>
</tr>
<tr>
<td>Income Tax and Overburden Model</td>
<td>-.1537</td>
<td>-.1271</td>
</tr>
</tbody>
</table>

These coefficients indicate that the income tax alternative is the most progressive, followed by residential property, total property, and sales taxes. The tax on business property—though a centralized one

120. The regression coefficient represents the slope of the imaginary line that best fits the observed data in the linear correlation described above. See n.112 supra. A positive coefficient indicates a line that slopes up from left to right; a negative coefficient indicates one which slopes down from left to right. The greater the coefficient, regardless of sign, the greater the slope.

Thus a positive coefficient and slope comparing gains from a fiscal alternative to family income indicates a regressive scheme as the wealthy receive more; a negative coefficient and slope would indicate a progressive scheme as the wealthy receive less. But when family poverty is used to measure family wealth, just the opposite is true.

Since the slope of the line and hence the numerical value of the coefficient is
which would satisfy Serrano—not only failed to transfer resources from the rich to the poor but (like a befuddled Robin Hood) took from the districts inhabited by the “poor” and gave to those of the individually wealthy.

The compensatory model, tied directly to individual wealth, proved to be the most progressive of the expenditure patterns. But this alternative, allotting 25 per cent of all available funds on the basis of economic need, still did not fundamentally alter the general progressive-to-regressive pattern decreed by the chosen tax. Such a finding should signal those involved in the restructuring of educational finance that choice of tax is perhaps even more important in terms of overall income redistribution than choice of expenditure pattern.

Second, it is clear that the additional grant for municipal overburden did not greatly change the overall character of the taxing and spending scheme: A commitment of 25 per cent of all funds produced differences of only about 5 per cent as far as progressivity was concerned. Again this suggests that it is the choice of taxing scheme, not expenditure option, that is of paramount importance.

Even more dramatic than these comparisons between the poor and the rich are the transfer payments between four archetypal towns. The simulation produced the following matrix of net gains and losses for these four hypothetical towns (Table VIII, following page).

An examination of these figures suggests that one’s preference among fiscal alternatives very definitely depends on his residence. Big City (a city with a population of approximately 115,000) is slightly disadvantaged under the two most likely forms of equalization—state-wide obviously dependent on the unit chosen to measure the two variables, comparisons between regression coefficients with different variables are meaningless. The numerical value of the coefficient—and hence the slope of the imaginary line—is relevant only in comparisons based on the same unit measure. It is thus meaningful to compare the slope of the lines derived from two fiscal alternatives when the same measure of individual wealth is used.

121. Each “hypothetical town” is actually a statistical conglomeration of five real towns—scattered throughout the state to minimize the impact of regional differences—with similar socioeconomic and geographic characteristics. The “town” averages were:

<table>
<thead>
<tr>
<th></th>
<th>Big City</th>
<th>Mill Town</th>
<th>Golden Town</th>
<th>Small Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>136,000</td>
<td>52,500</td>
<td>19,400</td>
<td>3,000</td>
</tr>
<tr>
<td>Poverty (%)</td>
<td>9.4</td>
<td>4.2</td>
<td>2.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Median Family Income</td>
<td>$10,400</td>
<td>$11,600</td>
<td>$19,300</td>
<td>$12,900</td>
</tr>
<tr>
<td>Median Educational Attainment (yrs.)</td>
<td>11.1</td>
<td>12.0</td>
<td>13.0</td>
<td>11.2</td>
</tr>
<tr>
<td>Foreign Born (%)</td>
<td>12.2</td>
<td>8.4</td>
<td>6.2</td>
<td>3.8</td>
</tr>
<tr>
<td>% of Grand List Business</td>
<td>26.2</td>
<td>16.0</td>
<td>6.8</td>
<td>10.8</td>
</tr>
<tr>
<td>Residential</td>
<td>41.0</td>
<td>52.2</td>
<td>73.2</td>
<td>56.0</td>
</tr>
</tbody>
</table>
TABLE VIII
(Transfer Payments in $/Pupil)

