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The Effects of Selected Tax Reform and School Finance Proposals on the Equalizing Tendencies of State Aid to Michigan Public School Districts

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THE EFFECTS OF SELECTED TAX REFORM AND SCHOOL FINANCE PROPOSALS ON THE EQUALIZING TENDENCIES OF STATE AID TO MICHIGAN PUBLIC SCHOOL DISTRICTS

A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

by

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ABSTRACT

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by

Dorothy Hildebrand

Chairperson: Lyndon G. Furst, Ed.D.

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

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Department of Education

Title: THE EFFECTS OF SELECTED TAX REFORM AND SCHOOL FINANCE PROPOSALS ON THE EQUALIZING TENDENCIES OF STATE AID TO MICHIGAN PUBLIC SCHOOL DISTRICTS

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Problem

The purpose of this study was to determine the effects selected tax reform and school finance proposals would have on the equalizing tendencies of state aid to Michigan school districts. The study focused on nine finance revisions as follows: The Tisch proposal which would make 50 percent cuts in all real property values; the Siljander proposal which would make 60 percent cuts in the value of some classifications of real property; two variations of the Tisch and Siljander proposals

which would specify even larger reductions in property values than the original proposals; two variations of the Siljander proposal which would place ceilings on the amount of eligible state aid; and three alternative proposals which would not affect property values but would call for slight dollar increases in the state aid guarantee formula and/or removal of any designated mill-ceiling on state aid.

Data Collection, Methods, and Procedures

Data were collected for 530 school districts representing 99.8 percent of all public school students in grades K-12 in the State of Michigan for the 1977-78 school year. Included for each school district was the tax rate and local per-pupil revenues; the total number of pupils; the state equalized valuations (S.E.V.) per pupil for each political subdivision (township, village, city) within each school district; and the amount of per-pupil state aid (apportionment) paid to each school district. Additionally, the amount of assessed property values by property classification for each of 1,783 political subdivisions in the State of Michigan for 1977 was acquired.

The data collected for school systems and the data concerning property valuations were combined to reflect the property classifications within each school district. Subsequently, a computer simulation was

performed applying each of nine finance revision schemes to the 1977-78 data.

The relationship between state equalized valuations of property and state aid per pupil was determined by computing a Pearson product-moment-correlation coefficient for the 1977-78 data and each of the nine proposals being investigated to determine equalizing tendencies. A test of the difference between correlation coefficients from two independent samples was performed to determine statistical significance of each analysis compared to 1977-78 data. A power analysis of each proposal was performed to determine effect size and practical significance.

Major Findings

The Tisch and Siljander proposals would significantly reduce the equalizing effects of state aid to Michigan schools. Two variations of the Siljander proposal which specified a ceiling on the amount of eligible state aid were not significantly different from the 1977-78 finance method and could be substituted without changing the equalizing effects of state aid. At the same time, property tax reduction could be achieved.

No improvement in the equalizing effects of state aid to Michigan schools would be realized by adoption of any of the nine finance revision plans analyzed.

Conclusions

Plans to reduce property taxes and make up for lost revenues by state sources decrease the equalizing effects of state aid except that shifts away from the property tax to other revenues can be carried out without damage to equalization if there is a ceiling on the amount of state aid permitted to the local school district. It appears that the larger the reduction in assessed valuations, the more damage that is done insofar as equalizing effects of state aid are concerned when the state makes up for lost revenues.

Slight increases in the amount of state aid guaranteed in an equal yield formula does not improve equalization. Removing the ceiling on the number of mills eligible for state aid in a guaranteed equal yield formula does not result in improved equalizing tendencies of state aid.

The utilization of computer simulation is a valuable tool in decision making.

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CHAPTER I

INTRODUCTION

On Tuesday, June 10, 1978, California voters triggered a "tax-quake" felt across the nation (Time, June 19, 1978, p. 13). Through an initiative entitled Proposition Thirteen, voters bypassed elected officials and amended the State Constitution by a two-to-one margin. Through this amendment, property taxes were rolled back 57 percent, and barriers were erected to prevent major increases in state and local tax levies for years to come (U. S. News & World Report, June 19, 1978, p. 17).

In spite of grim predictions of closed schools and libraries, threats of mass layoffs, reduced fire and police protection, and abandonment of the old and the poor, the "tax rebellion" grew. This citizens' movement was described as a "tidal wave of tax revolt" and "the new gut issue in American politics" (Newsweek, June 19, 1978, p. 20). Targets of the taxpayers' anger were state and local governments and spiraling property taxes which had soared as much as 300 percent in one year causing homeowners to fear loss of their homes (Nation's Business, July, 1978, pp. 21-22).

The tax rebellion did not originate in California, however. Some Oregon schools were closed during the 1977-78 school year when voters refused to approve tax requests. Also during the 1977-78 school year, as many as forty-four Ohio schools claimed bankruptcy and asked state permission to close until the next fiscal year (Newsweek, October 31, 1977, p. 111).

> For nearly a year, witnesses from school districts across the state have been testifying in county court arguing that as long as schools depend on the whims of local taxpayers, the state cannot guarantee--as its constitution requires--equal educational opportunity for all school children. Many of the experts have recommended that school money be raised through sales or income taxes that are not fixed by local votes (p. 111).

In Louisiana the owner of a $50,000 home already pays no tax because of a drastic constitutional tax curb while in Illinois the following was reported:

> Seventy percent of the electorate--more than has voted in any Presidential election--came to the polls and defeated a school-district tax hike, a typical reaction against Illinois property taxes that are expected to reach five times their 1970 rate by 1980 (Newsweek, June 19, 1978, p. 28).

Some attribute the public's resistance to the use of property taxes for schools to the fact that "faith in public education is at a low ebb" (Maeroff, 1978, p. 379). Complaints such as "the more money they spend on schools the worse the schools get," and "instead of teaching remedial reading, they teach backpacking or other craftsy things," only serve to increase the impetus for property tax reform (Time, June 19, 1979, p. 20).

> The difficulties in getting proper financing for the schools are inextricably bound up with some of the most pressing issues of the day.
>
> Desegregation, the closing of neighborhood schools suffering from falling enrollments, and the program mandates of state and federal governments all figure prominently in the public's resistance to paying more for schools (Maeroff, 1978).

Quick to capitalize on the new public attitude, tax propositions were placed on the November 1978 ballots in twenty-six states. In Michigan three proposals to amend the constitution with respect to taxes were presented to the voters. These amendments concerned the financing of education, the taxation of property, and the total state and local tax burden as follows:

The Voucher Plan would totally change the method of financing education in Michigan by prohibiting the levy of property taxes for educational purposes and by requiring the Legislature to establish a program of general state taxation to support elementary and secondary education. All students would receive "vouchers" which they could use at the public or private schools of their choice.

The Tisch Proposal was a plan paralleling the California Proposition Thirteen inasmuch as it called for a sharp roll-back in property taxes. Authored by Robert Tisch, drain commissioner of Shiawassee County, this proposal would have reduced the maximum constitutional allowable property tax base from 50 percent to 25 percent of true cash value. This proposal would have also limited

increases in property assessments to no more than 2.5 percent per year and would have limited the state income tax rate to 5.6 percent compared to the present 4.6 percent. The Tisch Proposal did not ask for tax relief, rather one could argue that the intent was a tax shift since provisions were included for revenue make-up (Gast, 1978).

The Headlee Tax Limitation Proposal dealt with the magnitude of state and local taxes; i.e., the total amount of state and local taxes that can be collected from the public is limited to a fixed proportion of the Michigan personal income. As personal income increases, tax revenues can increase. This limitation does not include the value of new construction or improvements, and assessments on an individual piece of property are not limited--rather it is the taxing unit such as the township or village that is limited. The Headlee plan also requires the state to pay the cost of any new mandated programs and requires that future bond obligations be approved by the electors.

Much confusion existed among the Michigan voters as to which of the three constitutional amendments, if any, would result in the desired economic relief or what unexpected, undesirable results might occur. Confusion also existed as to what would happen if all three proposals should pass (Gast, 1978).

Nevertheless, on November 7, 1978, voters in

Michigan and throughout the nation overwhelmingly approved measures that called for holding the line on government spending and limited future tax increases while flatly rejecting more radical schemes. In Michigan, the Headlee Tax Amendment passed by a close margin, the Voucher Plan was defeated by a strong 3 to 1 margin, and the Tisch proposal lost by a 3 to 2 margin. Michigan residents are not expected to feel any immediate effects of this amendment since taxes are not reduced and state spending is limited to its present percentage of state personal income, about 9.5 percent (Detroit Free Press, November 9, 1978, p. 1).

The final vote was barely in before disappointed individuals and special interest groups began to complain that the vote had been unfairly influenced by large expenditures made by the Michigan Education Association in the last days preceding the election. Plans were again being formulated to present tax reforms for the 1980 election (Herald-Palladium, November 7, 1978).

In April 1978 Mark D. Siljander, State Representative of the 42nd District in Michigan, introduced a resolution to the Legislature calling for an amendment to the state constitution (Siljander, 1978). The highlights of Siljander's resolution are as follows:

1. Reduce property taxes of residential and agricultural and timber-cutover properties by 60 percent. (This represents a change from assessing property at 50 percent of true cash value to 20 percent of true cash value. All

other property classifications remain at 50 percent).

2. Limit assessment increases for all property taxes to 7 percent per year.

3. Equalize property by classification to eliminate current inequities.

4. Guarantee the State will make up losses to local governments and school districts. Difference to be made up from the income tax and lottery monies.

5. Have a local control provision; even though the State is required to make up the difference, local people will still have control over how to spend their monies.

6. Guarantee a minimum amount of state aid per pupil and end forced reliance on property taxes with resultant shift to local costs.

7. Give senior citizens and veterans tax breaks.

Siljander's constitutional amendment was presented to the legislature, not the voters; and final action was not taken. Nevertheless, as with the other tax revision proposals, the Siljander amendment can be considered for adoption and implementation in the future.

Statement of the Problem

The Headlee Amendment passed in November 1978 merely maintains the status quo without tax relief. Inasmuch as Michigan taxpayers are already facing problems such as inflation, reduction in pupil enrollment in schools, threat of recession, and the present heavy tax burden, it is expected that proposals such as the Tisch amendment and/or the Siljander amendment will reappear. There is no information available as to how

the Michigan system of equalization for school districts would be affected if a proposal such as the Tisch or Siljander amendment should be approved in the future, nor is there information available as to the possible effects of a change in the present formula for state aid. There is no information available as tc the probabilities of jeopardizing the gains which have already been made in eliminating the fiscal disparities among school districts as to wealth. There is no plan to correct any inequities in funding which could occur with the passage of one of these proposals.

Purpose of the Study

The purpose of this study was to determine the effects selected tax reform and school finance proposals would have on the equalizing tendencies of state aid to Michigan School districts. In particular, this study focused on the various changes which school districts would experience if any of the following finance revision proposals should be adopted:

1. The Tisch proposal which would make an across-the-board 50 percent cut in all real property valuations.

2. The Siljander proposal which would make 60 percent cuts in some classifications of real property valuations.

3. Variations in the Tisch and Siljander

proposals which would specify even larger reductions in property valuations than the original proposals.

4. Two variations of the Siljander proposal which would place ceilings on the amount of eligible state aid.

5. Changes in the state aid formula to include slight dollar increases in the formula guarantee, and/or removal of any designated mill-ceiling.

Importance of the Study

It would be helpful to decision makers to have advance information with regard to any possible changes in school finance in Michigan. In school finance there are two kinds of equity: equity for the student and equity for the taxpayer. Reduction in property taxes would be an immediate and welcome relief to taxpayers; but, if the adoption of an alternative plan of school finance were to create new and, perhaps, serious and unexpected problems, possibly negating the progress already made toward equalization of educational opportunity, voters and legislators ought to have this information before being called upon to choose from among the alternatives avilable.

The approval of the Headlee tax limitation in November 1978 does not preclude the introduction of new tax reforms in the future. William H. Shaker (1978), founder of Taxpayers United who authored the Headlee Amendment, has stated that shifting the funding of

education from the property tax to other revenue sources would be compatible with the Headlee Amendment. However, such a shift would require voter approval under this amendment (p. 25). On the other hand, removal of the ceiling on the present equal-yield formula may be seen as a less radical alternative. The results of this study are seen as providing a helpful perspective with regard to the proposed tax reforms which may be considered in the State of Michigan in the future.

Theoretical Framework

Educational finance in the United States is not limited to the issue of how the necessary funds are to be collected--whether the money should be generated by property tax, sales tax, income tax, or some other method. Also at issue is how school funds are to be allocated to each school district within each state so as to assure that each child has an equal opportunity to be educated.

A universally accepted definition of "equal educational opportunity" does not exist. Rather, this concept has differing legal, financial, and philosophical definitions. A major contribution to the philosophical thinking about educational equality was undertaken in an extensive study by Wise (1968). His nine definitions presented here in condensed form are based on allocation of resources:

The Negative Definition asserts only that the nature of a student's education should not depend upon where he lives within a state and what his parents' circumstances are. It does not specify the conditions of equality.

The Full-Opportunity Definition represents an ideal standard for equal opportunity. Every person is to be given full opportunity to develop his abilities to their limit. The fatal shortcoming is the limited educational resources which result in the impossibility of realization.

The Foundation Definition stipulates a satisfactory minimum offering, expressed in dollars to be spent, which shall be guaranteed to every pupil. When a locality cannot supply that minimum offering at the state-mandated tax rate, the state makes up the deficiency.

The Minimum Attainment Definition provides that resources shall be allocated to every student until he reaches a specified level of achievement.

The Leveling Definition asserts that resources should be allocated in inverse proportion to students' ability. Based on the assumption that students should leave school with an equal chance of success, education is designed to compensate for the effect of cultural deprivation--termed "compensatory education."

The Competition Definition asserts that more able students deserve more education--more access to society's scarce educational resources.

The Equal-Dollars-Per-Pupil Definition assumes that there is no reason for society to grant more to one individual than to another. Major shortcoming--it fails to take into account price-level differences and the effects of school size. To offer students of different ability similar amounts of resources as measured in dollars may, in fact, be to treat them unequally.

The Classification Definition calls for a categorization of students on the basis of ability and interests (or creativity or condition, such as "blind"). This plan is premised on the general ideal of equal treatment of equals. No simple way to determine equality among classes is identified.

> The Maximum-Variance-Ratio Definition might necessitate the reallocation of a large percentage of current educational expenditures and curb local initiative. It might require that the maximum variation in average per-pupil expenditure be no more than two to one, or one-and-a-half to one, or one-and-a-third to one. Variation can be justified, to a certain degree, as an accommodation to price-level differences and differences in the economics of scale. (pp. 143-159)

Wise was concerned by the wide disparity in financing found in the nation's schools. He argues that school financing disparity might violate equal-protection principles, for "once the state undertook 'something,' it must be made available equally" (p. 187).

Levin's (1974) concept of equal educational opportunity is seen as an equal start for all children in the race of life with the outcomes depending on each individual's own efforts. Again, in this plan, the focal concern is the allocation of public funds. Levin advocates a statewide educational finance plan that would provide a compensatory differential for the disadvantaged (p. 27).

James Coleman (1974) sees the mastery of basic competencies, or survival skills such as basic communication and problem solving, as the main purpose of education, and that educational opportunity is unequal unless it serves that purpose for all learners. Coleman's emphasis is on "effects of schooling" rather than school resource imputs (pp. 16-25).

The subject of "equal educational opportunity"

has been the subject of court litigation for many years. In 1896 the Supreme Court ruled that "separate but equal" facilities were just (Hudgins, 1970, p. 15). Fifty-eight years later, the Court reversed itself and said that separate educational facilities were "inherently unequal" and remedies must be framed with "all deliberate speed" to end segregation (Alexander, Corns, and McCann, 1969, p. 645).

In 1971, in another landmark decision, the California State Supreme Court ruled in Serrano v. Priest that the California school finance system was unconstitutional because under that system the quality of a child's education depended upon the wealth of his parents or on the wealth of the district in which he lived. Additional court decisions concerning Serrano in 1974 and 1976 affirmed that school expenditures cannot be based upon taxable wealth (Pincus, 1977, p. 174). As to remedy, the court suggested a choice of six "workable, practical, and feasible" methods:

1. Full state funding, with the imposition of a state-wide property tax;

2. Consolidation of the present 1,067 (California) school districts into about five hundred districts, with boundary realignments to equalize assessed valuations of real property among all school districts;

3. Retention of the present school district boundaries but the removal of commercial and industrial property from local taxation for school purposes and taxation of such property at the state level.

4. School district power equalizing, which has as its essential ingredient the concept that school districts could choose to spend at different levels but for each level of expenditure chosen, the tax effort would be the same for each school district choosing such level whether it be a high-wealth or a low-wealth district;

5. Vouchers; and

6. Some combination of two or more of the above (Phelps & Smith, 1977, p. 22).

The Serrano decision has important implications for Michigan as well as all other states who are striving to provide an equitable finance system for education.

The interpretation the courts give concerning what is and what is not equal educational opportunity has had far reaching effects in every aspect of school administration. In fact, Kurland (1968) believes that courts today are making too many decisions that ought to be made by the legislature:

> My thesis, then, is an old one. The society that relies on its judiciary for the resolution of its fundamental social and economic problems has doomed itself to failure. (p. 51)

In 1973 Michigan adopted a state/local sharing concept known as the "equal yield formula" in an attempt to equalize revenues between rich and poor schools. This concept provided that school districts should receive equal dollars per pupil for equal millage effort (Phelps, 1976, p. 12). Schools are financed by locally levied property taxes, a portion of which are voted by the property owners and a portion which is paid by state aid--with only a small amount from federal funds.

The state's share of total Michigan school costs in 1972-73 was about 45.2 percent and the state's share had decreased to about 42.5 by 1975-76. At the same time, the local taxpayer's share had increased from 49.8 percent in 1972-73 to about 53 percent in 1975-76. Federal aid made up the small difference (Crim, 1976, p. 31).

In assessing the results of the "equal yield" formula in Michigan after four years in operation, progress had been reported in striving for the goal of equalization, but some disparities still existed (Crim, 1976, p. 31). Barikor (1976) confirmed that state direct aid had a significant equalizing effect while federal funds had no equalizing effects.

The issues facing financial planners and voters, therefore, include not only the method or methods by which sufficient funds may be collected, but how those funds will be allocated to provide necessary and desired services while striving for the sometimes undefined or poorly understood goal of "equal educational opportunity."

Delimitations

This study was delimited first to a consideration of the following finance-revision proposals which were present during 1978 in Michigan, and which might possibly reappear, to several variations of those proposals, and to changes in the state-aid formula:

First, the Tisch proposal which called for an across-the-board cut in property taxes by 50 percent.

Real and personal property, under this plan, would be assessed at 25 percent of true cash value. In addition, the Tisch proposal would permit the state to increase income taxes by 1 percent and, with voter approval, would permit a second 1 percent income hike to support local schools (Herald-Palladium, July 10, 1978, p. 1).

Second, the Siljander proposal which (a) called for reduction of property taxes by 60 percent for some classifications of property; (b) limited assessment increases for all property taxes by 7 percent per year; (c) equalized property by classification to eliminate current inequities; (d) guaranteed that the state would make up losses to local government and school districts from income tax and lottery monies; (e) promised a local control provision; and (f) guaranteed a minimum amount of state aid per pupil (Dowagiac Daily News, April 5, 1978).

Third, changes in the state aid formula including slight dollar increases in the formula guarantee and/or removal of any designated mill-ceiling.

This study was further delimited to an analysis of the equalization impact these proposals (and variations thereof) would have on the state as a whole, and the 530 Michigan K-12 school districts in particular. Neither private schools nor post-secondary education was included in this study. The 530 school districts studied constitute 99.8 percent of the state aid membership in Michigan. The remaining .2 percent of the students

receiving state aid are in elementary school districts which are not included in the Michigan Department of Education Bulletin 1012--a publication which reports public school financial data--and these elementary districts were therefore excluded from the study.

This study is limited to school financing for general fund expenditures for current operating and instructional purposes and does not include capital outlay.

The Headlee Amendment was not included as part of this study since it would not change the 1978 method of property taxation and since the Legislature had not yet defined its implementation.

Definitions

The following definitions for specialized terminology were used in this study:

Categoricals: State funding by category to assist districts with special needs. The eleven major categoricals may be divided into two groups: (1) Special District Needs--Intermediate School District; media centers; transportation; municipal overburden; capital outlay; and (2) Special Pupil Needs--special education; vocational education; compensatory education; reading support; community schools; alternative juvenile programs.

Circuit Breaker Concept: Tax relief provided citizens who pay more than a certain percentage of their

income in property taxes.

Equalization: The process of compensating for differences in order to make equal; for example, the process of compensating for differences in school districts' ability to support education in order to achieve student equity and taxpayer equity (Goertz, Moskowitz, and Sinkin, 1978, p. 59).

Fiscal Capacity: The total economic resources available to a government for tax purposes (p. 60).

Fiscal Neutrality: A court-defined equity standard in school finance which states that differences in expenditures per pupil cannot be related to local school district wealth.

Local Tax Revenue: The amount of property taxes collected based on the total voted and nonvoted mills levied.

Mill: One-thousandth (.001) of $1 or the amount of tax required to produce $1 per $1,000 of state equalized valuation (S.E.V.).

Millage: The total number of mills levied in a school district for tax purposes.

Progressive Tax: A tax that increases proportionately more than income as the income level of the taxpayer increases. A high-income taxpayer will pay a larger percent of his income toward this tax than a low-income taxpayer.

Regressive Tax: A tax which results in a low-

income taxpayer paying a larger percent of his income in taxes than a high-income taxpayer.

State Aid: Revenues appropriated by the State out of state funds based on student membership.

State Equalized Valuation (S.E.V.): The measure or amount of property value or tax base as calculated by the State Tax Commission. The Michigan Constitution presently limits the tax levy on property to no more than 50 percent of true cash value. S.E.V. is the single tax base not only for school districts, but for all other local tax units of government--county, city, township, or village.

S.E.V. per Pupil: The state equalized valuation divided by the total number of students enrolled in the district on the fourth Friday after Labor Day.

$$\frac{\text{Total S.E.V. of the District}}{\text{Total No. of students in District/4th Friday}} = \text{S.E.V. per Pupil}$$

Simulation: The process of conducting experiments on a model of a system in lieu of either (1) direct experimentation with the system itself; or (2) direct analytical solution of some problem associated with the system (Mize and Cox, 1968, p. 1). The purpose of simulation is to understand the behavior of the system or to evaluate various strategies (within the limits imposed by a criterion or set of criteria) for the operation of the system (Shannon, 1975, p. 2).

Summary and Organization of the Study

In chapter I an introduction to the tax-revision movement was given, and a statement was made concerning the desirability and importance of advance information prior to the implementation of any possible change in school finance which might have an effect on the equalizing tendencies of state aid to Michigan school districts. The theoretical framework for "equal educational opportunity" was examined, delimitations were stated, and definitions of specialized terminology for this study were presented.

Chapter II presents a review of the literature concerning the historical background of school finance, studies in equalization research and school finance, the methodology used in studying equalization, and the use of simulation.

Chapter III presents the design of the study including the Michigan system of financing education. The finance-revision proposals used in this study are explained, and the data-collection process along with the analysis which was done are described in some detail.

Chapter IV is a presentation of the data and the results of the statistical procedures. In chapter V conclusions are drawn from the data presented and recommendations are made for further study.

CHAPTER II

REVIEW OF THE LITERATURE

The first section of chapter II presents a brief historical look at the foundations of school finance in the United States. Secondly, research in the area of equalization of school funds at the state level is examined, and the methodology used to study equalizing efforts is outlined. Finally, support is given for the use of simulation studies in tax reform.

Brief Historical Background of School Finance

An examination of the historical calendar of the development of school finance in the United States over the last 200 years revealed progress through three important stages:

> A privilege under private auspices for those who could afford it; a privilege for all at public expense, regardless of ability to afford it; a right for all that must be provided equally without discrimination based upon race, sex, intellectual ability, or wealth of school districts. (Wynn, DeYoung, Wynn, 1977, p. 290).

The first efforts to impose general and direct taxation for the support of schools in the United States began about 1825. Permissive taxation of those who consented had been the practice, and the attempt to pool resources to provide free public education through

compulsory district taxation was not accepted without a struggle (Cubberly, 1929, p. 101).

> Taxes on all property were mandated, regardless of consent and regardless of whether the property owners had children in school. The notion that one could be taxed to support the education of other people's children, although commonly accepted today, was a revolutionary doctrine at the time, both here and abroad (Wynn, DeYoung, Wynn, 1977, p. 290).

During the nineteenth century "no integrated plans of school finance were developed" and "no conceptual theory of school finance was developed," (Johns and Morphet, 1975, p. 205). The concept of state school support was first developed and published by Cubberly in 1905. As the "father of school finance," his theories have dominated the twentieth century thinking on school funding and are still considered valid in 1979. With regard to equalization of educational opportunity, Cubberly (1905) stated:

> Theoretically all the children of the state are equally important and are entitled to have the same advantages; practically this can never be quite true. The duty of the state is . . . to equalize the advantages to all as nearly as can be done with the resources at hand. (p. 17)
>
> . . . Any attempt at the equalization of the opportunities for education, much less any attempt at equalizing burdens, is clearly impossible under a system of exclusively local taxation. (p. 54)

Cubberly's solution was that a state school tax would best equalize disparities, and the best measure for distributing funds would be the number of teachers employed (Johns, 1971, p. 5).

In the two decades which followed Cubberly, other important theorists appeared who have had a profound effect on the shaping of school finance policies. Updegraff designed the first percentage equalizing plan in 1921. Under this plan, each school district chose the amount it wished to spend. The state then paid a certain percentage of those costs depending on the relative wealth of the district and the amount of money that the state was willing to commit to the aid program (Harrison, 1976, p. 10). Updegraff attempted to combine the concepts of equalization of educational opportunity and reward for effort within the same formula (Johns, Alexander, and Jordan, 1972, p. 7).

In 1923, Strayer and Haig developed one of the first "equalizing aid" formulas. Their plan, still used today, called for a determination of the following:

1. The minimum cost per student necessary for an adequate education is estimated for the state.
2. The tax rate needed by the richest school system in the state to meet this cost is estimated.
3. All school systems within the state are required to tax at this rate to be eligible for any state aid.
4. The difference between the revenues that each school system can generate with this tax rate, and the revenues necessary to meet the minimum cost for an adequate education as determined by the state is computed. . . . The state provides aid to make up the difference in revenues, so each school district has the same minimum foundation upon which it can build its educational program. (Johns, 1971, p. 9)

The Strayer-Haig plan was still found to be emphasized in thirty-three states in a study done by Thomas L. Johns in 1971-72 (Johns, 1972, p. 5).

In 1924, one of Strayer's students, Paul R. Mort, published a doctoral dissertation which advanced a concept of a satisfactory "minimum state-assured program" (Johns and Morphet, 1975, p. 213). His plan called for

> . . . Objective, equitable measures of educational need that could be used by a state legislature in determining the amount of state appropriation for equalization. He also wished his measure to be used by officials in the state department of education for apportioning state school funds with a minimum of state control. (p. 213)

Mort used complicated statistical regression equations to compute the number of "typical" teachers employed and finally the amount of state appropriations necessary for equalization. Many foundation programs today still use some form of the "weighted teacher" or "weighted pupil" measure particularly with respect to vocational and/or special education programs. Mort also proposed a concept of compensatory education for the disadvantaged, a concept commonly found in modern finance formulas (Johns and Morphet, 1975, pp. 213-214).

In 1930 Morrison envisioned full-funding by the state and federal governments. In his plan all local school districts would be eliminated and the state itself would become both the unit for taxation for schools and the administrator of the public schools. This was not a popular idea in Morrison's time since

local self-government was deemed almost equivalent to democracy itself (Johns, Alexander, Jordan, 1972, p. 13). Hawaii is the only state to date to adopt this plan (Harrison, 1976, p. 11).

The basic finance models described thus far were developed prior to or about 1930. Harrison (1976) summarized and classified the finance schemes which evolved through the years. Basically, there are three nonequalizing formulas all of which allocate state aid without regard to a locality's wealth or expenditures: (1) uniform flat grants provide an equal amount of aid per student; (2) variable flat grants allocate more aid to areas with higher costs; and (3) complete state-federal funding is presently restricted to Hawaii (pp. 11, 47).

Again there are three basic types of equalizing aid plans which consider local taxpaying ability usually in inverse proportion to assessed property per student and directly or indirectly take into consideration local tax rates and expenditures: (1) Strayer-Haig-Mort or minimum foundation plans guarantee each local school system a minimum level of per-student expenditures at a rate no higher than the richest school in the state to obtain the same revenues; (2) the percentage equalizing plan is based on local per-student expenditures multiplied by a ratio of local valuations to the statewide average; and (3) the guaranteed valuation or tax yield distributes aid as a function of local tax rates

multiplied by the difference between the statewide average valuation and the local valuation (pp. 47-48).

From 1930-1970 education experienced tremendous growth in terms of money expended, number of students enrolled, and the type of services rendered. According to Johns, Alexander, and Jordan (1972), total expenditures for public schools in the United States for 1930-1970 increased from $2,307,000,000 to $39,489,000,000, an increase of 1,612 percent. Converted into purchasing power of 1969 dollars, this increase in expenditure would represent an increase of 700 percent. For the same forty-year period, the average daily attendance increased 99 percent and the average expenditure per pupil in terms of 1969 dollars increased 302 percent--from $233 to $936 per pupil (pp. 13-19).

Other factors identified by Johns and his associates as influencing education during the forty-year period from 1930 to 1970 were the industrialization of the nation; the mobility which resulted from the expanded availability of the automobile; the Great Depression and the opposition to property taxes during a time when many taxpayers had no income; World War II; accelerated technology; the "baby boom"; and increased ownership of property and prosperity for much of the population (pp. 23-25).

The principle of free public education for all was firmly established by the middle of the twentieth century, and attention focused on questions of equity

for students as well as the taxpayer. Whereas inequality of education was first seen as a racial problem with integration of the schools a possible solution, inequality of education was later seen as an additional problem of wealth with an imbalance of funding for rich and poor schools. In 1972 McKenna reported that assessed valuation per pupil in California ranged from $103 to $952,156, and the district with the lower assessed valuation could never hope to raise an amount equal to the district with the higher assessed valuation no matter how high a tax rate was imposed (McKenna, 1972, pp. 171-173).

The increased discontent with property taxes was supported by the California Supreme Court in its 1971 decision in Serrano v. Priest wherein the court ruled that a child's education was a fundamental right which could not depend on the wealth of his parents or the accident of his residence. The Court maintained that as a result of the California financing scheme, some parents were "required to pay a higher tax rate than taxpayers in many other school districts in order to obtain for their children the same or lesser educational opportunities" (Alexander, Corns, and McCann, 1975, p. 53). Furthermore, said the Court, there was no compelling reason for the then existing disparities in educational opportunity (pp. 51-65). The search for an equitable financing plan in California was thus mandated by the Court and has had implications for other states attempting to provide equal

educational opportunity to its students.

During the 1970s, twenty-five states enacted school finance reforms (Odden, 1978b, p. vii). The common denominator of these new programs was the effort to implement formulas which would distribute more state aid to elementary and secondary school districts low in property wealth and therefore low in ability to provide educational programs on a par with wealthier districts.

Odden (1978b) identified other characteristics of the reforms enacted in the 1970s as increased attention to special education, compensatory education, or bilingual-bicultural programs; recognition of the fiscal problems of many central city schools as well as poor, isolated rural areas--sparcity and density factors; increasing interest in an enactment of income factors as measures of wealth; cost-of-education adjustments to state aid; and finally, the use of tax and expenditure controls to stabilize property tax rates (pp. vii-ix).

As 1980 nears, the problems facing educators and the nation include the threat of a recession, growing inflation, and declining enrollments. The search for improved ways to finance education in the face of these challenges continues.

Equalization and School Finance Research

Research of primary interest as background for this study concerns the impact school funding plans may have had in providing a remedy for "historical

inequities" (Odden, 1978a, p. 31) and relationships between school finance and state/local tax policies (p. 37) in equalizing educational opportunity.

Investigative studies of the 1960s identified determinants of local school district tax and expenditure policies to be socioeconomic factors such as property wealth per pupil, median family income, the percent unemployed, etc. (Miner, 1963; Hickrod and Sabulao, 1969; Hickrod, 1971; Sacks, Ranney and Andrew, 1972). In addition, in 1968 the United States Office of Education funded the first comprehensive national study of school finance since 1933 by underwriting the National Educational Finance Project for about $2,000,000. As a result, five volumes were produced analyzing the financing of education in all fifty states. One important conclusion was:

> If a state finances its schools from a combination of state and local funds, it will achieve greater financial equalization from a given amount of state revenue if it utilizes the equalization plan of state financing and maximizes the required local effort within the legal tax limit of school districts which is included as a part of the total program equalized. (National Education Finance project, Volume 5, p. 251)

Scholars have made important contributions to the pool of knowledge about equalizing tendencies of various formulae within states. Hempstead (1970) computed projected costs to the State of Illinois of ten alternative state aid formulae. Correlations were then used between state aid per student and assessed valuation per student

to compare equalization strengths of these ten formulae. Hempstead found that equalization is highly dependent on wealth as measured by local property valuations of a school district in Illinois. He noted that if another measure of wealth were used such as personal income, sales tax paid, and so forth, the results would have undoubtedly been different. Using assessed valuations, Hempstead found that the Strayer-Haig formulae produced the best results in terms of equalization within rural districts as opposed to urban districts suggesting that more monies than just equalization aid might be needed for urban schools.

Perea (1972) analyzed the equalization effects of twenty selected New Mexico school fund distributions relative to a fiscal capacity index of assessed valuation for each school district divided by the average daily membership during 1968-69 and 1969-70. During the 1968-69 school year a "weighted pupil" formula was in effect, but during the 1969-70 school year the legislature changed the formula to a "staffing" index. State aid distributions for both target years were found to be anti-equalizing to a statistically significant degree, with the "staffing" formula slightly less anti-equalizing. In contrast, Total Federal Revenue for the two target years revealed that Total Federal Funds had an equalizing effect which appeared somewhat inverse to the Total State distributions (Perea, 1972, p. 90). Perea recommended that an equalization dimension be incorporated into the

state aid formula which might take into account the fiscal capacity of each district and be based upon the "equalization principle." Furthermore, Perea charged that at worst state distributions should be non-equalizing rather than anti-equalizing, and he recommended that restructuring steps be taken to eliminate the anti-equalizing effects (p. 90).

Yang (1975) studied the degree to which school revenue equity had been improved by changing the state aid funding systems of Michigan, Illinois, and Kansas from foundation systems to power equalization systems in 1973. Although the new financing plans were to be phased in over a period of from three to four years, Yang's research sought to make a short-run analysis. Yang sought to measure two variables: permissible variance (a specific variation in level of expenditure per pupil) and fiscal neutrality. He used the magnitude of the coefficient of variance to determine the degree of improvement in revenue equity achieved through the new funding system. He also used the Gini Index and the Lorenz curve to investigate the disparity among school systems. Yang concluded that the three states did move toward various equity goals, including the goal of fiscal neutrality.

In another study conducted by Yang in 1976, he examined the relationship between operating tax rates and selected socioeconomic variables for Illinois school

districts. School districts were separately ranked by operating tax rates and then divided into four equal quartiles--low tax effort, low medium tax effort, high medium tax effort, and high effort. Discriminant analysis was used to construct profiles for each group. Yang's results confirmed the belief that differences in fiscal capacity and educational aspirations contributed to differences in local tax effort.

Yang found that the school districts in the lowest quartile, low tax effort group, had a higher assessed valuation per average daily attendance than the other groups. The low tax effort group also had lower educational attainment and a higher number of low-income families in spite of the fact that the assessed valuation was close to the higher tax effort groups. Yang also found that there was higher educational attainment, a higher percent of professionals, and higher average income in the high tax effort group. He concluded that there was a conflict in the ideals of local control and equality of educational opportunity, and it was apparently not possible to accomplish the two goals of Strayer-Haig simultaneously; namely, stimulate the tax district to tax and spend more and reduce disparities between school districts.

Harrison (1976) conducted a massive study of all fifty states and one hundred of the largest metropolitan areas in the United States to look at the effects various fiscal policy methods had on inequality. His quest was to

assess the relative effectiveness each method had in equalizing finances and to determine whether one means should have priority over the others, or if any should be de-emphasized.

Nine variables or funding policies were identified by Harrison: state aid, equalizing aid, federal aid, non-property taxes, full valuation, consolidation of school systems, independent school districts, removal of state ceilings on local property tax rates, and replacement of state ceilings on local debt (p. 37).

Harrison's findings indicated that state aid is typically the most reliable policy to reduce expenditure inequity. "Where there is little state aid, there is a lot of inequality" (p. 50). Harrison reported that the amount of aid available for distribution is a far more important factor shaping expenditure inequality than is the aid formula used to distribute the aid. In fact, he suggests that a statewide property tax might not be a bad idea (pp. 51-53).

The second most important policy affecting equality according to Harrison is full valuation of local property for tax assessments.

> Places with higher assessment ratios have far less variation in expenditures among local school systems. In fact, the average assessment ratio is one of the most important determinants of expenditure inequality. Where there is full valuation, there is consistently less inequality. Where there is fractional valuation, there is consistently more inequality. (p. 52)

> . . . Local governments can be encouraged, or compelled, to value property at full sales price, and to avoid the distorting effects of fractional valuation. (p. 54)

Thirdly, Harrison recommends school district consolidation as particularly valuable for removing extreme differences in expenditures:

> The reformer should also consider another tactic with respect to state aid. There is a negative correlation between the number of school systems in a state and the share of local school expenditures financed by state aid. . . . It may be that state officials feel more comfortable in dealing with countywide systems. Perhaps they feel they are more efficient, and therefore have greater claim on funding. . . . For whatever reasons, it may be that to increase state aid, a good tactic may be enforced consolidation. (p. 53-55)

Barikor (1976) conducted research concerning the equalizing effects of state and federal funds in Michigan's K-12 school districts. He sought to determine the degree to which equalizing funds had accomplished their purpose. Barikor's study included 581 school districts in Michigan at that time. Barikor used correlation techniques to compare the state equalized valuation (S.E.V.) with three categories of funds--state direct appropriations, redistributed federal funds, and direct federal aid. His findings substantiated that state direct aid had a significant equalizing effect while redistributed federal funds and federal direct funds had no equalizing effects on K-12 school districts in Michigan. Barikor found that for the year 1972-73 the correlation between the state direct appropriation and state equalized

valuation was -.920 which indicated a very strong equalizing effect (-1.0 would be perfect equalization). For the year 1973-74 the correlation was -.908; and for the year 1974-75 the correlation was -.816. The decreasing correlation coefficient from year to year might reflect increased property values with the accompanying reduction in state direct appropriation.

In 1976 Meek of the University of Michigan reported development of a prototype state model for funding public elementary and secondary school education. He called his federal-state-local partnership model "creative federalism" and conceptualized a design for "government interfaces." One of Meek's major recommendations was that the resources of the entire state should determine the quality of the student's education (fiscal neutrality) and less reliance should be placed upon the regressive local property tax as a source of educational revenue.

Beach (1977) addressed himself to a different perspective of the finance movement. He attempted to ascertain what trends were evolving from recent school finance reform efforts. Beach asked the chief school finance officer in forty-nine state departments of education to complete a questionnaire concerning whether or not a state school finance study committee was commissioned after 1971. Beach sought to determine the reasons why such committees were formed and what conclusions were reached. Of the forty-nine states solicited,

forty-one had in fact formed school finance study committees. Beach found that there was a trend toward statewide property tax; a trend toward improvements in local effort; a trend toward improved property tax administration; and a trend toward increased use of weighting by program and program-cost differentials. Beach also noted that there was a trend or movement toward fiscal neutrality.

Walker (1977) compared six alternative finance models for equalization of educational revenues using 1975-76 data for the public schools in Texas. He sought to ascertain the relative advantages of these six finance schemes and patterned his research design after one used by the National Education Finance Project (1969-1973). Walker ranked the 1,095 school districts in Texas and then selected fifty districts by systematic sample. Total revenue (state plus local) was held relatively constant for each of the six research models. The variances of total revenue per pupil in average daily attendance created by each finance model were compared for the fifty schools in the sample. The six finance models used were two types of flat grant plans, two different Strayer-Haig-Mort equalization models, a percentage equalization plan, and a district power equalization model. Walker's conclusions were that a district power equalization model was more equalizing than any other plan used in his study when applied to the disparate wealth of Texas

school districts.

Hickrod (1978) reported on the results of three annual evaluations of the 1973 reform in school funding in the State of Illinois. Although citing a number of limitations on the results of his study, he reported reduction in disparity between school district expenditure per pupil and progress in "moving up the low-spending unit districts and high school districts, but there appears to be no such progress for low-spending elementary districts" (P. 78).

Hickrod identified a number of variables that he described as "crucial" in assessing the 1973 Illinois finance reform plan. First, the simple unweighted pupil count which he referred to as "the warm body orientation" is used by most states in measuring school district wealth. If districts lose pupils they also lose state aid. Loses are not uniform throughout the state, and a school experiencing considerable loss of students would also experience considerable loss of aid. This would obviously affect "equalization" effects.

The second variable described by Hickrod concerned the number of pupils eligible for Title I benefits. This source of educational aid was named as

> . . . the most important aspect of Illinois aid to central-city school districts and it also delivers state funds into pockets of rural poverty, mostly in the extreme southern part of the state. (p. 65)

Linking a state definition of poverty children to the

federal definition of poverty resulted in unintended changes in state fund distribution according to Hickrod.

The third variable of importance in evaluating the 1973 Illinois finance reform was property valuations per pupil. Although this had been the traditional, accepted measurement of school district wealth in Illinois, Hickrod discussed the combination of property valuation and income used by some other states. Lack of annual income data has been advanced as a reason for failing to consider income as a factor in an aid formula in Illinois; however, Hickrod suggests that income-wealthy schools with sufficient political clout see the inclusion of an income factor in the general aid formula as threatening to them. Nevertheless, Hickrod cites factor analysis research in other states by Hanes and Jordan (1976) and Firestine (1976) which showed that the property valuation variable was not closely associated with either income or income-related variables (p. 67).

The fourth variable specified by Hickrod as possibly important to an analysis of the 1973 Illinois finance reform results was the local tax rate for operating purposes, a new factor in Illinois since 1973. Supposedly this tax rate represents "local effort" but Hickrod believed that "effort" cannot really be measured without also specifying "ability to pay" or "wealth." "If income is desirable in a wealth measurement, it is just as desirable in an effort measurement" (p. 70).

While suspending judgment until more data is available on tax rate change in Illinois, Hickrod noted that other research confirms such a relationship. Johns and Kimbrough (1968) reported that there was a positive relationship between income and tax effort with poorer districts exerting lower effort and richer districts exerting greater effort. This position has found support from other researchers as well (Alexander, 1975; Rasanond, 1976). The opposing point of view also has support.

> A district with a very limited tax base can raise relatively little revenue even at confiscatory tax rates, while a district with a large tax base can raise substantial amounts of revenues by levying a very modest tax rate. (National Educational Finance Project, Volume 5, 1971, p. 60)

Furthermore, Furst (1974) pointed out that districts with low assessed valuation may in many cases have greater financial needs than districts which are relatively wealthier. "Yet the poorer districts have less tax base from which it can derive funds to support its schools" (p. 13). Concurring with the position that poor school districts may be making greater "effort" without achieving results equal to wealthier schools are Cohen (1969) and McKenna (1972).

The question of how to determine the "wealth" of a school district to arrive at a means of equity for the taxpayer and the student is another dimension pursued by researchers. Carr (1977) explored the use of an alternative "wealth tax" source in lieu of

the personal income tax and could provide relief from real property tax while at the same time adequately funding education in the State of Florida. Carr proposed a "wealth" tax similar to that used in Europe whereby forms of wealth which would otherwise avoid taxation would be tapped. A wealth tax has never been used in the United States. This plan was said to be constitutionally legal in Florida, and Carr found that a 1 percent wealth tax over the total wealth of the State of Florida in 1974-75 would have produced enough revenue to adequately finance education and equal or surpass the national average educational expenditure level.

McMahon (1978) also developed a theme that inequality in expenditure per child and inequity for the taxpayer were aggravated by the narrow definition of wealth based only on property wealth that is used in most states to measure both local ability-to-pay and local effort. McMahon's proposed solution was to broaden the measures of wealth and effort to include human capital wealth (salary income) and financial wealth (interest income, dividend income, and capital gains). In addition:

> State aid based on equal 'effective tax rates' among districts at any given level of wealth . . . would be conducive to horizontal equity, or equal treatment of equals. (p. 85)

McMahon defines horizontal inequity as a situation where two taxpayers who have the same ability-to-pay as measured by their income and wealth, and who live in different school districts, pay widely different amounts

in school taxes. A broadened measure of wealth and use of the effective tax rate would target aid better to the low expenditure per pupil district which also tends to be low income, low ability-to-pay, and "who in fact are now making the largest effort" (p. 85). These low fiscal capacity districts are of major concern to McMahon since he points out that society must bear the costs later when education in these districts is inadequate. McMahon further maintains that the use of an income factor in the school aid formula as a part of the measure of well being or of effort can be considered wholly apart from the question of whether school districts should or do have the power to tax income (p. 87).

The role of the property tax use or nonuse in equalizing aid to public schools is by no means clear according to Harrison (1976) since some property-poor areas may be rich in personal wealth and be able to pay high taxes (pp. 4-7).

> Everyone dislikes the property tax until the alternatives are considered. Low-income taxpayers (and their representatives, especially labor unions) will not readily accept a value-added tax or a substantial increase in sales taxes to finance property tax relief, while upper-income taxpayers will be resistant to accept large increases in the income tax, particularly where rates are graduated. (Paul, 1975, p. 3)

Others point out that a major advantage of a tax on property is that it cannot be easily moved to escape taxation (Johns, Alexander, Jordan, 1972, p. 84).

Harold Groves (1973) suggests that property tax is

about proportional to income:

> A standing complaint against the property tax on housing is that it is highly regressive in distribution, but recent evidence and analysis have cast doubts on this conventional wisdom. . . . the new evidence poses the possibility that for income classes of a lifetime income, differences in burden over most of the income scale may pretty well average out. Of course, this is the very long run in which we are all dead. (Cited by Paul, 1975, p. 20)

Furthermore, many kinds of property are tax exempt with some types of exempt capital being owned primarily by those in upper-income brackets:

> All property owned by the following: federal, state and local governments; much owned by churches, private schools, and charitable organizations; considerable business inventory and equipment; in some states part of the value of homes generally or homes belonging to veterans, the elderly, or other groups; and in a few states public utility property and non-business tangible and intangible property tax. (Paul, 1975, p. 22)

Furthermore, it is the "inherently regressive nature of property assessing which turns an inherently proportional-to-progressive tax into a regressive one" (p. 20). The unequal treatment of equals can, therefore, be attributed in a great part to inequities in assessment of property (Johns, Alexander, and Jordan, 1972, p. 84).

Studies have also shown that the greater the non-residential component of the property tax base, the higher the school district expenditure levels. A high concentration of non-residential property will result in the citizens of that area paying proportionately less than taxpayers who live in a primarily residential school

district (Bowman, Wade, and Ladd, 1978, p. 32).

Only those revenue sources which can be legally and realistically generated by a governmental unit may be included in any plan for school finance. Local governments are reluctant to adopt progressive local income taxes for fear that businesses and residents may locate elsewhere; therefore, real property taxes are basically the only taxes collected locally (Harrison, 1976, pp. 6-7).

Individuals, institutions, and governments must all compete for limited resources in resolving their respective and common needs. Nevertheless, Harrison (1976) after studying all fifty states maintains that

> Places that stress nonproperty taxes and thus make relatively low use of property taxes, will achieve more wealth neutrality. (pp. 80-81)

It appears, therefore, that the relationship between school finance and state/local tax policies will remain controversial for some time.

> The new reform movement has two characteristics which distinguish it from previous efforts to introduce greater equity into school finance laws: the first is the reliance on the state court system and the appeal to state constitutions which commonly require the establishment of an educational system which is free and uniform; the second is the enlistment in the reform cause of a variety of actors, including . . . law professors, economists, political scientists, legislators, public interest attorneys, and activists whose concern is to provide equitable financing of schools for children from minority or improverished families. . . .
>
> Members of the 'new breed' of school finance experts differ from their predecessors both in their goals and in their heavy reliance on the courts as a route to obtaining more equitable

> revenue distribution systems. Nevertheless, they, like their predecessors, must rely on the political process for the implementation of their wishes. . . . State legislatures are still, as in the past, composed of individuals who are responsive to the interests of their constituents, and are subject to pressures applied by a variety of interest groups. (Thomas, 1978, pp. 3-5)

Methodology in Studying Equalization

The most common statistical procedure used to study equalization appears to have been the product moment correlation coefficient or the rank order correlation (Benson and Kelly, 1966; Hempstead, 1969; Furst, 1974), a procedure which rests on the assumption that equalization aid is distributed in a linear manner throughout the whole range of a wealth distribution. Hickrod (1978) believes the ease and speed of computer programs has probably contributed to the use of such correlation studies.