<table>
<thead>
<tr>
<th>Fiscal Alternative</th>
<th>Big City</th>
<th>Mill Town</th>
<th>Golden Ghetto</th>
<th>Small Burg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Tax &amp; Per Pupil</td>
<td>45</td>
<td>-98</td>
<td>-79</td>
<td>+224</td>
</tr>
<tr>
<td>Property Tax &amp; Compensatory</td>
<td>+200</td>
<td>-132</td>
<td>-250</td>
<td>+181</td>
</tr>
<tr>
<td>Property Tax &amp; Overburden</td>
<td>+37</td>
<td>-64</td>
<td>-120</td>
<td>+104</td>
</tr>
<tr>
<td>Residential Tax &amp; Per Pupil</td>
<td>+283</td>
<td>-24</td>
<td>-476</td>
<td>+215</td>
</tr>
<tr>
<td>Residential Tax &amp; Compensatory</td>
<td>+550</td>
<td>-57</td>
<td>-647</td>
<td>+171</td>
</tr>
<tr>
<td>Residential Tax &amp; Overburden</td>
<td>+367</td>
<td>-16</td>
<td>-526</td>
<td>+143</td>
</tr>
<tr>
<td>Business Tax &amp; Per Pupil</td>
<td>-1295</td>
<td>-463</td>
<td>+1047</td>
<td>+710</td>
</tr>
<tr>
<td>Business Tax &amp; Compensatory</td>
<td>-801</td>
<td>-496</td>
<td>+554</td>
<td>+674</td>
</tr>
<tr>
<td>Business Tax &amp; Overburden</td>
<td>-1214</td>
<td>-423</td>
<td>+996</td>
<td>+639</td>
</tr>
<tr>
<td>Sales Tax &amp; Per Pupil</td>
<td>-5</td>
<td>+35</td>
<td>-392</td>
<td>+310</td>
</tr>
<tr>
<td>Sales Tax &amp; Compensatory</td>
<td>+242</td>
<td>+23</td>
<td>-532</td>
<td>+297</td>
</tr>
<tr>
<td>Sales Tax &amp; Overburden</td>
<td>+77</td>
<td>-94</td>
<td>-442</td>
<td>+263</td>
</tr>
<tr>
<td>Income Tax &amp; Per Pupil</td>
<td>+114</td>
<td>-217</td>
<td>-846</td>
<td>+614</td>
</tr>
<tr>
<td>Income Tax &amp; Compensatory</td>
<td>+359</td>
<td>+185</td>
<td>-1017</td>
<td>+471</td>
</tr>
<tr>
<td>Income Tax &amp; Overburden</td>
<td>+196</td>
<td>+257</td>
<td>-896</td>
<td>+443</td>
</tr>
</tbody>
</table>

property or sales taxes with a simple per pupil distribution. It is enormously penalized by a plan that employs a tax on business property.

Mill Town (an industrial blue collar suburb of about 50,000) is slightly penalized by both overall and residential property taxes and is severely disadvantaged by a business property tax. It receives a slight transfer payment from alternatives based on a sales tax and is treated even more favorably under the income tax model.

Golden Ghetto (a bedroom suburb of about 20,000) is substantially taxed under the income, sales and residential property tax models. It also loses under the overall property tax model, though not enough to qualify this scheme as truly "progressive." Not surprisingly in view of its exclusionary zoning, it reaps a substantial windfall from a tax on business property.

Finally, Small Burg (a rural town with a population of about 3000) appears to gain under every scheme. This is explained by the fact that only Small Burg has both low property values and low individual incomes. But here too there are choices to be made: Small Burg residents will favor schemes based on income or business property taxes over other alternatives.

In conclusion, it should be noted that these transfer payments are quite large: Given the state average per pupil expenditure of approximately $1000,\(^{122}\) some of them amount to forcing one district to pay the total educational costs of another district of the same size.

\(^{122}\) See CONNECTICUT PUBLIC EXPENDITURE COUNCIL, LOCAL PUBLIC SCHOOL EXPENSES AND STATE AID IN CONNECTICUT 3 (January, 1972) for historical trend suggesting the $1000 level for 1972-1973 year.
Thus, school equalization based on formulas that appear reasonable can have a truly redistributive effect. But a poorly designed alternative may have no impact at all, or may actually result in substantial transfer payments from the cities to the suburbs, from the poor to the rich. Such findings suggest that if the redistributive promise of the school finance decisions is to be realized, those who are charged with restructuring educational finance have to evaluate with care the ultimate effect of all fiscal alternatives.  

IV. Conclusions

Within the holdings of the school equalization decisions, educational finance may be restructured in ways which will further disadvantage the poor. This will be the case as long as the courts merely decree broad guidelines for educational equality and do not specify the source of school funds. Ideally, the courts should write their decisions so as to insure that the primary source of such funds will be a progressive tax. A truly activist court might hold that true equal protection will not be possible until basic public services are funded by progressive taxes. There is, however, little likelihood that the American judiciary will attempt to exercise such decidedly legislative powers. If they do refuse to do so, they will have three alternatives in future equalization suits.

First, they can continue to ignore the problems of income redistribution and focus instead on the short-run equalization of local tax burdens. But this alternative might produce systems which will further disadvantage the poor. Moreover, it would force the courts to acknowledge the irrelevancy of the "poverty" cases and thus deprive their decisions of any legal foundation.

A second course would be to do nothing—to decline to examine financing systems on the grounds that such an analysis is hopelessly non-justiciable. Perhaps the decisions to date, even if reversed by the Supreme Court, have sensitized the public to present inequities and reform will occur without further judicial coercion. Perhaps fears of massive busing or the demolition of exclusionary zoning will provide additional impetus for partial reform in educational finance. But it

124. See notes 22-23 supra.
A Statistical Analysis of School Finance Decisions

seems equally likely that century-old systems of local finance will not be fundamentally altered without judicial intervention. And it seems even more likely that reversal by the Supreme Court—even on ground of non-justiciability—will be taken as an endorsement of the inequitable status quo.

The final approach would be to confront fiscal realities and provide the legislatures, and the public, with a far more precise definition of educational equality. The courts must recognize both the complexities of educational finance and the limitations of judicial intervention; they must avoid the rather simplistic logic of past opinions and acknowledge the inherent problems of equalization. If they are prepared to engage in such honest analysis, their work may yet produce the economic and educational reform the nation clearly needs.