There is some evidence that when dealing with property-income factors in equalization, a curvilinear relationship exists:

> Up to the median property valuation, the relationship is linear, e.g., property-poor districts are income-poor districts and moderately rich property districts are also moderately rich income districts. However, above the median there is no meaningful relationship, e.g., very rich property districts may or may not be very rich income districts. (Hickrod and Hubbard, 1978, pp. 67-68)

Hickrod also advocated the use of curvilinear regression to measure deviation from perfect equality (Hickrod, 1972, pp. 22-26). On the other hand, Hempstead (1970) rejected the use of curvilinear regression and

found linear regression to be more accurate in measuring equalization strength, as did Furst (1974).

Question arises in the selection of a definition of "equality." As discussed in chapter I of this paper, educators and philosophers have not been able to agree on this issue, while the courts have ruled that equal educational opportunity has in some way been equated with equal dollars.

Research has advanced greatly with the availability and use of computers in recent years. Now it is possible to gather and use an entire population of data rather than just a sample. Nevertheless, the inherent problems with a study of any magnitude is probably best expressed by Hickrod (1978) when he described his evaluation of all 1,025 school districts in Illinois:

> The presence of over one thousand districts means the researcher is delivered over to the not-so-tender mercies of the 'computer jocks' for anything that is known at all. Contemplating the high probability of programming error in one's data will drive even strong men to drink. . . . There is a good chance that the over one thousand units of measurement do contain quite a number of highly deviant individual scores which will have all kinds of weird results on the researcher's descriptive and inferential statistics. (pp. 80-81)

Still another consideration is the selection of the best measure of "fiscal capacity" which is defined as "a measure of the fiscal bases which a taxing jurisdiction is taxing, or could tax, to raise revenue for public purposes" (Johns, Alexander, Jordan, 1972, p. 84). These measures include:

> Sales tax collections, per capita personal income, per household effective buying power, corporate income, per capita retail sales, per household retail sales, and per capita property valuation. (Advisory Commission on Intergovernmental Relations, 1962, p. 4)

Selection of a measure of capacity is sometimes restricted by the data available. Hickrod (1978) explained the problem as follows:

> Since Illinois has no annual income data by school district, people do look at you rather strangely when you explain that the federal census income data you are using are nine or ten years old. . . . Incredible as it may seem, the largest district in the state, Chicago, is not a part of the reporting system for certain kinds of data in the state. (p. 81)

In discussing the unavailability until recently of property valuation data in Illinois by classification such as residential, farm, commercial, and so forth, Hickrod continued:

> Such classified property valuation data are now available on a township basis for a small number of counties in Illinois. . . . even these new data will only be an approximation, since data translations from township to school district terms will require an assumption that these different valuations are evenly spread in a township, and we know that not to be true. (p. 69)

It has been pointed out that fiscal capacity as measured by assessed valuation is different than fiscal capacity as measured by personal income (Patterson, 1968, p. 85). While some states such as Kansas use a combination of property valuation and income as a measurement of school district wealth, this type of data is not available in Michigan. The ideal choice might be that described by Furst (1974):

> It would appear that in any study of the equalization effects of school aid programs, more than one measure of fiscal capacity should be used. (p. 20)

For a study in Michigan in 1979, data was available for assessed valuations of property. However, citizens in Michigan were asked to specify their school districts on the 1978 state income tax returns. Thus, it may be possible to obtain a variety of fiscal measures in the future as a result of this new reporting device.

The Use of Simulation

The use of simulation is appealing because it provides a laboratory for analysis of problems that often cannot be solved by any other means and allows experiment with systems that would otherwise be impossible or impractical (Meier, Newell, & Pazer, 1969, p. 1: Shannon, 1976, p. ix). Simulation models are frequently used by businessmen, economists, and educators in an effort to develop strategies for problem solving.

> It can be claimed with some validity that the story of man's progress in science and technology is actually the story of his success in the use of analogy and his progress in simulation. (Shapiro & Rogers, 1967, p. v).

The School Finance Equalization Study Workshop in Denver, Colorado, in March 1977 resulted in the development of a computer simulation to aid the South Dakota State Legislature in reforming the state school finance system (South Dakota Division of Education, 1977). The strengths and weaknesses of such a simulated program

may be evaluated before implementation.

Cox (1976) also using simulation reported results of three school finance alternatives and statewide property taxation for California school districts. Her analysis provided opportunity for examination of the advantages or disadvantages of each method prior to adoption. In fact, Cox's results showed that any of the alternatives studied left families "better off" while shifting the costs of education to industrial and commercial land users.

Toder (1975) used simulation techniques to examine gains and losses of different groups in the population if reform plans were to replace the then current funding in Massachusetts. An estimated equation was used in conjunction with data from the State of Massachusetts and welfare economic data and three reform plans: full state funding of public schools, power equalizing, and a modified percentage-equalization state aid plan that was law in Massachusetts at the time of the study. Toder found that variants of two reform plans were likely to reduce the economic welfare of almost all communities in the state. The results suggested that private school enrollment was not likely to be altered significantly by changes in public school expenditure.

An exploratory study conducted by Bell (1976) concluded that the use of micro-simulation was feasible to analyze the consequences of various tax assessment

approaches, particularly a state income tax, in the State of Washington. Simulation, therefore, appears to have been established as a legitimate method for analysis.

Summary

Chapter II began with a brief look at the historical background of educational finance in the United States including the problems facing the nation and educators in the 1970s. Contributions from the outstanding school finance theorists such as Cubberly, Strayer, Haig, Mort, Updegraff, and others were examined.

School finance research studies were examined to ascertain the kind of studies that have been conducted in the past, what the results were of these investigations, and what impact finance reforms may have had in correcting disparities in educational opportunities within various states. A review was made concerning the questions of "wealth" and "effort" including the use or nonuse of property tax in equalizing aid to public schools.

The methodology used to study equalization was found to vary with the Pearson product-moment-correlation being the most frequently used statistical procedure. Selection of a definition of equality, use of the computer in current research, and a discussion of fiscal capacity were also included in the review of literature. Finally, the use of simulation was found to be a legitimate vehicle for research studies such as this one concerned with equalizing tendencies of state aid.

CHAPTER III

DESIGN OF THE STUDY

Chapter III outlines the Michigan system of financing education and the method used in examining selected Michigan finance revision proposals. The method of data collection is detailed and the hypotheses to be tested are stated. Five hundred and thirty K-12 school districts were included in this study representing 99.8 percent of all public school students receiving state membership aid in Michigan. The few schools which were omitted are elementary districts which are not included in the data regularly published by the Michigan Department of Education in their Bulletin 1012--a publication which reports financial data for public schools within the state.

The Michigan System of Financing Education

Michigan's school finance method rests on two basic concepts: State Equalized Valuation (S.E.V.)--the amount of property value or tax base; and millage--the rate at which that property value is taxed (Ashmore, 1977). In Michigan, if the market value of all property in a particular assessing unit is $400 million dollars, the assessed valuation for this district should be determined to be $200 million--50 percent of true cash value.

Rawlinson (1977) points out that property taxes are levied on equalized valuation, not assessed valuation. If assessors throughout the state were able to accurately assess all property at 50 percent of its true cash value, there would be no need for "equalization." Rawlinson explains further that value is an illusive thing and is a product of opinion based upon knowledge and experience. There is variation among the assessors, and equalization is required to prevent assessing units from carrying unfair shares of support for local government programs administered over more than one assessment district.

> Some may not be aware that property taxes are a local tax paid to support only local government, schools, etc. None of the property tax goes to the state. (p. 3)

Each year each piece of property is listed, described in detail by the assessor, and improvements, sales and other factors are noted to arrive at a figure comparable to like property within the assessing unit. At the county level the board of commissioners adjusts the assessment rolls upward or downward in an attempt to establish uniformity within the county. Then the State Tax Commission "reviews each county's equalized valuation and makes adjustments in order to equalize assessments at approximately 50 percent of the true cash value on a statewide basis" (Ashmore, 1977, p. 21).

> To clarify the mystery regarding equalization after the assessor has finished, it is pointed out that an 'equalization factor' affects the entire assessment roll uniformly. The relationship of the valuation assigned your property to that assigned your neighbor's

> is not changed. In other words, if your assessment is too high in relation to your neighbor's, equalization will not correct the error. Equalization merely raises or lowers the entire assessment roll of a unit which brings the total property valuation among the various cities and townships into proper relationship with each other. (Rawlinson, 1977, pp. 3-4)

All districts in Michigan are permitted 15 mills which may be levied without a vote of the people. Since these 15 mills also serve as the basis for all other local tax units of government (county, city, township, village, etc.), the school may be allocated only eight nonvoted mills as its share. It is generally the practice for school officials to ask the electors of a district to approve additional millage to operate the schools.

The local property taxes generated per pupil in a district is the number of voted and nonvoted mills times the state equalized valuation (S.E.V.) per pupil. The S.E.V. per pupil is determined by dividing the state equalized valuation for a school district by the number of K-12 pupils enrolled in school on the fourth Friday after Labor Day. If there were 10,000 pupils enrolled and the S.E.V. for that district were $200 million dollars, The S.E.V. per pupil would be $20,000. If the school district had eight nonvoted mills and 20 voted mills, the amount of money produced locally for school purposes would be 28 mills times the S.E.V. per pupil, or .028 x $20,000 resulting in $560 per pupil. Michigan's state membership aid formula for each of four years is summarized in table I.

TABLE I

MICHIGAN MEMBERSHIP AID FORMULAE
1974-75 TO 1977-78

School Year	Membership Formulae
1974-75	$39,000 minus district S.E.V. per pupil times tax rate up to 25 mills
1975-76	$42,400 minus district S.E.V. per pupil times tax rate up to 20 mills plus $38,250 minus district S.E.V. per pupil times tax rate next 7 mills not to exceed 27 mills total
1976-77	$43,900 minus district S.E.V. per pupil times tax rate up to 20 mills plus $39,600 minus district S.E.V. per pupil times tax rate next 8 mills not to exceed 28 mills total
*1977-78	$164 per pupil plus $40 per mill of tax levied up to 30 mills = state gross allowance guaranteed. State gross guarantee minus product of district S.E.V. per pupil and tax rate = net allowance per pupil

*Source: Act No. 90 of Public Acts of 1977, State of Michigan, 79th Legislature

Under the 1977-78 state aid formula, the maximum amount guaranteed per pupil would be $164 plus $40 times 30 mills or $1,364. School districts could vote more or less than 30 mills, but the state aid paid would be determined up to the first 30 mills.

To compute state aid for the example given using the 1977-78 formula, the state's guarantee of $1,364 minus the district's S.E.V. per pupil of $20,000 times the tax rate of .028 = $1,364 - $560 = $864 state aid per pupil.

If the school district's S.E.V. goes up, the district does not receive more total dollars; rather, more local taxes will be required with less contribution on the part of the state. The problem faced in recent times has been that the value of real estate has greatly appreciated.

> The more the property value increased, the more taxes the local property owner pays, and the less state aid the state pays on the same mills levied. As a result, the schools receive the same net total. (Weinheimer, 1977, p. 5)

In addition to the state allocation per pupil based on the membership aid formula, each district may also receive "categorical" state aid for special needs programs such as special education, transportation, compensatory education and vocational education. School financial data provided by the Michigan Department of Education do not separate categorical aid from general operating aid. In analyzing the Tisch and Siljander finance revision proposals it was not necessary to know the amount of categorical aid per school district since the total funds available to each school district would remain the same; only the source of those funds would be changed.

However, for purposes of this study wherein changes in the state aid formula were investigated, it was necessary to determine the amounts of categorical aid paid each school district. By computing the actual membership aid for each school district under the 1977-78

formula, then subtracting this aid from the total state apportionment for each district, it was possible to determine the amount of categorical aid for each district. When categorical aid was removed from the state apportionment, the subsequent analyses more accurately reflected the effects of any changes in formula.

Selected Michigan Finance-Revision Proposals

The finance-revision proposals which were given consideration in this study are described in the following paragraphs.

The Tisch Proposal, authored by Robert Tisch, drain commissioner of Shiawassee County, would roll back property assessment to 25 percent of cash value on all property, thereby reducing present taxes by 50 percent. The Tisch Proposal would permit the state to increase income taxes by 1 percent to make up for lost revenue, and with voter approval, would permit a second 1 percent income tax hike to support schools (Herald-Palladium, July 10, 1978).

Mark D. Siljander, State Representative of the 42nd District in Michigan, advocated tax reform in Michigan for over a year. Siljander organized the Tax Efficiency Association of Michigan, Inc. (TEAM) to muster support for his tax proposal. In April 1978 he introduced a resolution to the Legislature calling for an amendment to the state constitution. Highlights of this resolution were:

a. Reduce property taxes of residential and agricultural and timber-cutover properties by 60 percent. (This represents a change from assessing property at 50 percent of true cash value to 20 percent of true cash value. All other property classifications would remain at 50 percent.)

b. Limit assessment increases for all property taxes to seven percent per year.

c. Equalize property by classification to eliminate current inequities.

d. Guarantee that the State will make up losses to local governments and school districts. Difference to be made up from the income tax and lottery monies.

e. Have a local control provision; even though the state is required to make up the difference, local people will still have control over how to spend their monies.

f. Guarantee a minimum amount of state aid per pupil and end forced reliance on property taxes with resultant shift to local costs.

g. Give senior citizens and veterans tax breaks. (Siljander, 1978)

Variations in the Tisch and Siljander proposals which specified larger reductions in property valuations than the original proposals were also examined for the resulting equalizing effects.

Two variations of the Siljander proposal requiring ceilings on the amount of eligible state aid were likewise investigated for the resulting equalizing effects.

Slight dollar increases in the guaranteed yield formula and/or removal of the 30-mill ceiling were studied as alternatives since "the formula is at least as important as the amount of state aid as a determinant of expenditure equality" (Harrison, 1976, p. 11).

Data Collection

The Michigan Department of Education provided a computer tape copy and punched computer cards indicating the state equalized valuations (S.E.V.) for each political subdivision (township, village, city) within each school district in the State or Michigan for the 1977-78 school year. Included were data indicating the number of pupils enrolled in each of the 530 K-12 Michigan school districts on the fourth Friday after Labor Day; the tax rate for each school district; the amount of state aid (apportionment) paid to each school district based on the local tax rate; and the amount of local taxes generated for school purposes for each school district.

The Michigan Tax Commission authorized the Michigan Treasury Department to release a copy of the computer tape containing assessed property values by property classification for each political subdivision in the state for 1977. State apportionment to school districts for 1977-78 is based on 1977 property tax information. This information included the amount of property designated as agricultural, commercial, industrial, residential, and timber-cutover for real property; and as agricultural, commercial, industrial, residential, and utility for personal property.

There are 1,783 different assessing units in Michigan including 1,254 township-assessing districts;

245 city-assessing districts; and 284 village-assessing districts (Rawlinson, 1978). These 1,783 assessing units are distributed among 530 school districts. To study the effects of the Siljander tax proposal it was necessary to combine the data collected for school systems and property valuations.

Since a township or other political subdivision might overlap two or more school systems, the percentage of each township within a school system was determined. For example, Royalton township overlaps three school systems as summarized in table 2.

TABLE 2

1977 EQUALIZED REAL PROPERTY VALUATIONS (IN DOLLARS) BY SCHOOL DISTRICT IN ROYALTON TOWNSHIP

School District	Amount of Equalized Property Value	Percent of Township
Berrien Springs	1,967,566	10.84
Lakeshore	4,456,870	24.57
St. Joseph	11,718,356	64.59
Totals	18,142,792	100.00

This example is further seen in the Berrien Springs Public Schools which are composed of three political subdivisions: Berrien township, Oronoko township, and Royalton township. A determination was made

as to what percentage of the total Berrien Springs schools equalized value was represented by each of the three townships. The results are summarized in table 3.

TABLE 3

1977 EQUALIZED PROPERTY VALUES (IN DOLLARS) BY TOWNSHIP IN THE BERRIEN SPRINGS PUBLIC SCHOOLS

Township	Equalized Property Value	Percent of District	Percent of Township
Berrien	11,059,866	20.52	67.25
Oronoko	40,862,604	75.83	99.04
Royalton	1,967,566	3.65	10.84
Totals	53,890,036	100.00	--

For each school district the state equalized valuation of property by property class was calculated. The proportion of property class in each assessing unit was determined for each school district within that unit. The same proportion was used in assigning each property class to the school district. For example, 3.65 percent of the total property value of Royalton township is included in the Berrien Springs district; therefore, 3.65 percent of each property classification in Royalton was assigned to the Berrien Springs school district. It was recognized that these different valuations by classification are not spread evenly in each township and that an approximation of each property classification per town-

ship would result. Therefore, additional cross checks and adjustments were made to be sure that the resulting property class distributions by school districts equaled total valuations by classification for the township, county, and state. Slight variations in data were found due to rounding differences. The foregoing procedure was applied to all 1,783 different assessing units in Michigan and the 530 K-12 school districts included in this study.

Every researcher hopes to produce results that will contribute in some practical way to present knowledge. Results which may be significant statistically may not be of practical significance. Power analysis is one technique employed to assist the researcher in measuring the degree to which his results prove "the existence of the phenomenon under test" (Cohen, 1969, p. 2). Power is the probability of getting a significant result if the null hypothesis is false. Rejection of the null hypothesis means that the alternative hypothesis is true to some nonzero degree:

> The null hypothesis always means that the effect size is zero. . . . When the null hypothesis is false, it is false to some specific degree, i.e., the effect size (ES) is some specific nonzero value in the population. (Cohen, 1969, p. 1)

Cohen (1969) asserts that the four parameters of statistical inference (power, significance criterion, sample size, and effect size) are so related "that any one of them is a function of the other three, which means that

when any three of them are fixed, the fourth is completely determined" (p. 14). In this study the desired power was set at .95, the significance criterion (alpha) was .05, and the sample size, n = 530. In dealing with the differences between population correlation coefficients, the effect size represents the "amount of change in the proportion of variance accounted for" (p. 110); the effect size is a function of the difference between two r^2's. The effect size was then determined to be .14 which means that there must be a 14 percent difference of variance accounted for from the null hypothesis in this study before the results may be considered to be of practical significance.

Data Analysis

This study utilized two statistical procedures to analyze the effects that would occur should one of the selected tax-reform proposals be adopted: (1) the Pearson product-moment-correlation and (2) a test of the difference between two correlation coefficients obtained from independent samples.

The first step utilized the Pearson product-moment correlation where the state equalized valuation (S.E.V.) per pupil per school district was the independent variable and the state aid per school district resulting from each reform proposal was the dependent variable. The correlation coefficient was computed for each analysis to ascertain equalizing tendencies of each finance-

revision plan and for comparison with the 1977-78 coefficient.

Correlation is a measure of relationship between two variables but does not imply that one is the cause of the other (Downie and Heath, 1965, p. 78). The size of the Pearson product-moment-correlation coefficient (r) varies from +1.0 (perfect positive relationship) through 0 (no relationship between the two measures) to -1.0 (perfect negative relationship). The square of the coefficient expresses the percentage of the variance shared by the two distributions (Borg & Gall, 1971). The two distributions in this study were the state equalized valuations (S.E.V.) per pupil and the state aid per pupil as determined for each of the proposals under investigation. A correlation of .71 would mean that 50 percent of the variance in the one measure is accounted for by the variance in the other; and each in turn has 50 percent unique variance not accounted for by the other (Guilford, 1956).

A negative correlation infers that poor school districts receive more state aid per S.E.V. than wealthy districts; and consequently, a negative correlation infers equalizing tendencies. A positive correlation infers that wealthy districts receive more state aid per S.E.V. than poor districts and therefore indicates disequalizing tendencies.

The second step was to transform the correlation

coefficients into Fisher's "z" scores or standard scores to test the difference between the correlation coefficients. Z scores are often selected to make tests of significance when the number of observations in the sample is large; and a large number of observations can be expected to approximate a normal curve (Downie & Heath, 1965, pp. 64-77; 128-130).

The 5 percent level of significance was selected in this study which means that there are five chances in one hundred that the null hypothesis might be rejected when it is actually true. "A z score of 1.96 taken at each end of the normal curve cuts off 5 percent of the total area" (Downie & Heath, 1965, p. 129). Therefore, a z score larger than 1.96, positive or negative, would be considered significant at the .05 level and the hypothesis would be rejected.

In addition, the effect size criterion of .14 was applied to the results of each analysis. There was no interest in any effect size less than $\pm$.14 since it would account for less than 14 percent of the variance and have no practical value.

For purposes of this study, the following nine hypotheses were tested:

1. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 50 percent reduction across-the-board in all

real property with the state providing funds to make up for lost revenues (Tisch proposal).

2. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 60 percent reduction across-the-board in all real property with the state providing funds to make up for lost revenues (variation of Tisch proposal).

3. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 60 percent reduction in the valuation of residential, agricultural, and timber-cutover properties, and state funds are provided to make up for lost revenues (proposed Siljander amendment).

4. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 60 percent reduction in the values of residential, agricultural, and timber-cutover properties, and a 20 percent reduction in commercial, industrial, and utility properties with state funds provided to make up lost revenues (variation A of proposed Siljander amendment.

5. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when

there is a 60 percent reduction in the values of residential, agricultural, and timber-cutover properties and the state provides funds to make up for lost revenues. Exceptions are that no payments would be made to school districts which resulted in combined state and local aid greater than one-and-one-half times the total revenues of the school district with the lowest combined state and local aid per pupil (variation B of Siljander proposal).

6. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 60 percent reduction in the values of residential, agricultural and timber-cutover properties, and the state provides funds to make up for lost revenues. Exceptions are that no payments would be made to school districts which resulted in combined state and local aid greater than two times the total revenues of the school district with the lowest combined state and local aid per pupil (variation C of Siljander proposal).

7. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when the state aid formula is changed from the 1977-78 formula of $164 plus $40 per mill per pupil up to 30 mills to a base of $164 plus $45 per mill per pupil up to 30 mills.

8. There is no significant difference in the

correlation between state aid per pupil to local school districts and state equalized valuation per pupil when the 30-mill ceiling for the state aid formula is removed and the state guarantees S.E.V. of $40,000 plus $164 per pupil for all mills levied.

9. There is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when both the guaranteed base is raised from $164 plus $40 per mill to $164 plus $45 per mill and the ceiling on mills is removed.

For each of the hypotheses listed above, a separate analysis was performed. The first analysis dealt with the Tisch proposal to make a 50 percent reduction in all real property. State funds would make up for lost revenues. The resulting loss in local revenue was determined by applying the effective tax rate in each school district to the value of the lost property for each district. The tax on the lost property was then added to the total state apportionment. Both the remaining S.E.V. and the state apportionment were divided by the number of state aid pupils to determine S.E.V. per pupil and state appropriation per pupil for each district in the state. These two distributions were then compared by the use of the Pearson product-moment-correlation coefficient to determine equalizing effects of state aid.

The second analysis was variation A of the

Tisch proposal wherein a 60 percent reduction across-the-board was made in all real property. Again, the proposal required that the state funds would make up for lost revenues. The resulting loss in local revenue was determined by applying the effective tax rate in each school district to the value of the lost property for each district. This amount was then added to the total state apportionment. Both the remaining S.E.V. and the state apportionment were then divided by the number of state aid pupils to determine S.E.V. per pupil and state appropriation per pupil for each district in the state. The two distributions were compared by the use of the Pearson product-moment-correlation coefficient to determine the equalizing effects of state aid.

The third analysis dealt with Siljander's proposal to reduce property valuation on agricultural and residential and timber-cutover properties by 60 percent and provide state funds to make up for lost revenues. In this study, the resulting loss in local revenue was determined by applying the effective tax rate in each school district to the value of the property lost for each district. This amount was then added to the total state apportionment. Both the remaining S.E.V. and the state apportionment were then divided by the number of state aid pupils to give the S.E.V. per pupil and state appropriation per pupil for each district in the state. These two distributions were then compared by use of the

Pearson product-moment-correlation coefficient to determine the equalizing effects of state aid.

The fourth analysis was variation A of the Siljander proposal which made a 60 percent reduction in agricultural, residential, and timber-cutover properties and a 20 percent reduction in commercial, industrial, and utility property. State funds would make up for lost revenues. The resulting loss in local revenue in this analysis was determined by applying the effective tax rate in each school district to the value of the lost property for each district. This amount was then added to the total state apportionment. Both the remaining S.E.V. and the state apportionment were then divided by the number of state aid pupils to give S.E.V. per pupil and state appropriation per pupil for each district in the state. A comparison of these distributions was made by the use of the Pearson product-moment-correlation coefficient to determine the equalizing effects of state aid.

The fifth analysis, variation B of Siljander's proposal, studied the results of a reduction of 60 percent in all values of residential, agricultural and timber-cutover properties. The state would provide funds to make up for lost revenues. However, no payment would be made to a school district which would result in combined state and local aid greater than one-and-one-half times the total revenues of the school district with the lowest combined state and local revenue per pupil. The resulting

loss in local revenue in this analysis was determined by applying the effective tax rate in each school district to the value of the lost property for each district. This amount was then added to the total state apportionment. Both the remaining S.E.V. and the state apportionment were then divided by the number of state aid pupils giving S.E.V. per pupil and state appropriation per pupil for each district in the state. The district with the lowest combined total state and local revenue per pupil was determined and a ceiling was set at one-and-one-half times this amount. No school district would receive state aid which would result in total revenues above this ceiling. These two distributions were then compared by the use of the Pearson product-moment-correlation coefficient to determine the equalizing effects of state aid.

The sixth analysis, variation C of Siljander's proposal, studied the results of a reduction of 60 percent in all values of residential, agricultural and timber-cut-over properties. The state would provide funds to make up for lost revenues. However, no payment would be made to a school district which would result in combined state and local aid greater than two times the total revenues of the school district with the lowest combined state and local aid per pupil. The resulting loss in local revenue in this analysis was determined by applying the effective tax rate in each school district to the value of the lost property for each district.

This amount was then added to the total state apportionment. Both the remaining S.E.V. and the state apportionment were then divided by the number of state aid pupils to give S.E.V. per pupil and state appropriation per pupil for each district in the state. The district with the lowest combined total state and local revenues per pupil was determined and a ceiling was set at two times this amount. No school district would receive state aid resulting in total revenues above this ceiling. These two distributions were then compared by the use of the Pearson product-moment-correlation coefficient to determine the equalizing effects of state aid.

The seventh analysis changed the state aid formula from the 1977-78 $164 plus $40,000 S.E.V. guarantee per pupil up to 30 mills to $164 plus $45,000 S.E.V. guarantee per pupil up to 30 mills. The actual membership aid for each school district was computed under the 1977-78 formula (tax rate times guaranteed S.E.V. minus tax rate times district S.E.V. up to 30 mills), and by subtracting this amount from the 1977-78 state apportionment for each district, it was possible to determine the amount of categorical aid for each district. Categorical aid was removed from the state apportionment figures to determine equalization aid under the 1977-78 formula. The effective tax rate for each district was then applied to the new proposed guarantee, i.e., $45,000 per pupil up to 30 mills, and the tax rate times the district S.E.V.

was subtracted to determine the new equalization aid. The categorical amounts were added to the new equalization aid to get total apportionment. Both the state equalized valuation and the state apportionment were divided by the number of state aid pupils to give S.E.V. per pupil and state appropriation per pupil for each district in the state. These two distributions were compared by the use of the Pearson product-moment-correlation coefficient to determine the equalizing effects of this change in the state formula.

The eighth analysis required the removal of the 30-mill ceiling for state aid. The formula used was $164 plus $40,000 S.E.V. guaranteed for all mills levied. No ceiling was used. The actual membership aid for each school district was computed under the 1977-78 formula. By subtracting this amount from the total 1977-78 state apportionment for each district, it was possible to determine the amount of categorical aid for each district. Categorical aid was removed from the state apportionment figures to determine equalization aid under the 1977-78 formula. The effective tax rate for each district was then applied to the new proposed guarantee, i.e., $164 plus $40,000 S.E.V. per pupil for all mills levied. The tax rate times the district S.E.V. was subtracted to determine the new equalization aid. The categorical amounts were added to the new equalization aid to get total apportionment. Both the state equalized valuation

and the state apportionment were then divided by the number of state aid pupils giving S.E.V. per pupil and state appropriation per pupil for each district in the state. These two distributions were compared by the use of the Pearson product-moment-correlation coefficient to determine the equalizing effects of this change in the state formula wherein the ceiling had been removed.

The ninth analysis required (1) a change in the amount of aid guaranteed each pupil--from $164 plus $40 per mill per pupil guaranteed up to 30 mills to $164 plus $45 per mill per pupil guaranteed, and (2) removal of the 30-mill ceiling. The actual membership aid for each school district was computed under the 1977-78 formula, and by subtracting this amount from the total 1977-78 state apportionment for each district, it was possible to determine the amount of categorical aid for each district. Categorical aid was removed from the state apportionment figures to determine equalization aid under the 1977-78 formula. The effective tax rate for each district was then applied to the new proposed guarantee, $164 plus $45 per mill per pupil guaranteed for all mills levied and the tax rate times the district S.E.V. was subtracted to determine the new equalization aid. The categorical amounts were added to the new equalization aid to get total apportionment. Both the state equalized valuation and the state apportionment were divided by the number of state aid pupils to give S.E.V. per pupil and

state appropriation per pupil for each district in the state. These two distributions were compared by the use of the Pearson product-moment-correlation coefficient to determine the equalizing effects of this change in the state formula.

After each analysis, the resulting coefficient was compared with the 1977-78 correlation coefficient between state aid and S.E.V. by the test of the difference between two correlation coefficients obtained from independent samples. This resulted in a z score. A z score of $\pm$1.96 or greater indicated a statistically significant change in equalization as a result of the proposal analyzed. In addition, the effect size criterion of .14 was applied to the results of each analysis. There was no interest in any effect size less than $\pm$.14 since it would account for less than 14 percent of the variance and would have no practical significance.

Summary

Chapter III described Michigan's system of financing education, and the finance revision proposals selected for consideration were explained. The Tisch and Siljander proposals and variations thereof were stated. Three additional analyses using changes in the state aid formula were outlined.

A detailed description of the method of data collection was given. Nine hypotheses were stated in the

null form. A separate analysis was performed on each of the nine hypotheses using the Pearson product-moment-correlation to determine the equalizing effects of state aid. Separate analyses were also made to test the difference of correlation coefficients by means of a z score to ascertain whether there was a significant change in correlation. Lastly, the results of each analysis were compared to the effect size criterion of .14 to ascertain whether or not the results were of practical significance.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Chapter IV presents the data collected for the study. Five hundred and thirty school districts are included which represent 99.8 percent of all public school students in grades K-12 in the state of Michigan. Correlations are presented between the state equalized valuation (S.E.V.) per pupil and the state apportionment per pupil for the 1977-78 school year data as well as for each of nine proposed finance-revision plans chosen for this investigation. A statistical analysis is given for each finance plan.

Analysis of Data: 1977-78 School Year

An analysis of the existing 1977-78 data was made to establish a base for comparison. The school district with the lowest state equalized valuation (S.E.V.) per pupil was the Gwinn Area Community Schools with $9,671.20 per pupil while the Bridgman Public Schools had a state equalized valuation per pupil (S.E.V.) of $301,413--about 31 times as much equalized property value. At the same time, the Gwinn schools had a total income, local and state aid combined, of $1,129.60 per pupil compared to Bridgman with $2,594.70 per pupil. Although

the Gwinn schools had less than half as much money per pupil as Bridgman did, it was necessary for the Gwinn schools to make a "tax effort" of 15.18 voted mills in addition to the 6.81 nonvoted mills levied in their district in order to produce their revenue (.0220 tax rate). On the other hand, Bridgman had no voted mills in addition to their 8.3 nonvoted mills (total .0083 tax rate). Taxpayers in the Bridgman district benefit from the presence of a nuclear plant which pays considerable taxes. There were 3,486 students in the Gwinn schools and 887 in the Bridgman schools. Gwinn received $917 per pupil in state aid while Bridgman students received $96 each in state appropriations. It can be seen that state aid had an equalizing effect as depicted in table 4.

TABLE 4

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST 1977-78 STATE EQUALIZED VALUATIONS (IN DOLLARS) PER PUPIL IN MICHIGAN K-12 SCHOOLS

School District	S.E.V.	State Appro-priations	Local Income	Total Income
Bridgman (Highest)	301,413.00	96.00	2,498.70	2,594.70
Gwinn (Lowest)	9,671.20	917.00	212.60	1,129.60
Range	291,742.20	811.00	2,286.10	1,465.10

The school district with the lowest state appropriation per pupil in 1977-78 was Beaver Island Community Schools which received no aid at all. The school district which received the highest state appropriation was Northville Public Schools in the amount of $1,555.70 per pupil. The Beaver Island schools had 54 pupils compared to Northville's 4,941; and Beaver Island schools had S.E.V. per pupil of $124,189.70--more than three-and-one half times as much S.E.V. as Northville's $32,472.60. Northville taxpayers paid a tax rate of .0328 to produce $1,065.10 per pupil in contrast to Beaver Island's .0091 which generated $1,130.10 per pupil. However, because of Michigan's state aid formula, Northville had more than twice as much revenue for its students. Note in table 5 that again state aid had an equalizing effect for the district poorer in property wealth.

TABLE 5

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST 1977-78 STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL IN MICHIGAN K-12 SCHOOLS

School District	State Aid	S.E.V.	Local Income	Total Income
Northville (Highest)	1,555.70	32,472.60	1,065.10	2,620.10
Beaver Island (Lowest)	.00	124,189.70	1,130.10	1,130.10
Range	1,555.70	91,717.10	65.10	1,490.00

The school district with the least combined state aid and local income in 1977-78 was the Lake City Area School District with $987.40 per pupil. The school district with the most combined state aid and local income was the Northville Public Schools with $2,620.10 per pupil, a difference of $1,632.70. The number of pupils served in the Lake City area schools was 1,159 compared to Northville with 4,941 students. Lake City's tax rate was .0190 while Northville's was .0328. The S.E.V. per pupil for Lake City was $37,336.90 and for Northville the S.E.V. per pupil was $32,472.60, a difference of $4,864.30. Therefore, the school district with the most income per pupil had almost three times as much revenue per pupil as the lowest school district. This may be explained by the lower tax rate and higher S.E.V. per pupil in Lake City. These data are summarized in table 6.

TABLE 6

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST 1977-78 TOTAL INCOME (IN DOLLARS) PER PUPIL IN MICHIGAN K-12 SCHOOLS

School District	Total Income	S.E.V.	State Aid	Local Income
Northville (Highest)	2,620.10	32,472.60	1,555.00	1,065.10
Lake City (Lowest)	987.40	37,336.90	278.00	709.40
Range	1,632.70	4,864.30	1,277.00	355.70

A correlation of the existing 1977-78 data was computed using the state equalized valuation (S.E.V.) per pupil and the state apportionment per pupil. The result was a correlation coefficient of -.729, significant at the .001 level of confidence, indicating a strong negative relationship; therefore, the 1977-78 finance plan indicated a strong equalizing effect. This correlation coefficient was used for comparison with all subsequent finance revision proposals.

Analysis 1--Tisch Proposal

The first finance reform analysis of this study concerned the Tisch proposal which called for a 50 percent across-the-board cut in all real property values. The resulting loss in tax revenues was to be made up by increases in state apportionment. Under this proposal the school district with the lowest state equalized valuation (S.E.V.) per pupil was the Gwinn Area Community Schools. The Gwinn schools were also the lowest in S.E.V. per pupil under the 1977-78 system of financing. The Bridgman Public Schools had the highest S.E.V. per pupil under the Tisch plan as it did under the 1977-78 analysis. Under the Tisch finance proposal the Gwinn schools would have an S.E.V. of $4,835.60 and Bridgman would have S.E.V. per pupil of $150,706.50, a difference of $145,870.90 per pupil, or half the 1977-78 values.

Using the Tisch proposal all schools in the state would also receive half as much income from local taxes

due to the 50 percent reduction in property values. However all schools would maintain exactly the same level of total income as 1977-78, with the same tax rates, as the loss in local income would be made up by the state. Gwinn, the poorest property-wealth district in the state, would receive an increase in state aid of only $106 over 1977-78. On the other hand, Bridgman (with property wealth more than thirty times greater than Gwinn as determined by the Tisch plan) would receive an increase in state aid of $1,249--almost twelve times more than Gwinn. This demonstrates how the inequities in state aid to rich and poor schools would be perpetuated or increased by using the Tisch proposal. These data are summarized in table 7.

TABLE 7

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE EQUALIZED VALUATIONS (IN DOLLARS) PER PUPIL UNDER TISCH PROPOSAL FOR MICHIGAN K-12 SCHOOLS

School District	S.E.V.	State Aid	Local Income	Total Income
Bridgman (Highest)	150,706.50	1,345.00	1,249.40	2,594.40
Gwinn (Lowest)	4,835.60	1,023.00	106.30	1,129.30
Range	145,870.90	322.00	1,143.10	1,465.10

Under the Tisch proposal the school district with the lowest state appropriation per pupil was the Beaver Island Community schools with $565 per pupil. The school district with the highest state appropriation per pupil was Northville Public Schools with $2,088.30, a range between the highest and lowest schools of $1,523.30. The highest aid was more than two-and-one-half the amount of the lowest state aid. Northville's tax rate was .0328 compared with Beaver Island's .0091. These date are summarized in table 8.

TABLE 8

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL UNDER THE TISCH PROPOSAL FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Northville (Highest)	2,088.30	16,236.30	532.60	2,620.60
Beaver Island (Lowest)	565.00	62,094.90	565.00	1,130.00
Range	1,523.30	45,858.60	32.40	1,490.60

A comparison of the data for 1977-78 and the Tisch proposal for the highest and lowest state aid school districts indicates that both would receive increases of over $500 in state aid under the Tisch plan. These data are summarized in table 9.

TABLE 9

COMPARISON OF DATA FOR 1977-78 AND TISCH PROPOSAL FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 PUPILS

School District	1977-78 State Aid	Tisch State Aid	Change In State Aid Under Tisch
Northville (Highest)	1,555.70	2,088.30	+532.60
Beaver Island (Lowest)	.00	565.00	+565.00
Range	1,555.70	1,523.30	-32.40

Hypothesis 1 stated that there is no significant difference in correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 50 percent reduction in all real property with the state providing funds to make up for the lost revenues. The correlation between state aid per pupil and S.E.V. per pupil under this plan yielded a coefficient of -.326, significant at the .001 level of confidence, indicating negative relationship and equalizing tendencies. This correlation was compared with the 1977-78 correlation of -.729 by using the test of the difference between correlation coefficients from two independent samples which produced a z score of -9.5578. This z score was greater than -1.96, therefore there is

a significant difference in the correlation under the Tisch proposal. Hypothesis 1 was rejected at the .05 level. This difference between the correlations for the Tisch and the 1977-78 finance methods produced an effect size of .42 which exceeded the criterion level of .14 and means that 42 percent of the variance is accounted for by the difference between the 1977-78 data and the Tisch proposal. This difference is of practical significance and would result in considerable reduction in the equalizing effects of state aid to all school districts in Michigan.

Analysis 2--Tisch Variation

The second analysis called for a 60 percent reduction in all real property. This variation of the Tisch proposal was included in the study to determine what effects a larger reduction of the property values would have on the equalization of education in Michigan.

The school district with the lowest state equalized valuation (S.E.V.) per pupil under this finance variation was the Gwinn Area Community Schools, and the highest S.E.V. per pupil was the Bridgman Public schools. The new range was a low of $3,868.40 for Gwinn and a high of $120,565.10 for Bridgman, with a difference of $116,696.70 in S.E.V. per pupil. The Gwinn schools would receive $1,045 in state aid as opposed to $917 in 1977-78, and Bridgman would receive $1,595 in state aid

per pupil compared with $96 per pupil in 1977-78. By design, the tax rates and total income (combined state aid and local income) would remain at the 1977-78 level. The state would make up the lost local revenues. This variation was more disequalizing than the original Tisch proposal. The richest property-wealth district in the state would receive more aid per pupil under this plan ($1,595.40 vs. $1,345) and the poorest district would receive a smaller per pupil increase ($1,045.20 vs. $1,023). These data are summarized in table 10.

TABLE 10

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE EQUALIZED VALUATIONS (IN DOLLARS) PER PUPIL UNDER THE 60 PERCENT TISCH VARIATION FOR MICHIGAN K-12 SCHOOLS

School District	S.E.V.	State Appro-priation	Local Income	Total Income
Bridgman (Highest)	120,565.10	1,595.40	999.50	2,594.50
Gwinn (Lowest)	3,868.40	1,045.20	85.10	1,130.10
Range	116,696.70	550.20	914.40	1,464.40

Under this Tisch variation, the lowest amount of state aid would be paid to the Beaver Island Community Schools which would receive $678 per pupil compared to zero (0) dollars in 1977-78. The highest amount of state aid would be paid to Northville schools which would

receive $2,194.80 compared to $1,555.70 in 1977-78. The highest state aid school district would, therefore, receive over three times the amount of the lowest state aid district. (See table 11).

TABLE 11

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL UNDER THE 60 PERCENT TISCH VARIATION FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Northville (Highest)	2,194.80	12,989.00	426.00	2,620.00
Beaver Island (Lowest)	678.00	49,675.90	452.10	1,130.10
Range	1,516.80	36,686.90	29.90	1,489.90

Both the highest state aid district and the lowest state aid district would receive over $600 each in additional state aid compared to 1977-78 to offset the reduction in locally produced revenues. These data are summarized in table 12. More state aid would go to the higher property-wealth district decreasing the equalizing effects of state aid under the Tisch variation proposal.

Hypothesis 2 states that there is no significant difference in the correlation between state aid per pupil to the local school district and state equalized

TABLE 12

COMPARISON OF DATA FOR 1977-78 AND TISCH VARIATION FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 SCHOOLS

School District	1977-78 State Aid	Tisch Var. State Aid	Change in State Aid Tisch Var.
Northville (Highest)	1,555.70	2,194.80	+639.10
Beaver Island (Lowest)	.00	678.00	+678.00
Range	1,555.70	1,516.80	38.90

valuation per pupil when there is a 60 percent reduction in all real property with the state providing funds to make up for lost revenues (variation of Tisch proposal). The correlation between state aid per pupil and the S.E.V. per pupil under this plan yielded a coefficient of -.137, significant at the .01 level, indicating a negative relationship and equalizing tendencies. A test of the difference between correlation coefficients from two independent samples produced a z score of -12.8152. This z score was greater than -1.96, therefore there is a significant difference in the correlation under the Tisch variation plan. Hypothesis 2 was rejected at the .05 level. The difference between the correlations for the Tisch variation and the 1977-78 finance plans produced

an effect size of .51 which exceeded the criterion level of .14 and means that 51 percent of the variance is accounted for by the difference between the 1977-78 data and the Tisch variation plan. This differences is of practical significance and would result in considerable reduction in the equalizing effects of state aid to all school districts in Michigan. It appears that the greater the reduction in property valuations, the greater the reduction in equalizing effects of state aid.

Analysis 3--Siljander Proposed Amendment

The third proposal required a reduction in all agricultural, residential, and timber-cutover properties by 60 percent and required the state to make up for lost revenues.

The school district with the lowest state equalized valuation (S.E.V.) per pupil under this finance plan was the Gwinn Area Community Schools with $4,764.30, and the highest S.E.V. per pupil was in the Bridgman schools with $286,170.10 per pupil, a range of $281,406.80. The Gwinn schools would receive $1,026.10 in state aid per pupil while Bridgman would receive $230.40 per pupil. Bridgman, the richest school district in the state, has more than sixty times as much S.E.V. per student as the poorest district; nevertheless, Bridgman would receive almost one-fourth as much state aid per pupil as the poorest school district in the state

under Siljander's plan. These data are summarized in table 13.

TABLE 13

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE EQUALIZED VALUATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER PROPOSAL FOR MICHIGAN K-12 SCHOOLS

School District	S.E.V.	State Appor-tionment	Local Income	Total Income
Bridgman (Highest)	286,170.10	230.40	2,372.30	2,602.80
Gwinn (Lowest)	4,764.30	1,026.10	104.70	1,130.30
Range	281,405.80	795.70	2,267.60	1,472.50

Bridgman would continue to generate a large amount of local revenue under the Siljander plan since commercial, industrial, and utility properties would not be reduced under this finance proposal. The Cook Nuclear plant located in Bridgman would continue to be responsible for the high S.E.V. per pupil and would continue to produce a large amount of local tax.

The lowest amount of state aid would be paid to the Bridgman schools which would receive $230.40 per pupil compared to $96 in 1977-78. The highest amount of state aid would be paid to Northville Public Schools in the amount of $2,039.90 compared to $1,555.70 per pupil in 1977-78. Since only agricultural, residential, and

timber-cutover properties would be reduced under this plan, those districts with high concentrations of commercial, industrial, and utility property would continue to produce more local revenues for school purposes than those areas that are primarily farming or residential. In spite of the fact that there is a difference of $1,809.50 in state aid between the highest and lowest recipients (as summarized in table 14), the total income for these two schools differs by only $34. The data confirms the equalizing effects of state aid using Siljander's plan.

TABLE 14

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER PROPOSAL FOR MICHIGAN K-12 SCHOOLS

School District	State Apportionment	S.E.V.	Local Income	Total Income
Northville (Highest)	2,039.90	18,209.90	597.30	2,636.30
Bridgman (Lowest)	230.40	286,170.10	2,372.30	2,602.30
Range	1,809.50	267,960.20	1,775.00	34.00

A comparison of the data for 1977-78 and the Siljander proposal shows increases in state aid as summarized in table 15.

Hypothesis 3 states that there is no significant

TABLE 15

COMPARISON OF DATA FOR 1977-78 AND SILJANDER PROPOSAL FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 SCHOOLS

School District	1977-78 State Aid	Siljander State Aid	Increase in State Aid Under Siljander Proposal
Northville (Highest)	1,555.70	2,039.90	484.20
Bridgman (Lowest)	96.00	230.40	134.40
Range	1,459.70	1,809.50	349.80

difference in correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 60 percent reduction in the valuation of residential, agricultural, and timber-cutover properties and state funds are provided to make up lost revenues. The correlation between the state aid per pupil and the S.E.V. per pupil under this plan yielded a coefficient of -.615, significant at the .001 level. The results indicate a negative relationship and equalizing tendencies.

A test of the difference between correlation coefficients from two independent samples produced a z score of -3.4051. The z score was greater than -1.96; therefore there is a significant statistical change in

the correlation under the Siljander proposal. Hypothesis 3 was rejected at the .05 level. The difference between the correlations for the Siljander proposal and the 1977-78 finance methods produced an effect size of .15 which exceeded the criterion level of .14 and means that 15 percent of the variance is accounted for by the difference between the 1977-78 data and the Siljander proposal. This difference is of practical significance inferring that adoption of the Siljander proposal would result in some reduction in the equalizing effects of state aid to Michigan schools.

Analysis 4--Siljander Variation A

The fourth analysis required a reduction in all agriculture, residential, and timber-cutover properties by 60 percent plus a reduction in industrial, commercial, and utility properties by 20 percent. Under variation A of the Siljander proposal, the school district with the lowest state equalized valuation (S.E.V.) per pupil was the Gwinn Area Community schools with $4,469.50, and the highest S.E.V. per pupil was the Bridgman Public Schools with $231,094.20, a difference of $226,624.70. The Gwinn schools would receive $1,032.60 in state aid, and Bridgman would receive $687. Although the richest district in property wealth had more than fifty times as much S.E.V. per student as the lowest property-wealth district under this proposal, the richest district would receive almost two-thirds as much state aid as the

TABLE 16

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE EQUALIZED VALUATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER VARIATION A FOR MICHIGAN K-12 SCHOOLS

School District	S.E.V.	State Appor-tionment	Local Income	Total Income
Bridgman (Highest)	231,094.20	687.00	1,915.80	2,602.80
Gwinn (Lowest)	4,469.50	1,032.60	98.30	1,130.30
Range	226,624.70	345.60	1,817.50	1,472.50

poorest district. These data are summarized in table 16.

The lowest amount of state aid would be paid to the Forest Park School district which would receive $530.70 based on S.E.V. of $30,061.10. The largest amount of state aid would be paid to Northville Public Schools which would receive $2,094.80 with S.E.V. of $18,209.90. This indicates that the range of state aid payments would be almost four times that of the lowest state aid district. These data are summarized in table 17.

Table 18 summarizes the comparison of data for 1977-78 and the Siljander variation A finance plan as it relates to the range of school districts with the highest and lowest state aid appropriations.

TABLE 17

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER VARIATION A FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Northville (Highest)	2,094.80	16,535.90	542.40	2,636.40
Forest Park (Lowest)	530.70	30,061.10	739.50	1,269.50
Range	1,564.10	13,525.20	197.10	1,366.90

TABLE 18

COMPARISON OF DATA FOR 1977-78 AND SILJANDER VARIATION A FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 SCHOOLS

School District	1977-78 State Aid	Siljander Var. A State Aid	Increase in State Aid Under Siljander Variation A
Northville (Highest)	1,555.00	2,0?4.80	522.70
Forest Park (Lowest)	84.00	530.70	446.30
Range	1,471.00	1,564.10	76.40

Hypothesis 4 states that there is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 60 percent reduction in the values of residential, agricultural, and timber-cutover properties, and a 20 percent reduction in commercial, industrial, and utility properties with state funds providing the lost revenues. A correlation made between the state apportionment per pupil under the Siljander variation A plan resulted in a correlation coefficient of -.487 which was significant at the .001 level. The findings indicated a negative relationship and equalizing tendencies of the Siljander variation A plan.

A test of the difference between correlation coefficients from two independent samples produced a z score of -6.4063. The z score was greater than -1.96; therefore there is a significant statistical difference in the correlation under variation A of the Siljander plan. As a result, hypothesis 4 was rejected at the .05 level. The difference between the correlations for the Siljander variation A proposal and the 1977-78 finance plan produced an effect size of .29 which exceeded the criterion level of .14. This means that 29 percent of the variance is accounted for by the difference between the 1977-78 data and the Siljander variation A proposal. The findings are of practical significance, and adoption

of the Siljander variation A finance method would appear to result in considerable reduction in the equalizing effects of state aid to school districts in Michigan.

Analysis 5--Siljander Variation B

The fifth analysis called for a reduction in all agricultural, residential, and timber-cutover properties by 60 percent. The state would provide funds to make up for lost revenues. No payment would be made to a school district which would result in combined state and local aid greater than one-and-one-half times the total revenues of the school district with the lowest combined state and local revenue per pupil. The school district with the lowest combined state and local aid was Lake City Area Schools with $992.40. Therefore, no school district would receive state aid that would result in total revenues in excess of $1,488.60.

The highest and lowest school districts in terms of S.E.V. under variation B of the Siljander proposal were Bridgman and Gwinn, respectively. (See table 19).

All schools in the State of Michigan would continue to receive state aid under variation B of the Siljander proposal with the exception of eight schools which would receive no state aid; namely, Bridgman, Covert, Dearborn City, Ecorse, Essexville, Flat Rock, River Rouge, and Southfield. (See table 20).

The range of state aid appropriations between the richest and poorest schools was reduced from $1,555.70

TABLE 19

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE EQUALIZED VALUATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER VARIATION B FOR MICHIGAN K-12 SCHOOLS

School District	S.E.V.	State Appor-tionment	Local Income	Total Income
Bridgman (Highest)	286,170.10	.00	2,372.30	2,372.30
Gwinn (Lowest)	4,764.30	1,026.00	104.70	1,130.70
Range	281,405.80	1,026.00	2,267.60	1,242.60

TABLE 20

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER VARIATION B FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Rudyard (High)	1,309.40	8,722.50	179.20	1,488.60
Bridgman (Low)	.00	286,170.10	2,372.30	2,372.30
Covert (Low)	.00	68,220.00	1,642.70	1,642.70
Dearborn City	.00	53,150.40	1,589.20	1,589.20
Ecorse (Low)	.00	59,363.00	1,700.70	1,700.70
Essexville (Low)	.00	84,708.00	1,558.60	1,558.60
Flat Rock (Low)	.00	61,274.60	1,623.80	1,623.80
River Rouge (Low)	.00	66,482.40	1,505.80	1,505.80
Southfield (Low)	.00	47,783.60	1,544.80	1,544.80

in 1977-78 to $1,309.40 under variation A of the Siljander proposal. In addition, the range of total revenues between the richest and poorest was reduced from $1,632.70 in 1977-78 to $1,379.90. This demonstrates the equalizing effects of state aid when a ceiling is placed on the eligible amount of aid in relation to the school district with the lowest total revenues.

Hypothesis 5 states that there is no significant difference in the correlation between state aid per pupil to local school districts and state equalized valuation per pupil when there is a 60 percent reduction in the values of residential, agricultural, and timber-cutover properties and the state provides funds to make up for lost revenues. However, no payment would be made to a school district which resulted in combined state and local aid greater than one-and-one-half times the total revenues of the school district with the lowest combined state and local aid per pupil. The correlation between the state equalized valuation (S.E.V.) per pupil and the state apportionment per pupil under this plan yielded a coefficient of -.718 which is significant at the .001 level. The coefficient indicates a strong negative relationship and therefore infers strong equalizing tendencies.

A test of the difference between correlation coefficients from two independent samples produced a z score of -0.3749. The z score was less than -1.96 which

means there is not a significant statistical change in the correlation under the Siljander variation B plan. Hypothesis 5 was retained. The difference between the correlations for the Siljander variation B and the 1977-78 finance method produced an effect size of .016 which was less than the criterion level of .14. The results are interpreted to mean that only 1.6 percent of the variance is accounted for by the difference between the 1977-78 data and the Siljander variation B proposal. There is no practical difference in this finance plan insofar as the equalizing effects of state aid to school districts in Michigan is concerned.

Analysis 6--Siljander Variation B

The fifth variation required a reduction in all agricultural, residential, and timber-cutover properties by 60 percent. The state would provide funds to make up the lost revenues except no payment would be made to a school district which resulted in combined state and local income greater than two times the amount received by the school district with the lowest combined state and local aid per pupil. The school district with the lowest combined state and local aid was Lake City Area schools with $992.40; therefore, no school district would receive state aid in excess of $1,984.80.

The highest and lowest school districts in terms of S.E.V. under variation C of the Siljander proposal are summarized in table 21.

TABLE 21

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE EQUALIZED VALUATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER VARIATION C FOR MICHIGAN K-12 SCHOOLS

School District	S.E.V.	State Appor-tionment	Local Income	Total Income
Bridgman (Highest)	286,170.10	.00	2,372.30	2,372.30
Gwinn (Lowest)	4,764.30	1,026.10	104.70	1,130.70
Range	281,405.80	1,026.10	2,267.60	1,242.60

All schools in the State of Michigan, except Bridgman, would receive increased state aid under the Siljander variation C method. The exception is explained by the fact that total aid to any school could not exceed one-and-one half times the lowest total revenue, or $1,984.80. In 1977-78 Northville had $2,620.10 in combined state aid and local revenues. Using the variation C of the Siljander proposal, the largest amount of state aid Northville would be eligible to receive would be $1,387.50. These data are summarized in table 22.

A comparison of the state appropriation data for 1977-78 and the Siljander variation C method is summarized in table 23.

TABLE 22

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL UNDER THE SILJANDER VARIATION C FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Northville (Highest)	1,387.50	18,209.90	597.30	1,984.80
Bridgman (Lowest)	.00	286,170.10	2,372.30	2,372.30
Range	1,387.50	267,960.20	1,775.00	386.20

TABLE 23

COMPARISON OF DATA FOR 1977-78 AND SILJANDER VARIATION C FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 SCHOOLS

School District	1977-78 State Aid	Siljander Var. C State Aid	Decrease in State Aid Under Sil-jander C
Northville (Highest)	1,555.70	1,387.50	168.20
Bridgman (Lowest)	96.00	.00	96.00
Range	1,459.70	1,387.50	72.20

Hypothesis 6 stated that there is no significant difference in correlation between state aid per pupil to the local school district and state equalized valuation per pupil when there is a 60 percent reduction in the values of residential, agricultural, and timber-cutover properties and the state provides funds to make up for lost revenues except that no payment would be made to a school district which resulted in combined state and local aid greater than two times the amount received by the school district with the lowest amount of combined state and local revenues per pupil. The correlation between the state equalized valuation (S.E.V.) per pupil and the state apportionment per pupil for the Siljander variation C method resulted in a coefficient of -.681, significant at the .001 level. A negative relationship was indicated; therefore it can be inferred that the Siljander variation C finance method would result in equalizing tendencies of state aid to Michigan schools.

A test of the difference between correlation coefficients from two independent samples produced a z score of -1.5227. The z score was less than -1.96; therefore there is not a significant statistical difference using the Siljander variation C plan. Hypothesis 6 was retained. The difference between the correlations for the Siljander variation C and 1977-78 finance methods produced an effect size of .067 which was less than the criterion level of .14. Only 6.7 percent of the variance

is accounted for by the difference between the 1977-78 data and the Siljander C proposal; and there is no practical difference in this finance plan insofar as equalizing tendencies of state aid is concerned.

Analysis 7--Change in State Aid Formula

The seventh analysis proposed to change the 1977-78 state aid formula from $164 plus $40 per mill per pupil up to 30 mills to $164 plus $45 per mill per pupil up to 30 mills.

No changes would be seen in the S.E.V. when comparing 1977-78 data with the seventh proposal which specifies a slight increase in the state aid guarantee.

The school district with the largest state appropriation under analysis 7 would be the Northville Schools with $1,705. Beaver Island would receive no state aid. These data are summarized in table 24.

The state aid data for 1977-78 and the formula change effects resulting from analysis 7 are summarized and compared in table 25.

Hypothesis 7 states that there is no significant difference in the correlation between state aid per pupil to the local school district and state equalized valuation per pupil when the state aid formula is changed from the 1977-78 formula of $164 plus $40 per mill per pupil up to 30 mills to a base of $164 plus $45 per mill per pupil up to 30 mills. The correlation between the

TABLE 24

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL USING ANALYSIS 7 FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Northville (Highest)	1,705.00	32,472.50	1,065.10	2,770.10
Beaver Island (Lowest)		124,189.70	1,130.10	1,130.10
Range	1,705.00	91,717.20	65.00	1,640.00

TABLE 25

COMPARISON OF DATA FOR 1977-78 AND ANALYSIS 7 FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 SCHOOLS

School District	1977-78 State Aid	Proposed Formula State Aid	Differences in State Aid Formula Chg.
Northville (Highest)	1,555.70	1,705.00	149.30
Beaver Island (Lowest)	.00	.00	.00
Range	1,555.70	1,705.00	149.30

state equalized valuation (S.E.V.) per pupil and the state apportionment per pupil under this plan resulted in a correlation coefficient of -.743 which was significant at the .001 level. The coefficient indicates a negative relationship and equalizing tendencies of state aid to Michigan schools.

A test of the difference between correlation coefficients from two independent samples produced a z score of -0.4959. The z score was less than -1.96 indicating that there is not a significant statistical difference in the correlation using the analysis 7 plan. Hypothesis 7 was retained. The difference between the correlations for analysis 7 and the 1977-78 method produced an effect size of .02 which was less than the criterion level of .14. The results indicate that only 2 percent of the variance is accounted for by the difference between the 1977-78 data and analysis 7. There is no practical reason to change to this finance plan insofar as the equalizing effects of state aid are concerned.

Analysis 8--Removal of the Ceiling on Millage

The eighth analysis would remove the 30-mill ceiling for the state aid formula, and the state would guarantee $164 plus $40 per mill per student for all mills levied. No changes would result in the S.E.V. when comparing 1977-78 data with the suggested finance proposal 8.

The school district with the highest state appropriation would be Northville Public Schools with $1,667, and Beaver Island Public Schools would be lowest with no state aid at all. These data are summarized in table 26.

TABLE 26

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL USING ANALYSIS 8 FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Northville (Highest)	1,667.00	32,472.50	1,065.10	2,732.10
Beaver Island (Lowest)		124,189.70	1,130.10	1,130.00
Range	1,667.00	120,942.20	65.00	1,602.10

A comparison of the changes in state aid for 1977-78 and finance proposal 8 is summarized in table 27.

Hypothesis 8 states that there is no significant difference in the correlation between state aid per pupil to the local school district and state equalized valuation per pupil when the state aid formula is changed to remove the 30-mill ceiling and the state would guarantee S.E.V. of $164 plus $40 per mill per pupil for all mills levied. The correlation between the state equalized valuation (S.E.V.) per pupil and the state

TABLE 27

COMPARISON OF DATA FOR 1977-78 AND ANALYSIS 8 FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 SCHOOLS

School District	1977-78 State Aid	Proposed Formula State Aid	Differences in Formula Chg. State Aid
Northville (Highest)	1,555.70	1,667.00	111.30
Beaver Island (Lowest)	.00	.00	.00
Range	1,555.70	1,667.00	111.30

apportionment per pupil under this change in finance formula resulted in a coefficient of -.699, significant at the .001 level of confidence. The results showed a negative relationship and indicated equalizing tendencies of state aid to Michigan schools using proposal 8.

A test of the difference between correlation coefficients from two independent samples produced a z score of -.9942. The z score was less than -1.96 so there is not a significant statistical change in the correlation under the eighth finance revision proposal. Hypothesis 8 was retained. The difference between the correlations for analysis 8 and the 1977-78 finance methods produced an effect size of .04 which was less than

the criterion level of .14. The data infers that only 4 percent of the variance is accounted for by the difference between the 1977-78 data and analysis 8. There is no practical change in the equalizing effects of state aid when applying proposal 8 to 1977-78 data.

Analysis 9--Change in Formula and Ceiling Removal

The ninth analysis proposes to raise the membership aid guarantee to $164 plus $45 per mill per pupil and remove the ceiling on mills allowable to qualify for state aid. No changes would result in the S.E.V. when comparing 1977-78 data with this finance method.

The school district with the highest state appropriation was the Northville Schools with $1,831, and the lowest school district was Beaver Island with no aid at all. These data are summarized in table 28.

TABLE 28

DATA FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL USING ANALYSIS 9 FOR MICHIGAN K-12 SCHOOLS

School District	State Appro-priations	S.E.V.	Local Income	Total Income
Northville (Highest)	1,831.00	32,472.50	1,065.10	2,896.10
Beaver Island (Lowest)	.00	124,189.70	1,130.10	1,130.10
Range	1,831.00	91,717.20	65.00	1,766.00

Table 29 summarizes a comparison of changes in data for 1977-78 and analysis 9 in relation to state aid to the highest and lowest school districts.

TABLE 29

COMPARISON OF DATA FOR 1977-78 AND ANALYSIS 9 FOR SCHOOL DISTRICTS WITH THE HIGHEST AND LOWEST STATE APPROPRIATIONS (IN DOLLARS) PER PUPIL FOR MICHIGAN K-12 SCHOOLS

School District	1977-78 State Aid	Proposed Formula State Aid	Differences in State Aid Formula Chg.
Northville (Highest)	1,555.70	1,831.00	325.30
Beaver Island (Lowest)	.00	.00	.00

Hypothesis 9 states that there is no significant difference in correlation between state aid per pupil to local school districts and state equalized valuation per pupil when both the guaranteed base is raised from $164 plus $40 per mill to $164 plus $45 per mill per pupil and the ceiling on mills is removed. The correlation between the state equalized valuation (S.E.V.) per pupil and the state apportionment per pupil under this plan resulted in a coefficient of -.722 which is significant at the .001 level of confidence. The findings indicate a negative relationship which infers equalizing tendencies of state aid to Michigan schools.

A test of the difference between correlation coefficients from two independent samples produced a z score of -0.2399. The z score was less than -1.96; therefore there is not a significant statistical difference in the correlation under the ninth finance revision proposal. Hypothesis 9 was retained. The difference between the correlations for analysis 9 and the 1977-78 method produced an effect size of .01 which was less than the criterion level of .14. Therefore, only 1 percent of the variance is accounted for by the difference between the 1977-78 data and analysis 9. There is no practical change in the equalizing effects of state aid when applying proposal 8 to 1977-78 data. It appears that raising the state aid guarantee slightly and removing the ceiling on the number of eligible mills does not produce any better equalizing results from state aid than the 1977-78 formula.

A summary of the results of all nine finance proposals is given in table 30. The Tisch and Siljander finance revision proposals as well as analyses 2 and 4 were statistically significant at the .05 level. The findings of this study infer that the difference in results produced by the Tisch and Siljander proposals and variations 2 and 4 are reliable and that there are only five chances in one hundred that this trust is in error. Furthermore, these four analyses appear to have practical significance. The results suggest that these finance

methods would produce real changes if adopted, changes that would reduce the equalizing effects of state aid to Michigan schools when compared to 1977-78 data.

Analyses 5 through 9 were not found to be statistically different from 1977-78 and if adopted would not significantly change the equalizing effects of state aid in the State of Michigan.

Table 31 (appendix B) is a summary of the range in differences in dollars per pupil for state equalized valuations, state aid, local revenues, and total revenues for all nine proposals under investigation in this study. Comparison may be made with the 1977-78 data to determine the effects of each proposed finance revision.

Throughout the analysis of each finance proposal several school districts were named as highest or lowest in various categories. Tables 32 through 37 (appendix B) are summaries of this data for individual school systems mentioned in this study.

Summary

Chapter IV presented the data collected for 530 K-12 school districts in Michigan and analyzed it in terms of nine finance revision proposals. To identify inequities, the highest and lowest school districts were determined for each of the nine finance revision plans on the basis of state equalized valuations, state appropriations, and total revenue per pupil. In addition

TABLE 30

SUMMARY OF FINANCE REVISION PROPOSALS COMPARED WITH 1977-78 DATA

Analysis	Proposal	Procedure	r for Proposal	r^2	Difference between Proposals and 1977-78 Data: z Score	Difference between Proposals and 1977-78 Data: Effect Size $r_1^2-r_2^2$
1	Tisch	50 percent reduction all real property	-.326**	.1062	-9.5578	.42#
2	Tisch Var.	60 percent reduction all real property	-.137*	.0187	-12.8152	.51#
3	Siljander	60 percent reduction all agric., residential, and timber cutover property	-.615**	.378	-3.4051	.15#
4	Siljander Var. A	60 percent reduct. all ag. resid.,& timber cutover plus 20 percent reduct. indust. and utility	-.487**	.2371	-6.4063	.29#
5	Siljander Var. B	60 percent reduct. all ag. resid., & timber; no aid more than 1.5 x lowest dist.	-.718**	.5155	-0.3749	.016
6	Siljander Var. C	60 percent reduct. all ag. resid., & timber; no aid more than 2 x lowest dist.	-.681**	.4637	-1.5527	.067
7	Formula Variation	State guarantees $164 plus $45/mill/pupil to 30/mills	-.743**	.5520	-0.4959	.02
8	Formula Variation	State guarantees $164 plus $40/mill/pupil;no ceiling	-.699**	.4886	-0.9442	.04
9	Formula Variation	$164 plus $45/mill/pupil all mills--no ceiling	-.722**	.5212	-0.2399	.01
	1977-78	Base Year & formula	-.729	.5314		

* P < .01
** P < .001
# gamma > .14

a comparison was made between the 1977-78 data and each of the nine proposals.

The relationship between state equalized valuation and state apportionment per pupil was shown by a Pearson product-moment-correlation coefficient for each of the nine proposals to determine equalizing tendencies of state aid. A test of the difference between correlation coefficients from two independent samples was also performed for each proposal as compared to 1977-78 data to determine the statistical significance. Each finance proposal was also evaluated in terms of its effect size to determine practical significance.

It was found that the Tisch and Siljander proposals and variations 2 and 4 had both statistical and practical significance. It appears that these four finance plans would significantly reduce the equalizing effects of state aid to Michigan schools.

Finance proposals 5 through 9 were additional variations of Siljander's method, slight increases in amount of guaranteed membership aid, and/or removal of the ceiling of eligible mills for state aid. These five variations in finance plans were found to result in no statistically significant changes from the 1977-78 method. It could be concluded that no changes in equalizing effects of state aid would be experienced with the use of one of these five proposals.

No improvement in equalizing tendencies of state

aid would be realized by adoption of any of the nine finance revision plans analyzed; namely, the Tisch proposal and one variation thereof; the Siljander proposal and three variations thereof; and three changes to the state aid formula.

In chapter V conclusions will be drawn from the data presented. Recommendations will be made and suggestions for further study will be outlined.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V presents a summary of the study along with a discussion of the applications of the findings of the study. Conclusions are drawn and recommendations for further study are made.

Summary

The purpose of this study was to determine what effect selected tax reform and school finance proposals would have on the equalizing tendencies of state aid to Michigan public school districts. Taxpayers in Michigan reflected the mood of the nation in 1978 with active efforts to reduce property taxes. Three proposals to amend the state constitution in Michigan were placed on the November 1978 ballot. These proposals were expected to reduce or shift property taxes and at the same time change the financing of education.

First, the Michigan voters were presented with a voucher plan which would have prohibited the levy of property taxes for educational purposes. A system of general state taxation would have supported all elementary and secondary education with the issuance of "vouchers"

which could be used at either public or private schools of the student's choice.

Secondly, the Tisch proposal called for a sharp roll-back in property taxes, limited increases in property assessments to no more than 2.5 percent per year, and limited the state income tax rate. This proposal was seen as a "tax-shift" since provisions were included for revenue make-up by other means.

Thirdly, the Headlee Tax Limitation proposal limited the total amount of state and local taxes that could be collected from the public to a fixed proportion of the Michigan personal income. As personal income increases, tax revenues could increase. The Headlee proposal also required the state to pay the cost of any new mandated programs and required that future bond obligations be approved by the electors.

In addition, Mark Siljander, State Representative of the 42nd District in Michigan, introduced a resolution to the Legislature calling for a constitutional amendment to reduce certain classifications of property and to limit assessment increases for all property taxes to 7 percent a year. Siljander's amendment would have guaranteed a minimum amount of state aid per pupil and would have reduced reliance on property taxes. Any losses to local governments and school districts would be made up from income taxes and lottery monies under Siljander's proposal.

Confusion existed as to what would happen if one or all of the proposals should be approved by the voters. Nevertheless, the Headlee Tax Amendment was passed by a close margin, and an unexpectedly long and difficult process began to interpret what this new amendment meant to citizens in Michigan in terms of educational and governmental services. As of April 1979, this uncertainty of interpretation of the Headlee Amendment by the Legislature still existed, and sponsors of other finance-revision proposals began to prepare for the reintroduction of their propositions to the voters.

The evolution of the educational process in the United States has progressed from the privilege of private schools for the advantaged, to the privilege of public schools for all at public expense, and finally to a right that must be provided for all equally without regard for race, sex, ability, or wealth. Whereas "equal educational opportunity" was first seen as a question of race with integration a possible solution, equity for students in the 1970s became a question of correcting the imbalance in funding for rich and poor schools. Still impeding the attainment of this goal, however, is the lack of agreement as to the definition of "equal educational opportunity." Major philosophical concepts of equality of educational opportunity have been contributed by Wise (1968) whose nine definitions are all based on allocation of resources from differing

perspectives of the issue; by Levin (1974) who advocates compensatory funds for the disadvantaged so that all children have an equal start in life; and by Coleman's (1974) emphasis on the "effects" or outcomes of schools rather than the resource imputs.

The legal interpretations the courts have given as to what is and what is not equal educational opportunity have had far-reaching and important implications. Half of the states enacted school finance reforms following the Serrano (1971) decision wherein the California Supreme Court ruled that the quality of a child's education could not be dependent upon the wealth of his or her parents or on the wealth of the district in which he lived. The primary goal of the finance reforms was to implement formulas which would distribute more state aid to school districts low in property wealth and therefore low in ability to provide educational programs on a par with wealthier districts.

The intensified emphasis on financial equity led researchers to launch extensive studies to determine which finance methods were most equalizing and to ascertain to what extent the various formulas were accomplishing the goal of equalization. Investigative activities ranged from efforts to identify determinants of local school district tax and expenditure policies to studies encompassing a small number of states, and finally to massive undertakings which included all 50

states. The results of such research contributed to a pool of knowledge which was necessary and helpful, but numerous additional questions were also raised.

The Michigan system of school finance adopted in 1973 was a plan known as an "equal yield formula" and provided that school districts should receive equal dollars per pupil for equal millage effort. Schools are financed by (1) locally levied property taxes, a portion of which are voted by the property owners, and (2) state aid based on the amount of property value (state equalized valuation) and millage, the rate at which that property value is taxed.

The purpose of state membership aid to Michigan schools is to assist those districts which cannot raise enough funds locally to provide a desired level of educational services comparable to wealthier school districts selecting the same tax rate. If implementation of one or more of the proposals under study results in rich schools receiving more state aid than poor schools, the desired equalizing quality of state aid becomes diminished. By holding the total revenues constant at the 1977-78 level, it is possible to evaluate the equalizing or disequalizing effects which would occur with any given proposal.

This study sought to simulate the results which might be experienced in Michigan should the Tisch or Siljander proposals be adopted, or if a variation of one

of these plans were implemented. Likewise, three possible changes in the state aid formula were examined as alternatives to the Tisch and Siljander proposals.

The data required for this study included (1) all real property values in the State of Michigan by school district and (2) enrollment, revenue, and expenditure data for 530 K-12 school districts representing 99.8 percent of all public school students in these grades. The relationship between state equalized valuations of property and state aid per pupil was determined by computing a Pearson product-moment-correlation coefficient. A negative correlation indicated equalizing tendencies while a positive correlation would have indicated disequalizing tendencies.

The 1977-78 Michigan finance formula produced a correlation coefficient of -.729 between state equalized valuations and state aid per pupil indicating a negative relationship and therefore an equalizing tendency. The 1977-78 coefficient (-.729) was used as the base for comparison for all finance revision proposals under consideration in this study. Coefficients were computed for each of the nine proposals being investigated to determine equalizing tendencies. A test of the difference between correlation coefficients from two independent samples was performed to compare the results of each analysis with the 1977-78 data to determine statistically significant differences. A power analysis of each

proposal was undertaken to determine effect size and practical significance. Power was set at .95, alpha at .05, and effect size or gamma at .14.

The first analysis dealt with the Tisch proposal which would reduce all real property valuations by 50 percent. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.326 for the Tisch proposal, indicating a negative relationship and equalizing tendency. A test of the difference between the Tisch coefficient (-.329) and the 1977-78 coefficient (-.729) was found to be statistically significant beyond the .05 level. The effect size for the Tisch proposal was computed to be .42, which indicated practical as well as statistical significance. The Tisch proposal would cut local property taxes in half. However, if the same level of total educational dollars were to be maintained as that available in 1977-78, richer school districts would need larger state aid payments than poor districts to compensate for greater loss in local monies. Educational inequities would thus be increased. If at the same time, the Tisch proposal limited the increase permissible for taxes of all kinds, it might be difficult to produce adequate funding at the state level to make up for lost local tax dollars necessary to support the 1977-78 level of total educational dollars. The Tisch proposal, if adopted, would therefore significantly reduce the equalizing effects

of state aid to Michigan schools.

The second analysis was a variation of the Tisch proposal and specified that the valuation of all real property would be reduced by 60 percent. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.137 for this variation of the Tisch proposal, indicating a negative relationship and an equalizing tendency. A test of the difference between the Tisch variation coefficient (-.137) and the 1977-78 coefficient (-.729) indicated that the difference was statistically significant beyond the .05 level. The effect size for the Tisch variation was computed to be .51 which indicated practical as well as statistical significance. Adoption of this variation of the Tisch proposal would result in the lowest property taxes of any of the nine finance proposals included in this investigation. At the same time, the largest state aid payments would be required under this plan. Richer school districts would need larger state aid payments than poorer districts to compensate for the greater loss in local monies if the 1977-78 level of total revenues were to be maintained. If adequate funding were not available at the state level because of the Tisch requirement limiting the increase on taxes of all kinds, the alternative would be to reduce educational spending. This variation of the Tisch proposal would result in greater inequities overall than any of the other finance

revision plans under investigation in this study.

The third analysis was the Siljander proposal which required a 60 percent reduction in the valuation of all agricultural, residential, and timber-cutover properties. The valuation of commercial, industrial, and utility properties would not be reduced. The correlation between state equalized valuation per pupil and state aid per pupil produced a correlation coefficient of -.615, indicating a negative relationship and an equalizing tendency. A test of the difference between the Siljander coefficient (-.615) and the 1977-78 coefficient (-.729) was found to be statistically significant beyond the .05 level. The effect size for the Siljander proposal was computed to be .15, which indicated practical as well as statistical significance.

The Siljander coefficient of -.615 suggests that the reduction in equalizing tendencies of state aid under this finance proposal would not be as severe as either of the Tisch proposals analyzed. Compared with the 1977-78 finance plan, however, some increase in inequities would occur inasmuch as wealthy school districts would experience a larger increase in state aid than poor school districts. The overall effect of adoption of the Siljander proposal would be a reduction in the equalizing effects of state aid to Michigan schools when compared to 1977-78.

The fourth analysis was variation A of the

Siljander proposal which called for a 60 percent reduction in all agricultural, residential, and timber-cutover properties and a 20 percent reduction in industrial, commercial, and utility properties. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.487, indicating a negative relationship and an equalizing tendency. A test of the difference between the coefficient in this plan (-.487) and the 1977-78 coefficient (-.729) was found to be statistically significant beyond the .05 level. The effect size for the Siljander variation A proposal was computed to be .29, indicating practical as well as statistical significance. The Siljander variation A coefficient and effect size suggest that this finance plan would be preferable to either of the Tisch proposals; however, variation A would be less satisfactory in terms of equalization than the original Siljander proposal. Compared to 1977-78 data, variation A of the Siljander proposal would result in a reduction in the equalizing effects of state aid to Michigan schools. Business and industrial property owners in Michigan might be better satisfied with Siljander variation A since they, too, would receive property tax reductions under this plan.

The fifth analysis was variation B of the Siljander proposal which called for a 60 percent reduction in the valuation of all agricultural, residential, and timber-cutover properties with the provision that no school

district could receive state aid which would result in total revenues in excess of one-and-one-half times the school district with the lowest total revenues. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.718, indicating a negative relationship and an equalizing tendency. A test of the difference between the Siljander B coefficient (-.718) and the 1977-78 coefficient (-.729) was not statistically significant. These findings indicate that adoption of the Siljander variation B proposal would result in no significant changes in the equalizing effects of state aid. This plan could be substituted for the 1977-78 finance scheme without significantly changing the equalizing tendencies if there were other features which made the Siljander variation B plan preferable, such as property tax reduction. The range of differences in total revenues between rich and poor schools is the smallest of the nine proposals when using the Siljander variation B method of financing schools.

Taxpayers would find their property taxes reduced from the 1977-78 levels for agricultural, residential, and timber-cutover properties under the Siljander variation B proposal. However, negative factors such as no tax relief for commercial and industrial property owners, reduction of taxes for non-Michigan residents, and other political and economic considerations would have to be

evaluated prior to recommendation of the Siljander variation B proposal.

The sixth analysis was variation C of the Siljander proposal which called for a 60 percent reduction in all agricultural, residential, and timber-cutover properties, with the provision that no school district could receive state aid which would result in total revenues in excess of two times the school district with the lowest total revenues. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.681, indicating a negative relationship and an equalizing tendency. A test of the difference between the Siljander C coefficient (-.681) and the 1977-78 coefficient (-.729) was not statistically significant. This means that adoption of the Siljander variation C proposal would result in no significant changes in the equalizing effects of state aid. This plan could be substituted for the 1977-78 finance plan without significantly changing the equalizing tendencies of state aid in Michigan if there were other features which made the Siljander variation C plan preferable. Any negative and/or economic considerations such as those cited for variation B would have to be evaluated with respect to variation C of the Siljander proposal prior to a recommendation for adoption of this proposal.

The first six proposals analyzed in this study were in reality tax shifts rather than plans for actual

reduction in taxes of all kinds. The two major alternatives to the property tax are sales and income taxes. Voter acceptance and attitudes toward the type of tax levied must also be considered. It is apparent that the present property tax situation is not popular with the general public.

A shift from property taxes to sales taxes might be seen as undesirable since sales taxes tend to be regressive. Sales taxes tend to tax people for minimum essentials and therefore require a larger proportion of income from poor people than rich people thus increasing disparities. Michigan's present 4 percent sales tax exempts food items and medicine. Sales taxes have little relationship to ability to pay or benefits received. On the other hand, a shift to sales taxes might be seen as beneficial to Michigan residents because of the heavy out-of-state tourist industry.

A shift from property taxes to the state income tax would not improve equity for taxpayers because the income tax in Michigan is a flat rate rather than a progressive tax. A shift to the state income tax would result in poor people paying the same proportion of their total income as rich people; however, poor people would have to pay a proportionately larger share of their discretionary income in taxes which would perpetuate or increase existing disparities. Income taxes may be viewed as more closely related to benefits received and ability

to pay than property taxes. A shift to income taxes would likely result in increased taxes for those presently benefitting from the circuit-breaker provision. Out-of-state, non-resident property owners might escape alternative tax schemes unless some provision is designed for this purpose. Administrative problems and costs in maintaining a dual system of property tax assessment for residents and non-residents could prove burdensome.

The Siljander proposal requirement to reduce the value of some classes of property (agricultural, residential, and timber-cutover) might precipitate some political and economic ramifications and resentment from owners of commercial, industrial, and utility properties who would not experience equivalent property tax relief. At the same time, all taxpayers would be required to pay increased alternative taxes such as sales or income taxes if the 1977-78 level of total educational dollars were to be maintained.

If property tax reduction is implemented, the state government may be expected to take on a larger share of the burden in providing educational dollars. Taxpayers might find the alternative taxes required to meet the need for larger state aid payments to schools could become as troublesome as real property taxes. There are those who also fear loss of local control in the schools with an increase in state responsibility for funding.

The seventh analysis was a change in the state

aid formula and would provide aid to school districts of $164 plus $45 per mill per pupil up to 30 mills. This is a $5 per mill increase from the 1977-78 formula. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.743, the largest coefficient of all nine proposals under study. The coefficient from this plan indicated a strong negative relationship between state equalized valuation and state aid and therefore indicated a strong equalizing tendency. A test of the difference between the analysis 7 coefficient (-.743) and the 1977-78 coefficient (-.729) was not statistically significant. This means that adoption of the analysis 7 finance plan would result in no significant changes in the equalizing effects of state aid. A higher guarantee per mill is a higher reward for effort and might encourage more local effort, however.

The eighth analysis called for the removal of the current ceiling of 30 mills on the number of mills eligible for state monies. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.699 indicating a negative relationship and an equalizing tendency. A test of the difference between the analysis 8 coefficient (-.699) and the 1977-78 coefficient (-.729) was not statistically significant. Removal of the ceiling on mills did not improve the equalizing tendencies. Adoption of analysis 8

would result in no significant changes in the equalizing effects of state aid to Michigan schools.

The ninth analysis called for a raise in the amount of guaranteed aid to $164 plus $45 per mill per pupil and removal of the ceiling on mills eligible for aid. The correlation between state equalized valuation per pupil and state aid per pupil produced a coefficient of -.722, which indicated a negative relationship and an equalizing tendency. A test of the difference between the analysis 9 coefficient (-.722) and the 1977-78 coefficient (-.729) was not statistically significant. Adoption of analysis 9 would result in no significant changes in the equalizing effects of state aid to Michigan schools.

In the 7th, 8th, and 9th analyses there were no changes in local revenues, that is, no reduction or increases in property taxes. There were some increases in state aid, particularly with the 7th and 9th analyses. Funding to provide for these increases would have to be produced from an alternative source. It may be assumed that taxpayers would react negatively to any increase in taxes at a time when the present tax load is perceived as burdensome.

It may be expected that efforts will continue to be made in the search for relief for taxpayers and in the attempt to achieve dollar equity for students by closing the revenue gaps between rich and poor schools. Finance

reform is not a one-time project. The multi-dimensional and increasingly complex issues encompassing any decision with regard to public policy, such as school finance, have attracted a broad spectrum of participants in their resolution. Taxpayers have demonstrated their willingness to seek relief directly at the polls thus bypassing the legislative process. If Michigan residents are to enjoy the benefits of a truly equitable system of educational finance, all possible efforts should be made to obtain information in advance of adoption of any reform. The experience of recent months wherein the Legislature has labored long to interpret the meaning of the Headlee Amendment which was passed last November is an example of the lack of understanding before an amendment was introduced and passed.

This study has attempted to provide advance notice of the possible damage to the equalizing tendencies of state aid which could result with the adoption of the original Tisch or Siljander proposals. Both the Tisch and Siljander proposals are still pending; therefore, there is now sufficient information available to indicate that if property taxes are reduced as specified in one of these plans, significant damage would result to the equalizing tendencies of state aid with the adoption of one of these proposals. It was demonstrated, however, that placing a ceiling on the state aid (as was done in the variations B and C of the

state aid (as was done in the variations B and C of the Siljander proposal)can effectively reduce property taxes and maintain the same equalization effects of state aid as was present in 1977-78. School finance authorities can see that slight changes in the state aid formula will not result in any significant improvemement in the equalization of educational opportunity but these slight changes will cost more money. The information provided in this study highlights the importance and value of simulation studies prior to the adoption and implementation of major policy changes, such as school finance. At first sight the changes may seem politically significant but they may possibly result in undesired and unexpected damage in other respects.

Conclusions

The following conclusions are based on the analysis of data obtained from a computer simulation of the 1977-78 school finance data using 530 K-12 school districts and property valuations in the State of Michigan:

1. Plans to reduce property taxes and make up for lost revenues by state sources decrease the equalizing effects of state aid except that shifts away from the property tax to other state revenues can be carried out without damage to the equalizing tendencies of state aid if there is a ceiling on the amount of state

aid that is available to a local school district. It appears that the larger the reduction in assessed valuations, the more damage that is done insofar as equalizing tendencies of state aid is concerned.

2. Slightly increasing the amount of state aid guaranteed in an equal yield formula does not improve the equalizing tendencies of state aid.

3. Removing the ceiling on the number of mills eligible for state aid in a guaranteed equal yield formula does not result in improved equalization.

4. Computer simulations are essential in providing the necessary information for decision making.

Recommendations

Further studies should be made:

1. to determine the equalizing effects of state aid as a result of the Headlee amendment to the Michigan State Constitution which was passed by the voters in 1978

2. to determine the equalizing effects of large increases in the guaranteed equal yield formula

3. to determine the equalizing effects when a ceiling is applied to the state aid under the Tisch proposal

4. to determine the cause of the crease in equalization between state equalized valuation and state aid in Michigan between the years 1972-73 through 1977-78

5. to determine the total costs to the state of

each of the proposals studied herein.

It is recommended that a replication of this study be carried out using 1978 personal income data as a measure of school district wealth.

It is recommended that other finance revision proposals which may be presented for consideration be submitted to computer simulation prior to adoption and implementation.

It is recommended that a search should be made for other formulae which would increase equalization.

APPENDIX A

FINANCIAL DATA FOR MICHIGAN SCHOOLS

1977-78

CURRENT DATA - 1978

NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
1010	ALCONA COMMUNITY SCHOOLS	1346.0	612244.6	1224.5	144.0	1368.5	.0200
2020	BLAIR TOWNSHIP SCHOOL DIST	141.0	50211.3	1286.2	86.0	1372.2	.0256
2060	CATHRAS TOWNSHIP SCHOOL DIS	154.0	22403.7	618.7	736.0	1354.7	.0276
2070	CENTRAL PUBLIC SCHOOLS	1491.0	22492.5	558.2	690.0	1248.2	.0248
2080	BECK RIVER LIMESTONE S/D 7	450.0	17088.1	386.4	845.0	1231.4	.0225
3010	PLATTSBELL COMMUNITY SCHOOLS	2778.0	238244.4	571.8	666.0	1237.8	.0240
3020	ATSEGO PUBLIC SCHOOLS	2816.0	21672.3	541.8	724.0	1265.8	.0250
3030	ALLEGAN PUBLIC SCHOOLS	3077.0	20230.5	487.4	748.0	1235.4	.0241
3040	MAYLAND UNION SCHOOLS	2601.0	19000.0	460.5	856.0	1316.5	.0255
3050	FENNVILLE PUBLIC SCHOOLS	1825.0	16801.7	428.4	922.0	1350.4	.0261
3060	MARTIN PUBLIC SCHOOLS	917.0	17440.3	491.3	911.0	1402.3	.0271
3070	WAYLAND PUBLIC	1164.0	17913.2	471.3	946.0	1417.3	.0264
3080	SAUGATUCK PUBLIC SCHOOLS	742.0	335642.2	875.1	437.0	1312.1	.0261
3100	HAMILTON COMMUNITY SCHOOLS	1729.0	32945.8	903.3	483.0	1386.3	.0275
4010	ALPENA PUBLIC SCHOOLS	4349.0	31267.6	874.9	547.0	1421.9	.0260
5010	ALBA PUBLIC SCHOOLS	215.0	53499.7	1194.6	107.0	1301.6	.0223
5035	CENTRAL LAKE PUBLIC SCHOOLS	599.0	46878.7	1209.5	116.0	1325.5	.0258
5040	BELLAIRE PUBLIC SCHOOLS	605.0	60063.2	1416.9	55.0	1471.9	.0228
5060	ELK RAPIDS SCHOOLS	1127.0	64482.5	1359.3	107.0	1466.3	.0211
5065	ELLSWORTH COMMUNITY SCHOOLS	274.0	47013.1	1405.8	131.0	1536.8	.0289
5070	TRAVERSE CITY PUBLIC SCHOOLS	11337.0	43263.4	1038.3	174.0	1212.3	.0240
6010	BREAC EASTERN SCHOOL DIST	636.0	20497.5	463.2	739.0	1202.2	.0226
6020	AU GRES SIMS SCHOOL DISTRIC	514.0	49143.1	1061.5	135.0	1196.5	.0216
6055	STANDISH STERLING COMM S/D	2343.0	248644.8	562.6	649.0	1211.6	.0226
7020	BARAGA TOWNSHIP SCHOOL DIST	429.0	14830.1	365.0	915.0	1280.0	.0245
7040	L ANSE TOWNSHIP SCHOOL DIST	1134.0	20114.0	472.9	733.0	1205.9	.0235
8010	BELDING AREA SCHOOL DIST	2434.0	21772.3	546.5	721.0	1267.5	.0251
8030	EASTBAND AREA SCHOOL DIST.	4071.0	21658.3	508.3	746.0	1254.3	.0265
8050	CAEDAPPLE KELLOGG SCH DIST	2077.0	20845.5	563.9	790.0	1353.9	.0270
8070	BAY CITY SCHOOL DISTRICT	15476.0	24917.5	753.0	523.0	1276.0	.0245
9030	BANGOR TOWNSHIP SCHOOLS	4093.0	27601.3	646.3	578.0	1224.3	.0234
9050	ESSEXVILLE HAMPTON SCH DIST	2174.0	37579.1	1795.5	32.0	1827.5	.0184
9090	PINCONNING AREA SCHOOLS	3265.0	21185.3	526.9	773.0	1278.9	.0239
10015	BENTON CO/UNITY CENTRAL SCH	1907.0	37795.8	909.9	324.0	1233.9	.0241
10035	FRANKENMUTH AREA SCHOOLS	4150.0	51259.1	1208.7	54.0	1262.7	.0236
11010	BENTON HARBOR AREA SCHOOLS	9961.0	18334.1	545.1	959.0	1504.1	.0297
11020	ST JOSEPH PUBLIC SCHOOLS	3713.0	37539.3	1288.5	363.0	1651.5	.0340
11030	BENTON HARBOR SCHOOL DISTRICT	3904.0	24345.7	626.6	644.0	1250.6	.0249
11033	RIVER VALLEY SCHOOL DISTRIC	2093.0	33671.8	804.1	459.0	1263.1	.0240
11060	GALIEN TOWNSHIP SCHOOL DIST	840.0	17144.2	435.0	843.0	1278.0	.0254
11070	NEW BUFFALO AREA SCHOOL DIS	1235.0	37600.9	939.7	331.0	1270.7	.0250
11210	BRANDYWINE PUBLIC SCH DIST	2257.0	18195.2	507.1	892.0	1399.1	.0279
11220	BERRIEN SPRINGS PUB SCH DIS	2294.0	23491.7	605.5	771.0	1376.5	.0258
11250	EAU CLAIRE PUBLIC SCHOOLS	1164.0	19073.9	376.8	943.0	1319.8	.0255
11300	NILES COMMUNITY SCHOOL DIST	5604.0	24582.6	759.0	765.0	1524.0	.0309
11310	BUCHANAN COMMUNITY SCH DIST	2267.0	28329.9	815.1	587.0	1402.1	.0288
11320	WATERVLIET SCHOOL DISTRICT	1552.0	21644.8	527.6	721.0	1318.6	.0244
11330	COLOMA COMMUNITY SCHOOLS	2010.0	21234.2	549.6	756.0	1305.6	.0259
11340	BRIGHTON PUBLIC SCHOOLS	847.0	301413.0	2444.7	94.0	2538.7	.0693
12010	CEDARVILLE COMMUNITY SCHOOLS	1434.0	29007.7	695.5	531.0	1226.5	.0239
12020	BROWN CITY COMMUNITY SCH DIST	1662.0	27550.1	647.6	579.0	1226.6	.0233
12040	ANCHOR BAY COMMUNITY SCHOOLS	1532.0	29140.0	697.4	821.0	1518.4	.0225
13010	ALGIER PUBLIC SCHOOLS	3115.0	23670.7	667.2	742.0	1409.2	.0294
13020	CHARLES CREEK PUBLIC SCHOOLS	9006.0	24745.8	841.4	777.0	1618.4	.0356
13030	SPRINGFIELD CITY SCHOOL DIS	1698.0	34527.4	1135.6	410.0	1545.6	.0339

CURRENT DATA - 1976

NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
13550	ATHENS AREA SCHOOLS	1017.0	19795.8	538.0	823.0	1361.0	.0272
13570	TANNER CREEK COMM SCHOOLS	3237.0	19413.0	524.2	818.0	1342.2	.0270
13580	ROGER COMMUNITY SCHOOLS	1327.0	18665.5	466.6	800.0	1266.6	.0250
13590	LAKEVIEW SCHOOL DISTRICT	4438.0	24181.2	912.5	585.0	1497.5	.0324
13610	MARSHALL PUBLIC SCHOOLS	3198.0	26265.1	709.2	617.0	1326.2	.0270
13620	PENNFIELD SCHOOL DISTRICT	2594.0	22605.1	655.5	746.0	1401.5	.0290
13630	TEKONSHA COMMUNITY SCHOOLS	660.0	19569.6	549.8	825.0	1374.8	.0282
13635	UNION CITY COMM SCHOOL DIST	1554.0	18376.1	446.5	886.0	1332.5	.0243
13810	CASSOPOLIS PUBLIC SCHOOLS	1958.0	23144.9	784.0	590.0	1374.0	.0269
13820	DOWAGIAC UNION SCHOOLS	3845.0	25544.2	574.7	699.0	1273.7	.0240
13830	EDWARDSBURG PUBLIC SCHOOLS	2211.0	23910.0	627.6	708.0	1335.6	.0262
14050	MARCELLUS COMMUNITY SCHOOLS	1138.0	23149.6	590.3	759.0	1389.3	.0255
14110	BEAVER ISLAND COMM SCHOOLS	54.0	12489.7	1130.1	.0	1130.1	.0091
14120	BENTON HARBOR CITY SCH DIST	4900.0	18242.3	853.5	474.0	1357.5	.0269
14330	BENTON HARBOR AREA SCHOOLS	2250.0	32742.5	1064.0	1064.9	2128.9	.0255
14340	BRIDGMAN PUBLIC SCHOOLS	1714.0	50327.9	1346.3	79.0	1425.3	.0267
14350	EAST JORDAN PUBLIC SCH DIST	1289.0	29766.4	818.6	536.0	1354.6	.0275
14515	CHEBOYGAN AREA SCHOOLS	2807.0	23823.6	686.0	527.0	1213.0	.0230
14550	INLAND LAKES SCHOOL DISTRICT	912.0	47110.2	1272.1	100.0	1372.1	.0270
14570	MACKINAW CITY PUBLIC SCHOOL	256.0	93350.7	1590.5	47.0	1637.5	.0170
14610	GALESBURG COMM SCHOOL DIST	4263.0	32506.7	865.2	485.0	1330.2	.0260
17110	SAULT STE MARIE AREA SCHOOL	4587.0	19629.9	515.3	854.0	1369.3	.0262
17250	DEERFIELD AREA SCHOOLS	441.0	66453.7	1553.4	100.0	1693.4	.0240
17350	RICHFIELD PUBLIC SCHOOLS	933.0	30293.8	814.4	571.0	1385.4	.0273
17410	RICHLAND AREA SCHOOLS	1010.0	15525.3	319.0	1210.0	1529.0	.0225
17610	BRIDGEY PUBLIC SCHOOLS	493.0	25832.6	517.9	645.0	1162.9	.0200
17640	CHELSEA PUBLIC SCHOOLS	1130.0	95713.2	1968.3	150.0	1668.3	.0155
18210	FARMELL AREA SCHOOLS	1767.0	23248.5	674.2	731.0	1405.2	.0290
18260	FARMINGTON COMMUNITY SCHOOLS	1562.0	46929.3	1149.8	158.0	1307.8	.0245
18660	GLADWIN COMMUNITY SCHOOLS	2181.0	34340.5	821.8	413.0	1235.8	.0240
19110	GENESEE PUBLIC SCHOOLS	19248.0	19648.7	524.5	876.0	1400.5	.0290
19170	FOWLER PUBLIC SCHOOLS	815.0	19380.6	445.1	807.0	1303.1	.0250
19200	BATH COMMUNITY SCHOOLS	1301.0	16628.7	465.5	926.0	1391.5	.0280
19420	DAVID ELSIE AREA SCHOOLS	2435.0	24337.3	643.0	727.0	1370.0	.0267
19435	PENNFIELD ELEMENTARY SCHS	970.0	24333.8	645.3	707.0	1353.3	.0265
19440	ST JOSEPH PUBLIC SCHOOLS	4330.0	24334.4	632.4	597.0	1229.4	.0257
20010	CRANFORD ASSARE SCHOOLS	2139.0	40331.1	917.7	252.0	1169.7	.0227
20110	ESCANABA AREA PUBLIC SCHOOL	4959.0	28342.6	772.6	573.0	1345.6	.0275
20125	GLADSTONE AREA SCHOOLS	2364.0	31594.9	835.6	941.0	1276.6	.0245
20260	RAPID RIVER PUBLIC SCHOOLS	737.0	27447.7	614.8	589.0	1203.8	.0224
20265	BAY DE NOC SCHOOL DIST	563.0	37050.6	979.3	472.0	1451.3	.0264
20350	BIG BAY MARQUETTE SCH DIST	829.0	12509.9	262.6	978.0	1240.6	.0224
21135	MID PENINSULA SCHOOL DIST.	561.0	25060.7	478.9	731.0	1209.9	.0234
21210	IRON MOUNTAIN CITY SCH DIST	1461.0	20031.5	753.4	622.0	1375.4	.0243
21225	GOGEBIC RANGE AREA SCHOOLS	933.0	21831.0	546.0	785.0	1331.0	.0240
22330	GREENWOOD TWP SCHOOL DISTRICT	2512.0	29370.1	556.6	751.0	1307.6	.0271
22345	NORTH DICKINSON CO SCH DIST	630.0	23054.2	525.8	689.0	1215.8	.0229
23010	HELLENIC CHRTR SCH DIST	1304.0	17613.0	476.1	606.0	1082.1	.0270
23330	CHARLOTTE PUBLIC SCHOOLS	1133.0	22853.2	635.5	711.0	1316.5	.0265
23350	EATON RAPIDS PUBLIC SCHOOLS	3479.0	19652.4	469.4	839.0	1294.4	.0249
23360	GRAND LEDGE PUBLIC SCHOOLS	5476.0	24039.3	665.6	697.0	1386.6	.0280
23515	MAPLE VALLEY SCHOOL DISTRIC	1904.0	16228.8	361.9	828.0	1189.9	.0223
23710	OLIVET COMMUNITY SCHOOLS	1254.0	25432.7	636.3	650.0	1286.3	.0250
25190	POTTERVILLE PUBLIC SCHOOLS	939.0	10721.7	268.2	887.0	1355.2	.0260
25320	PORTLAND PUBLIC SCHOOLS	3886.0	79175.7	1163.9	82.0	1245.9	.0147

CORRELT DATA - 1976

NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
24030	LITTLEFIELD PUBLIC SCH DIST	455.0	29980.9	755.8	534.0	1289.5	.0252
24040	BELLSTON PUBLIC SCHOOL DIST	868.0	42359.3	940.4	205.0	1145.4	.0222
24070	PUBLIC SCHOOLS OF PETOSKEY	2736.0	44528.7	1326.3	182.0	1508.3	.0273
25010	FLINT CITY SCHOOL DISTRICT	38037.0	25963.9	866.7	726.0	1592.7	.0341
25030	GRAND BLANC COMM SCHOOLS	7670.0	33122.8	976.3	447.0	1423.3	.0294
25050	GOODRICH CONSOLIDATED SCHS	3612.0	20402.8	630.8	810.0	1440.8	.0312
25060	GOODRICH AREA SCHOOL DIST	1659.0	25033.8	716.2	678.0	1394.2	.0286
25160	GENESEE PUBLIC SCHOOLS	2036.0	15030.4	393.0	878.0	1271.0	.0261
25070	GENESEE INTERMEDIATE SCHOOL DISTRICT	845.0	16394.5	460.8	902.0	1362.8	.0281
25080	CARMAN-AINSWORTH COMMUNITY	7838.0	42931.7	1447.2	160.0	1607.2	.0337
25100	FENTON AREA PUBLIC SCHOOLS	3479.0	25367.5	736.1	682.0	1417.1	.0295
25110	FARMINGTON COMMUNITY SCHOOLS	4891.0	21996.6	593.9	801.0	1394.9	.0270
25120	FLUSHING COMMUNITY SCHOOLS	5762.0	22394.2	609.3	706.0	1315.3	.0265
25130	FRANKENMUTH SCHOOL DIST	1531.0	26611.6	855.6	646.0	1501.6	.0321
25140	FRANKLIN COMMUNITY SCHOOLS	5814.0	19733.3	533.8	822.0	1355.8	.0273
25150	CLIO AREA SCHOOL DISTRICT	5247.0	18530.1	458.0	831.0	1289.0	.0247
25160	SWARTZ CREEK COMMUNITY SCHS	5032.0	27831.9	730.9	554.0	1284.9	.0263
25200	LAKE FENTON SCHOOLS	2603.0	25262.7	712.0	634.0	1346.0	.0271
25210	GRETCHEN-HEIGHTS SCH DIST	1866.0	28747.2	833.7	642.0	1475.7	.0290
25230	BERKLEY COMMUNITY SCHOOL DIS	1985.0	19694.8	572.8	829.0	1401.8	.0291
25240	BEECHER COMMUNITY SCH DIST.	5585.0	17631.6	513.3	952.0	1465.3	.0309
25250	LINDEN COMM SCHOOL DISTRICT	2724.0	22257.2	645.5	769.0	1414.5	.0290
25260	MONTROSE COMMUNITY SCHOOLS	2115.0	17677.8	458.2	853.0	1311.2	.0256
25240	LAKEVILLE COMMUNITY SCHOOL DIST	3319.0	17532.7	465.8	843.0	1303.8	.0260
26010	SEAFORD PUBLIC SCHOOLS	1968.0	24907.9	677.6	674.0	1351.6	.0270
26040	BEDFORD PUBLIC SCHOOLS	2034.0	31730.6	848.6	489.0	1337.6	.0270
27010	BESSEMER CITY SCHOOL DIST	584.0	14886.8	439.1	967.0	1406.1	.0295
27020	IRONWOOD AREA SCHOOLS	4974.0	20683.3	562.5	760.0	1322.5	.0270
27040	GWINN AREA SCHOOL DISTRICT	1948.0	51307.1	1546.2	168.3	1714.2	.0351
27070	WAKEFIELD T.P. SCHOOL DIST	720.0	23911.0	585.5	760.0	1345.5	.0280
27080	WATERSMEET TWP SCHOOL DIST	227.0	62343.5	1281.2	157.0	1438.2	.0285
26110	TRAVERSE CITY SCHOOL DIST.	9911.0	36623.6	915.9	335.0	1250.9	.0260
26030	BENZIE CO. CENTRAL SCHOOL DISTRICT	3034.0	41648.1	1078.2	270.0	1348.2	.0280
27050	KINCHELOE AREA SCHOOLS	7650.0	27210.0	620.0	572.0	1192.0	.0245
27110	ALMA PUBLIC SCHOOLS	3906.0	31149.7	792.2	792.0	1350.2	.0282
27120	ASHLEY PUBLIC SCHOOLS	532.0	10883.9	276.8	806.0	1202.8	.0255
29040	BEVERIDGE COMM SCHOOLS	1595.0	24956.4	624.9	669.0	1293.9	.0250
29110	BOLTON SCHOOLS	1199.0	24862.3	634.0	662.0	1296.0	.0255
29140	BYRON PUBLIC SCHOOLS	1944.0	24741.3	655.1	677.0	1332.1	.0265
29150	ST. LOUIS PUBLIC SCHOOLS	1960.0	21210.0	572.4	803.0	1375.4	.0270
30110	CARSON CITY SCHOOLS	790.0	26445.4	589.3	570.0	1159.3	.0219
30220	MT. SCHOOL COMM DISTRICT	2435.0	25844.3	696.6	603.0	1299.6	.0255
30330	HARRISVILLE COMMUNITY SCHOOL	1341.0	21620.1	532.3	736.0	1268.3	.0250
30440	HILLMAN AREA PUBLIC SCHOOL	794.0	24737.5	666.7	657.0	1323.7	.0259
30550	ONAWAY AREA SCHOOLS	767.0	21930.4	520.6	741.0	1267.6	.0239
30660	ATLANTA AREA SCHOOLS	933.0	23470.3	552.2	664.0	1226.2	.0239
30770	ALPENA PUBLIC SCHOOLS	1134.0	23084.1	577.2	691.0	1268.2	.0253
30880	ALPENA AREA SCHOOLS	5444.0	29030.4	724.7	602.0	1326.7	.0264
31010	ANTRIM PUBLIC SCHOOLS	1142.0	24962.3	650.9	623.0	1280.9	.0264
31020	ADAMS TWP SCHOOL DISTRICT	596.0	17248.6	448.5	875.0	1323.5	.0260
31030	BELLAIRE PUBLIC SCHOOLS OF CALUMET	2224.0	17309.8	432.6	793.0	1225.6	.0255
31040	CHELSEA TWP SCHOOL DISTRICT	377.0	21833.9	543.8	681.0	1224.8	.0249
31050	CHEBOYGAN PUBLIC SCHOOLS	935.0	18532.5	396.8	797.0	1193.8	.0240
31060	CENTRAL TWP SCHOOL DISTRICT	1307.0	21456.0	514.9	706.0	1220.9	.0240
31130	LAKE LINDEN HUBBELL SCH DIS	736.0	21957.6	491.6	630.0	1121.6	.0223

CURRENT DATA - 1979

NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
31140	STERLING TWP SCHOOL DISTRICT	165.0	31495.3	708.6	557.0	1265.6	.0225
32010	OAK ARE PUBLIC SCHOOLS	1664.0	24957.3	449.2	568.0	1017.2	.0180
32015	[illegible]	306.0	9747.5	1599.6	113.0	1672.6	.0165
32035	[illegible]	1371.0	25411.3	1275.6	117.0	1392.6	.0195
32050	[illegible]	1132.0	50391.6	1140.1	118.0	1258.1	.0226
32060	[illegible]	466.0	43559.9	1001.9	238.0	1239.9	.0230
32090	[illegible]	408.0	40813.9	1429.1	112.0	1541.1	.0235
32120	[illegible]	328.0	57728.5	1443.2	83.0	1526.2	.0250
32130	[illegible]	269.0	57979.3	1420.5	72.0	1492.5	.0245
32170	[illegible]	1364.0	24709.0	492.3	580.0	1072.3	.0199
32215	[illegible]	4829.0	40295.8	1548.6	287.0	1835.6	.0384
32220	[illegible]	30675.0	26226.5	852.2	789.0	1641.2	.0338
32230	[illegible]	110.0	25970.4	722.7	979.0	1701.7	.0350
32240	[illegible]	2667.0	22310.6	778.6	811.0	1589.6	.0349
32250	[illegible]	4510.0	17923.0	544.8	904.0	1448.8	.0304
32260	[illegible]	1825.0	14974.1	512.3	857.0	1369.3	.0270
32270	[illegible]	3303.0	24254.9	657.4	654.0	1311.4	.0270
32275	[illegible]	3364.0	31311.0	1276.4	396.0	1672.4	.0362
32285	[illegible]	2167.0	24277.9	831.2	650.0	1321.2	.0260
32315	[illegible]	4110.0	50304.7	1581.8	216.0	1797.8	.0298
32320	[illegible]	832.0	21403.7	631.5	805.0	1436.5	.0295
32400	[illegible]	1840.0	26331.1	831.4	655.0	1486.4	.0310
32410	[illegible]	3443.0	17753.9	394.0	738.0	1132.0	.0222
32420	[illegible]	2039.0	17531.1	420.9	831.0	1251.9	.0243
32490	[illegible]	3165.0	19958.0	500.7	761.0	1261.7	.0251
34110	[illegible]	2279.0	20331.1	511.3	758.0	1269.3	.0251
34120	[illegible]	1142.0	18954.2	524.1	836.0	1360.1	.0276
35010	[illegible]	4043.0	27701.0	541.6	494.0	1035.6	.0195
35020	[illegible]	810.0	50338.4	1328.1	110.0	1438.1	.0240
35030	[illegible]	1842.0	46133.3	945.3	158.0	1103.3	.0212
35040	[illegible]	1540.0	24039.1	649.9	535.0	1130.9	.0230
35055	[illegible]	832.0	42203.5	1165.8	84.0	1249.8	.0326
35065	[illegible]	1827.0	24021.5	651.0	710.0	1361.0	.0271
35075	[illegible]	4726.0	29133.2	929.5	624.0	1553.5	.0319
35080	[illegible]	724.0	16597.5	402.6	854.0	1256.6	.0344
35085	[illegible]	2001.0	14944.2	481.1	835.0	1316.1	.0253
35100	[illegible]	2533.0	24337.9	657.7	670.0	1327.7	.0270
35120	[illegible]	1355.0	13993.6	375.0	937.0	1312.0	.0260
35140	[illegible]	2299.0	32186.2	822.4	441.0	1263.4	.0255
35145	[illegible]	5705.0	21944.1	704.4	572.0	1276.4	.0279
35150	[illegible]	1162.0	21097.2	551.9	796.0	1347.9	.0341
35155	[illegible]	1650.0	19410.7	552.9	810.0	1362.9	.0281
35160	[illegible]	1425.0	24625.3	676.3	602.0	1278.3	.0261
35165	[illegible]	1739.0	24497.9	752.0	639.0	1391.0	.0290
35170	[illegible]	3933.0	24245.7	647.5	661.0	1308.5	.0266
35180	[illegible]	3960.0	25713.1	693.0	641.0	1334.0	.0269
35185	[illegible]	1130.0	24513.6	611.3	684.0	1295.3	.0250
35190	[illegible]	1134.0	23013.4	1021.0	628.0	1649.0	.0341
35195	[illegible]	1512.0	39521.9	1305.5	411.0	1711.5	.0306
35205	[illegible]	619.0	41975.1	913.3	746.0	1660.3	.0280
35230	[illegible]	3197.0	44941.5	1357.1	152.0	1509.1	.0306
35235	[illegible]	1511.0	21158.6	592.4	842.0	1434.4	.0283
35245	[illegible]	2955.0	25867.9	940.8	579.0	1519.8	.0315
35250	[illegible]	2131.0	27729.9	884.5	607.0	1491.5	.0319
35340	HERITAGE PUBLIC SCHOOLS	10279.0	26565.8	905.5	589.0	1494.5	.0317

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NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
39160	SCHOOLCRAFT COMMUNITY SCHS	923.0	27277.9	818.3	636.0	1454.3	.0300
39170	VICKSBURG COMMUNITY SCHOOLS	2946.0	22628.4	611.0	747.0	1358.0	.0270
40020	FOREST AREA COMMUNITY S/D	620.0	34190.7	872.9	442.0	1314.9	.0255
40040	KALKASKA PUBLIC SCHOOLS	1849.0	55948.2	1163.7	105.0	1268.7	.0208
41010	GRAND RAPIDS CITY SCH DIST	37407.0	21533.1	646.0	879.0	1525.0	.0300
41020	GODWIN HEIGHTS PUBLIC SCHS	2337.0	55916.4	1672.5	354.0	2026.5	.0299
41025	NORTHVIEW PUBLIC SCHOOL DIS	3588.0	20133.1	604.0	832.0	1436.0	.0300
41026	WYOMING PUBLIC SCHOOLS	7705.0	24396.5	763.6	728.0	1491.6	.0313
41040	BYRON CENTER PUBLIC SCHOOLS	1630.0	31608.9	885.0	531.0	1416.0	.0280
41050	CALEDONIA COMMUNITY SCHOOLS	2215.0	29726.0	832.3	573.0	1405.3	.0280
41070	CEDAR SPRINGS PUBLIC SCHOOL	2549.0	18858.6	473.4	840.0	1313.4	.0251
41080	COMSTOCK PARK PUBLIC SCHOOL	1707.0	17659.2	531.0	919.0	1450.0	.0300
41090	EAST GRAND RAPIDS PUB SCHS	2753.0	30795.4	1219.5	521.0	1740.5	.0396
41110	FOREST HILLS PUBLIC SCHOOLS	5067.0	36574.4	1170.4	360.0	1530.4	.0320
41120	GODFREY LEE PUBLIC SCH DIST	1201.0	24504.8	835.6	639.0	1474.6	.0341
41130	GRANDVILLE PUBLIC SCHOOLS	4350.0	28500.0	798.0	561.0	1359.0	.0280
41140	KELLOGGSVILLE PUBLIC SCHOOL	2187.0	27645.8	853.0	593.0	1446.0	.0308
41145	KENOWA HILLS PUBLIC SCHOOLS	3293.0	36275.4	1052.0	385.0	1437.0	.0290
41150	KENT CITY COMMUNITY SCHOOLS	1545.0	16969.6	437.0	937.0	1374.0	.0257
41160	KENTWOOD PUBLIC SCHOOLS	7160.0	28155.1	819.3	581.0	1400.3	.0291
41170	LOWELL AREA SCHOOL DISTRICT	3155.0	22436.0	563.1	768.0	1331.1	.0251
41210	ROCKFORD PUBLIC SCHOOLS	4229.0	22194.2	621.4	765.0	1386.4	.0280
41240	SPARTA AREA SCHOOLS	2654.0	22597.4	593.2	712.0	1305.2	.0262
43040	BALDWIN COMMUNITY SCHOOLS	974.0	71850.7	1704.3	154.0	1858.3	.0237
44010	LAPEER COMMUNITY SCHOOLS	8617.0	22362.2	599.5	769.0	1368.5	.0268
44020	ALMONT COMMUNITY SCHOOLS	1547.0	26084.6	623.0	565.0	1188.0	.0239
44050	DRYDEN COMMUNITY SCHOOLS	837.0	27590.1	682.5	566.0	1248.5	.0244
44060	IMLAY CITY COMMUNITY SCHOOL	2344.0	27027.4	651.5	600.0	1291.5	.0255
44090	NORTH BRANCH AREA SCHOOLS	2436.0	18646.8	428.6	779.0	1207.6	.0230
45010	GLEN LAKE COMMUNITY SCH DIS	717.0	67273.1	1128.8	102.0	1230.8	.0168
45020	LELAND PUBLIC SCHOOL DIST	321.0	134601.0	1649.8	111.0	1760.8	.0120
45040	NORTHPORT PUBLIC SCHOOL DIS	286.0	94497.5	1624.2	86.0	1714.2	.0165
45050	SUTTONS BAY PUBLIC SCH DIST	757.0	37654.5	891.4	344.0	1235.4	.0235
46010	ADRIAN CITY SCHOOL DISTRICT	5595.0	26465.9	767.5	620.0	1387.5	.0290
46020	ADDISON COMMUNITY SCHOOLS	1608.0	31170.8	716.9	472.0	1188.9	.0230
46040	BLISSFIELD COMMUNITY SCHOOL	1782.0	42675.7	1088.2	174.0	1262.2	.0255
46050	BRITTON MACON AREA SCH DIST	604.0	35928.2	934.1	356.0	1290.1	.0260
46060	CLINTON COMMUNITY SCHOOLS	1287.0	31561.0	796.0	450.0	1246.0	.0252
46070	DEERFIELD PUBLIC SCHOOLS	526.0	29146.7	743.2	530.0	1273.2	.0255
46080	HUDSON AREA SCHOOLS	1492.0	24193.2	580.6	671.0	1251.6	.0240
46090	MADISON SCHOOL DISTRICT	775.0	[illegible]	1043.4	306.0	[illegible]	.0280
46100	MORENCI AREA SCHOOLS	1090.0	24603.6	604.3	636.0	1240.3	.0245
46110	ONSTED COMMUNITY SCHOOLS	1718.0	26045.7	617.0	526.0	1143.0	.0220
46130	SAND CREEK COMMUNITY SCHOOL	989.0	29069.7	784.2	560.0	1344.2	.0270
46140	TECUMSEH PUBLIC SCHOOLS	3644.0	25532.3	745.5	657.0	1402.5	.0292
47010	BRIGHTON AREA SCHOOLS	5308.0	25922.8	741.8	657.0	1398.8	.0286
47030	FOWLERVILLE COMMUNITY SCHS	2256.0	22995.7	703.7	761.0	1464.7	.0306
47060	HARTLAND CONSOLIDATED SCHS	3327.0	27303.8	773.2	617.0	1390.2	.0283
47070	HOWELL PUBLIC SCHOOLS	6234.0	29235.3	816.7	535.0	1351.7	.0264
47080	PINCKNEY COMMUNITY SCHOOLS	3474.0	27902.9	735.2	557.0	1292.2	.0263
48040	TAHQUAMENON AREA SCHOOLS	1792.0	25426.3	556.8	620.0	1176.8	.0219
49010	ST IGNACE CITY SCHOOL DIST	1037.0	18040.5	406.8	770.0	1176.8	.0225
49040	LES CHENEAUX COMM SCH DIST	463.0	55568.5	1350.0	85.0	1435.0	.0230
49055	ENGADINE CONSOLIDATED SCHS	533.0	54071.4	1011.1	123.0	1134.1	.0187
49110	MACKINAC ISLAND PUB SCHOOLS	136.0	71766.2	1396.6	280.0	1676.6	.0195

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NUMBER	SCHOOL DISTRICT	PUPILS	S+E.V.	LOCAL	STATE	TOTAL	TAX RATE
50310	CENTERLINE PUBLIC SCHOOLS	4955.0	43744.1	1356.2	181.0	1577.2	.0319
50330	EAST DETROIT CITY SCH DIST	9794.0	84223.6	854.8	740.0	1594.8	.0356
50350	ROSEVILLE COMMUNITY SCHOOLS	10704.0	93779.9	896.4	735.0	1631.4	.0348
50370	ANCHOR BAY SCHOOL DISTRICT	4743.0	41763.3	520.7	800.0	1320.7	.0251
50390	CENTER LINE SCHOOLS	1673.0	13954.3	839.7	500.0	1339.7	.0255
50470	CLINTONDALE CITY SCHOOLS	5420.0	47443.9	918.6	100.0	1522.6	.0336
50490	CHIPPEWA VALLEY SCHOOLS	5293.0	23064.0	864.4	606.0	1470.4	.0308
50550	FITZGERALD PUBLIC SCHOOLS	4257.0	45944.0	1267.1	376.0	1643.1	.0276
50610	FRASER PUBLIC SCHOOLS	7634.0	24963.2	754.1	707.0	1461.1	.0302
50630	LAKESHORE PUBLIC SCHOOLS	7482.0	19076.7	859.7	896.0	1555.7	.0346
50650	LAKEVIEW PUBLIC SCHOOLS	5491.0	29497.2	917.9	703.0	1620.9	.0360
50670	LAKE ORION PUBLIC SCHOOL	8616.0	31027.5	1386.0	552.0	1638.0	.0350
50690	LIVONIA PUBLIC SCHOOLS	5169.0	27140.2	1033.5	655.0	1688.5	.0351
50730	NEWAYGO COMMUNITY SCHOOLS	1366.0	31939.9	830.4	533.0	1363.4	.0260
50750	NORTHVILLE PUBLIC SCHOOLS	2010.0	39655.7	1116.3	299.0	1415.3	.0281
50770	OAKLAND COMMUNITY SCHOOLS	5103.0	31457.6	963.5	524.0	1487.5	.0306
50790	ORCHARD LAKE SCHOOLS	3767.0	48116.6	1519.3	82.0	1601.3	.0316
50810	PLYMOUTH CITY SCHOOLS	24269.3	26167.3	734.5	622.0	1356.5	.0281
50830	SAN JOSE PUBLIC SCHOOLS	5972.0	32129.8	1118.0	507.0	1625.0	.0346
50850	SAULT STE MARIE CONSOLIDATED SCHOOLS	3116.0	33466.7	1136.3	446.0	1582.3	.0339
50870	SAULT STE MARIE PUBLIC SCHOOLS	7606.0	21122.9	898.7	844.0	1542.7	.0331
50890	SOUTH LAKE SCHOOLS	4220.0	31473.0	1601.1	768.0	1351.1	.0301
50910	SAGINAW TOWNSHIP - COMMUNITY SCH	777.0	47342.5	1171.0	114.0	1285.0	.0244
50930	SAGINAW CONSOLIDATED SCHOOL	7211.0	37799.7	947.9	328.0	1325.9	.0264
50950	SAGINAW AREA PUBLIC SCHOOL	2536.0	35743.3	845.3	340.0	1185.3	.0236
50970	ST CLAIR COMMUNITY SCHOOLS	1849.0	22663.0	589.8	736.0	1325.8	.0260
50990	SAULT AREA COMMUNITY SCHOOL	3480.0	9671.2	212.6	917.0	1129.6	.0220
51010	SEBEWAING PUBLIC SCHOOLS	2044.0	17339.7	367.5	652.0	1019.5	.0200
51030	SHELBY TOWNSHIP SCHOOLS	484.0	24939.0	644.2	539.0	1183.2	.0223
51050	SOUTH HAVEN CITY SCHOOLS	2114.0	34401.1	972.1	361.0	1333.1	.0264
51070	SOUTH LAKE SCHOOL DIST	1906.0	21968.9	970.7	792.0	1762.7	.0268
51090	SOUTHFIELD CITY SCHOOL DIST	17431.0	21319.7	516.7	750.0	1266.7	.0233
51110	SOUTHGATE CITY SCHOOL DIST	696.0	26426.8	703.6	652.0	1357.6	.0267
51130	SPRINGFIELD TOWNSHIP SCHOOL DIST	2844.0	27731.2	583.9	555.0	1138.9	.0227
51150	STURGIS AREA SCHOOL DIST	2930.0	41010.6	1020.1	67.0	1717.1	.0157
51170	SUTTONS BAY PUBLIC SCHOOLS	2370.0	27559.3	674.0	567.0	1241.0	.0245
51190	TAWAS AREA SCHOOL DIST	2745.0	31911.0	998.7	308.0	1306.7	.0260
51210	TECUMSEH PUBLIC SCHOOL DIST	1444.0	32944.0	764.8	446.0	1209.8	.0235
51230	TRAVERSE CITY AREA PUBLIC SCHOOL	3968.0	21433.2	552.5	736.0	1288.5	.0257
51250	TRENTON PUBLIC SCHOOLS	6700.0	25813.2	611.4	639.0	1250.4	.0254
51270	TROY SCHOOL DISTRICT	8537.0	40013.3	960.5	847.0	1807.5	.0249
51290	UTICA COMMUNITY SCHOOLS	13511.0	27016.5	822.2	594.0	1416.2	.0330
51310	WARREN CONSOLIDATED SCHOOLS	11319.0	50317.2	1472.0	98.0	1570.0	.0270
51330	WARREN CONSOLIDATED SCHOOL DIST	22860.0	21162.4	781.6	575.0	1356.6	.0268
51350	WARREN CONSOLIDATED SCHOOL DIST	14491.0	19151.6	513.7	929.0	1442.7	.0283
51370	WATERFORD SCHOOL DIST	21444.0	14433.6	515.5	861.0	1376.5	.0273
51390	WAYNE-WESTLAND COMMUNITY SCHOOLS	11699.0	37336.9	759.4	274.0	987.4	.0190
51410	WEST BLOOMFIELD SCHOOL DIST	7350.0	27200.5	669.8	523.0	1192.8	.0229
51430	WYANDOTTE CITY SCHOOLS	5696.0	26382.5	1384.6	117.0	1496.6	.0285
51450	ALLEGAN PUBLIC SCHOOL DIST	3494.0	25504.1	739.0	556.0	1295.0	.0250
51470	BENTON HARBOR AREA SCHOOLS	6761.0	14317.0	499.1	836.0	1335.1	.0272
51490	BERRIEN SPRINGS PUBLIC SCHOOLS	1949.0	30033.6	772.6	485.0	1257.6	.0250
51510	BUCHANAN CITY SCHOOL DISTRICT	2114.0	23114.2	601.0	767.0	1368.0	.0260
51530	DEARBORN PUBLIC SCHOOL DIST	27744.0	48478.1	1356.6	319.0	1675.6	.0277
51550	EASTERN CENTRAL SCHOOL DISTRICT	2142.0	33604.3	816.9	425.0	1241.9	.0247

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NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
58100	SUMMERFIELD SCHOOL DISTRICT	1326.0	20386.2	504.6	777.0	1281.6	.0247
58110	WHITEFORD AGR SCHOOL DIST	1098.0	33764.6	844.1	420.0	1264.1	.0250
59020	CARSON CITY CRYSTAL AREA SD	1666.0	21505.9	554.9	759.0	1313.9	.0258
59045	MONTABELLA COMM SCHOOL DIST	1593.0	23847.4	572.3	629.0	1201.3	.0240
59070	GREENVILLE PUBLIC SCHOOLS	3691.0	23735.3	569.6	669.0	1238.6	.0240
59080	TRI COUNTY AREA SCHOOLS	1668.0	21120.6	506.9	704.0	1210.9	.0240
59090	LAKEVIEW COMMUNITY SCHOOLS	2019.0	24152.6	555.5	653.0	1208.5	.0230
59125	CENTRAL MONTCALM PUBLIC SCH	2040.0	18219.2	419.0	866.0	1285.0	.0230
59150	VESTABURG COMMUNITY SCHOOLS	929.0	13971.3	330.4	956.0	1286.4	.0236
60010	ATLANTA COMMUNITY SCHOOLS	628.0	40953.7	1125.9	132.0	1257.9	.0230
60020	HILLMAN COMMUNITY SCHOOLS	713.0	51340.1	1142.7	122.0	1264.7	.0220
61010	MUSKEGON CITY SCHOOL DIST	8544.0	20169.9	608.7	956.0	1564.7	.0301
61020	CITY OF MUSKEGON HEIGHTS SD	3431.0	13479.4	381.5	1054.0	1435.5	.0283
61060	MONA SHORES SCHOOL DISTRICT	5106.0	27641.3	829.2	605.0	1434.2	.0300
61065	OAKRIDGE PUBLIC SCHOOLS	1631.0	13254.2	335.3	961.0	1296.3	.0253
61080	FRUITPORT COMMUNITY SCHOOLS	3801.0	13865.0	361.0	974.0	1335.0	.0260
61120	HOLTON PUBLIC SCHOOLS	1107.0	15319.2	382.9	937.0	1319.9	.0250
61180	MONTAGUE AREA PUBLIC SCHOOL	1735.0	25112.2	718.2	716.0	1434.2	.0286
61190	ORCHARD VIEW SCHOOLS	3284.0	16723.0	424.8	905.0	1329.8	.0254
61210	RAVENNA PUBLIC SCHOOLS	1345.0	17320.9	450.3	857.0	1307.3	.0260
61220	REETHS PUFFER SCHOOLS	3909.0	25082.0	702.3	665.0	1367.3	.0280
61230	NORTH MUSKEGON PUBLIC SCHS.	1014.0	30724.9	967.8	468.0	1435.8	.0315
61240	WHITEHALL SCHOOL DISTRICT	2167.0	22409.1	627.5	768.0	1395.5	.0280
62040	FREMONT PUBLIC SCHOOL DIST	2722.0	29002.8	739.6	553.0	1292.6	.0255
62050	GRANT PUBLIC SCHOOL DISTRIC	1761.0	15978.1	391.5	856.0	1247.5	.0245
62060	HESPERIA COMM SCHOOL DIST	1152.0	16305.1	432.1	878.0	1310.1	.0265
62070	NEWAYGO PUBLIC SCHOOL DIST	1351.0	40845.0	919.0	254.0	1173.0	.0225
63010	BIRMINGHAM CITY SCHOOL DIST	11770.0	57579.7	1324.3	105.0	1429.3	.0230
63020	FERNDALE CITY SCHOOL DIST	6533.0	25660.1	948.4	736.0	1684.4	.0370
63030	PONTIAC CITY SCHOOL DISTRIC	23717.0	27893.3	872.7	770.0	1642.7	.0313
63040	SCH DIST CITY OF ROYAL OAK	12327.0	37132.7	1394.0	425.0	1819.0	.0375
63050	BERKLEY CITY SCHOOL DISTRIC	6186.0	30043.7	1174.7	574.0	1748.7	.0390
63060	SOUTHFIELD PUBLIC SCH DIST	11931.0	65217.7	2108.5	88.0	2196.5	.0323
63070	AVONDALE SCHOOL DISTRICT	3551.0	24770.0	830.7	674.0	1504.7	.0322
63080	BLOOMFIELD HILLS SCHOOL DIS	4373.0	57303.6	1806.8	134.0	1940.8	.0315
63090	CLARENCEVILLE SCHOOL DIST	2860.0	29344.6	1084.3	593.0	1677.3	.0369
63100	NOVI COMMUNITY SCHOOLS	3057.0	44903.4	1438.7	102.0	1540.7	.0320
63110	OXFORD AREA COMM SCH DIST	3534.0	29243.8	819.9	576.0	1395.9	.0280
63130	HAZEL PARK CITY SCHOOL DIST	7454.0	16230.4	556.8	973.0	1529.8	.0335
63140	MADISON PUBLIC SCHOOLS	3697.0	18549.4	585.0	890.0	1475.0	.0315
63150	TROY PUBLIC SCHOOL DISTRICT	11514.0	47393.9	1246.8	252.0	1498.8	.0263
63160	WEST BLOOMFIELD SCHOOL DIST	5757.0	37276.8	1272.3	334.0	1606.3	.0341
63180	BRANDON SCHOOL DISTRICT	2564.0	23777.5	641.5	665.0	1306.5	.0270
63190	CLARKSTON COMM SCH DIST	7007.0	21920.2	632.8	809.0	1441.8	.0290
63200	FARMINGTON PUBLIC SCH DIST	13931.0	39162.4	1405.9	336.0	1741.9	.0359
63210	HOLLY AREA SCHOOL DISTRICT	4435.0	23695.9	639.9	695.0	1334.9	.0270
63220	HURON VALLEY SCHOOLS	10338.0	23617.7	768.3	751.0	1519.3	.0325
63230	LAKE ORION COMMUNITY SCHOOL	6131.0	23103.8	655.9	735.0	1390.9	.0284
63240	SOUTH LYON COMMUNITY SCHOOL	4335.0	33626.9	833.6	490.0	1323.6	.0270
63250	OAK PARK CITY SCHOOL DIST	4143.0	58148.2	1979.4	375.0	2354.4	.0340
63260	ROCHESTER COMMUNITY SCH DIS	10404.0	34425.0	1033.1	403.0	1436.1	.0300
63270	CLAWSON CITY SCHOOL DISTRIC	3502.0	28544.7	917.7	689.0	1606.7	.0320
63280	LAMPHERE PUBLIC SCHOOLS	4047.0	45582.8	1580.9	212.0	1792.9	.0325
63290	WALLED LAKE CONS SCH DIST	11435.0	30662.5	985.4	561.0	1546.4	.0321
63300	WATERFORD SCHOOL DISTRICT	17156.0	22560.1	685.4	819.0	1504.4	.0304

CURRENT DATA - 1978

		PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
64340	SCHOOL DISTRICT	1893.0	2285647	618.2	754.0	1372.2	.0270
64340	MARY PUBLIC SCHOOL DISTRICT	324.0	523030	1331.1	81.0	1412.1	.0254
64370	PENTWATER PUBLIC SCHOOL DIS	1559.0	1809938	453.4	830.0	1283.4	.0250
64380	SHELBY PUBLIC SCHOOLS	993.0	1761545	427.2	846.0	1273.2	.0242
64390	MUSKEGON AREA CITY AREA SCH	27603.0	42119989	1053.0	220.0	1273.0	.0250
65010	BLOOMFIELD COMMUNITY SCH DIST	296.0	661090	787.3	695.0	1482.3	.0302
65015	FARMINGTON CREEK CONS S/D	722.0	1601844	448.5	957.0	1405.5	.0280
65050	FARMINGTON AREA SCHOOLS	1376.0	1955940	492.1	838.0	1330.1	.0252
65070	WHITE PINE SCHOOL DISTRICT	487.0	923794	1422.5	33.0	1455.5	.0272
67020	EVART PUBLIC SCHOOLS	1207.0	3692282	649.2	347.0	1196.2	.0230
67030	MARION PUBLIC SCHOOLS	920.0	3089432	679.8	509.0	1188.8	.0220
67050	PINE RIVER AREA SCHOOLS	1369.0	2190490	697.1	594.0	1291.1	.0240
67070	REED CITY PUBLIC SCHOOLS	2119.0	3119569	720.7	473.0	1193.7	.0230
68010	ALCONA CENTRAL SCHOOLS	876.0	1441983	952.6	204.0	1156.6	.0215
68030	HARRISVILLE AREA SCHOOL DIST.	509.0	854707	1378.0	89.0	1467.0	.0210
68050	OSCODA COMMUNITY SCHOOLS	2695.0	4750315	1112.4	105.0	1227.4	.0236
68070	MICHIGAN CENTER SCHOOLS	747.0	1541114	1461.1	121.0	1582.1	.0196
68090	HANOVER-HORTON SCHS	1220.0	2426132	937.6	263.0	1220.6	.0236
69010	ALBION PUBLIC SCHOOL DIS	5766.0	3692044	1185.0	338.0	1523.0	.0302
70020	ALLEGAN CITY SCHOOL DISTRICT	5273.0	3152114	1005.5	449.3	1454.5	.0300
70040	BLOOMINGDALE PUBLIC SCHOOL DIS	812.0	2474846	670.6	673.0	1343.6	.0271
70060	WEST BRANCH PUBLIC SCH DIST	2330.0	2752343	744.8	619.0	1413.8	.0298
70080	COOPERSVILLE PUBLIC SCH DIS	2335.0	2197043	567.1	793.0	1360.1	.0260
70100	JENISON PUBLIC SCHOOL DIST	4394.0	2611227	505.7	842.0	1347.7	.0272
70120	GRANDVILLE AREA SCHOOL DIST	2452.0	2652750	695.3	564.0	1259.3	.0243
70140	ZEELAND PUBLIC SCHOOLS	2162.0	2427220	755.3	734.0	1489.3	.0303
70160	HOLLAND AREA SCHOOL DIS	2469.0	3941149	1114.0	299.0	1413.0	.0293
70180	ALLENDALE PUBLIC SCHOOLS	1334.0	4115559	900.1	248.0	1148.1	.0218
71060	BENTON HARBOR AREA SCHOOL DIS	479.0	4606994	1206.4	132.0	1338.4	.0258
71080	BERRIEN SPRINGS CITY AREA SCHOOLS	1339.0	4664749	1003.6	255.0	1258.6	.0247
72010	BRANDON SCHOOL DIST	1691.0	6019982	1240.0	78.0	1318.0	.0254
72020	DAVISBURG COMMUNITY SCHOOLS	1752.0	5048949	1106.5	109.0	1215.5	.0184
72030	HOLLY AREA SCHOOL DISTRICT	1874.0	2762666	878.5	684.0	1562.5	.0318
72040	LAKE ORION COMMUNITY SCHOOLS	1991.0	1733955	540.1	1042.0	1582.1	.0330
72060	OXFORD AREA COMMUNITY SCHS	7145.0	3472645	1124.1	335.0	1459.1	.0293
72080	ROCHESTER COMMUNITY SCHOOL DIST	2710.0	4662334	1244.0	295.0	1539.0	.0275
72100	ROMEO COMMUNITY SCHOOLS	3733.0	2074440	503.1	774.0	1277.1	.0242
72110	ROYAL OAK SCHOOL DISTRICT	2688.0	1629110	357.5	837.0	1194.5	.0220
72140	SOUTH LAKE SCHOOL DIST	5504.0	1749313	443.6	899.0	1342.6	.0277
72150	SOUTHFIELD-LATHRUP SCHOOL DIST	11539.0	5306745	1244.5	94.0	1338.5	.0235
72160	ST CLAIR SHORES SCHOOL DISTRICT	1713.0	2660319	689.1	633.0	1252.1	.0260
72180	SYLVAN LAKE SCHOOL DIST	2154.0	3150000	744.6	514.0	1258.6	.0259
72200	TROY SCHOOL DISTRICT	14799.0	2243333	557.6	837.0	1393.8	.0266
72220	WALLED LAKE CONSOLIDATED SCHS	17500.0	1994982	493.7	818.0	1311.7	.0259
72240	WATERFORD SCHOOL DISTRICT	20260.0	2611827	573.8	810.0	1383.8	.0285
72260	WEST BLOOMFIELD SCHOOL DIST	11600.0	2162945	622.4	802.0	1424.4	.0295
72280	WHITE LAKE COMMUNITY SCH DIST	3494.0	3015945	776.9	469.0	1245.9	.0253
72300	WILLIAMSTON COMMUNITY SCH DIST	1750.0	2434744	534.3	775.0	1359.3	.0240
72320	YPSILANTI COMMUNITY SCHOOLS	5143.0	6147249	1291.1	91.0	1382.1	.0220
73010	CHEBOYGAN AREA SCHOOLS	2510.0	5364932	1222.6	418.0	1640.6	.0228
73020	INDIAN RIVER CONSOLIDATED SCH	1210.0	2292501	511.9	625.0	1136.9	.0223
73030	MACKINAC ISLAND PUBLIC SCHOOLS	2547.0	3244145	715.2	455.0	1170.2	.0223
73040	MACKINAW CITY PUBLIC SCHOOLS	1177.0	3009147	842.6	519.0	1361.6	.0243
73050	MORAN TWP CONS SCHS DIST	411.0	2185917	612.7	770.0	1382.7	.0263
75030	CENTREVILLE PUBLIC SCHOOLS	973.0	2105945	537.0	764.0	1301.0	.0255

CURRENT DATA - 1978

NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
75002	[illegible] COMMUNITY SCHOOL DIST	1090.0	29320.2	733.0	561.0	1294.0	.0250
75052	CENTRALIA PUBLIC SCH DIST	1646.0	24667.1	555.5	658.0	1253.5	.0225
75102	[illegible] COMMUNITY SCHOOL DIS	906.0	24816.9	620.4	672.0	1292.4	.0250
75152	[illegible] COMM SCH DIST	1517.0	33617.2	874.0	405.0	1279.0	.0200
75202	THREE RIVERS COMMUNITY SCHS	3421.0	24432.1	728.0	580.0	1308.0	.0252
76202	BROWN CITY COMM SCHOOL DIST	1267.0	24946.0	553.1	665.0	1218.1	.0230
76272	CARESVILLE PT SANILAC SCH	3144.0	32798.5	721.6	466.0	1187.6	.0220
76342	CARMELLA LEXINGTON COMM SD	2729.0	32191.6	724.3	458.0	1182.3	.0225
76392	DECATURVILLE COMM SCHOOL DIS	1152.0	37476.9	859.1	343.0	1196.1	.0227
76442	MARLETTE COMMUNITY SCHOOLS	1841.0	25546.4	660.1	651.0	1311.1	.0255
76182	PECK COMMUNITY SCHOOL DIST	665.0	24937.2	529.9	661.0	1190.9	.0212
76210	[illegible] COMM SCHOOL DIST	1624.0	31452.7	636.9	458.0	1094.9	.0202
77012	CARISTIQUE AREA SCHOOLS	1812.0	30775.9	637.5	466.0	1103.5	.0207
76222	[illegible] AREA SCHOOLS	1403.0	21483.3	536.6	737.0	1273.6	.0250
78032	CORUNNA AREA SCHOOLS	3239.0	34107.9	488.9	829.0	1317.9	.0270
78052	[illegible] COMM SCHOOL DIST	1159.0	18176.3	458.0	810.0	1268.0	.0252
78060	NEW LOTHROP AREA SCHOOLS	978.0	17487.6	370.7	831.0	1201.7	.0212
78070	PERRY PUBLIC SCHOOL DISTRICT	1479.0	16716.8	345.3	803.0	1148.3	.0230
78080	[illegible] PUBLIC SCHOOLS	2004.0	19411.7	478.7	676.0	1354.7	.0260
78110	[illegible] PUBLIC SCHOOL DIST	2975.0	22744.7	521.8	718.0	1239.8	.0229
78118	[illegible] PUBLIC SCHOOLS	5443.0	24321.9	637.2	673.0	1310.2	.0262
79010	[illegible] SCHOOLS	971.0	48133.1	1350.7	142.0	1477.7	.0277
79022	CARO CITY SCHOOLS	3030.0	20327.9	454.0	723.0	1227.0	.0245
79030	[illegible] PUBLIC SCHOOLS	2103.0	25576.1	534.5	577.0	1111.5	.0209
79042	KINGSTON COMMUNITY SCH DIST	865.0	23033.9	506.9	744.0	1250.9	.0220
79090	[illegible] COMMUNITY SCH DIST	1655.0	17836.6	428.1	847.0	1275.1	.0240
79110	[illegible] CITY SCHOOLS	2441.0	16756.8	385.4	820.0	1205.4	.0230
79122	[illegible] SCHOOLS	1270.0	47581.8	1167.8	120.0	1265.8	.0245
79145	[illegible] SCHOOLS AREA S	1144.0	55753.0	1334.1	109.0	1443.1	.0260
79160	VASSAR PUBLIC SCHOOLS	2356.0	21502.7	494.4	668.0	1162.4	.0220
80010	SOUTH HAVEN PUBLIC SCHOOLS	3439.0	20187.4	465.9	747.0	1212.9	.0231
80030	BANGOR PUBLIC SCHOOLS	1802.0	16659.8	382.4	916.0	1258.4	.0206
80040	[illegible] PUBLIC SCHOOLS	745.0	75713.2	1823.2	129.0	1952.2	.0241
80050	[illegible] SCHOOLS	1344.0	17906.8	424.3	543.0	1267.3	.0236
80080	[illegible] PUBLIC SCHOOLS	1376.0	16641.2	450.6	557.0	1407.6	.0271
80090	[illegible] PUBLIC SCHOOLS	1139.0	17993.0	423.4	745.0	1167.4	.0235
80120	HARTFORD PUBLIC SCHOOL DIST	1542.0	18781.5	424.1	879.0	1303.1	.0226
80130	[illegible] PUBLIC SCHOOL DIST	831.0	19238.8	501.7	811.0	1312.7	.0261
80140	[illegible] COMMUNITY SCHOOL DIS	5350.0	27344.0	727.3	632.0	1359.3	.0266
80150	[illegible] AREA SCHOOL DIST	2065.0	18049.9	424.2	750.0	1214.2	.0235
80160	NEW BALTIMORE PUBLIC SCHOOLS	2465.0	19791.8	544.1	843.0	1387.1	.0285
81010	[illegible] PUBLIC SCHOOLS	17934.0	62170.6	1936.8	107.0	2013.9	.0365
81020	[illegible] SCHOOL DISTRICT	2663.0	41700.1	1185.4	213.0	1398.4	.0285
81040	[illegible] COMMUNITY SCHOOL DIS	2134.0	34952.5	1005.8	115.0	1120.8	.0295
81070	[illegible] COMMUNITY SCHOOL DISTRICT	2947.0	36111.5	1047.7	509.0	1556.7	.0319
81080	[illegible] PUBLIC SCHOOLS	1359.0	36110.7	1047.7	371.0	1418.7	.0290
81100	[illegible] AREA SCHOOLS	2473.0	26000.7	711.7	576.0	1287.7	.0263
81120	[illegible] SCHOOL DISTRICT	3345.0	36172.8	1048.8	321.0	1369.8	.0280
81142	[illegible] AREA PUB SCH DIST	1148.0	32263.9	901.3	483.0	1381.3	.0279
81152	[illegible] COMMUNITY SCHOOL	1249.0	23749.7	633.1	805.0	1441.1	.0352
82010	[illegible] CITY SCHOOL DISTRICT	2J352.0	27931.0	715.2	871.0	1586.2	.0261
82020	ALLEN PARK PUBLIC SCHOOLS	3581.0	36542.2	1266.2	339.0	1605.2	.0346
82025	CHERRY HILL SCHOOL DISTRICT	3429.0	19318.1	553.5	907.0	1460.5	.0286
82030	DEARBORN CITY SCHOOL DIST	16J3*.0	72893.6	2179.1	171.0	2350.1	.0299

CURRENT DATA - 1979

NUMBER	SCHOOL DISTRICT	PUPILS	S.E.V.	LOCAL	STATE	TOTAL	TAX RATE
82040	SEABROOK SCH DIST NO.	4050.0	163464	501.0	956.0	1457.0	.0364
82045	[illegible] PARK SCHS	4063.0	[illegible]	1495.0	158.0	1653.0	.0349
82050	GARDEN CITY SCHOOL DISTRICT	8956.0	1446937	562.3	991.0	1553.3	.0300
82054	KASSEL POINTE PUBLIC SCHS	10170.0	547000	2001.6	59.0	2060.6	.0366
82055	[illegible] PUBLIC SCHOOLS	2250.0	478873	1060.3	444.0	1504.3	.0221
82075	[illegible] PARK CITY SCHOOLS	7119.0	[illegible]	695.3	950.0	1645.3	.0369
82080	INKSTER CITY SCHOOL DISTRICT	3964.0	119034	365.0	1172.0	1537.0	.0306
82090	[illegible] PARK PUBLIC SCHOOLS	7957.0	243044	849.1	594.0	1443.1	.0300
82095	[illegible] PUBLIC SCHOOLS	29075.0	345544	1260.9	440.0	1700.9	.0367
82100	PLYMOUTH CANTON COMM SCHS	15250.0	346443	1137.3	424.0	1561.3	.0338
82110	REFORD UNION SCHOOL DIST	6679.0	233734	833.3	794.0	1627.3	.0356
82120	RIVER ROUGE CITY SCHOOLS	3341.0	71634	1023.1	311.0	1334.1	.0225
82130	[illegible] COMMUNITY SCHOOLS	6166.0	320093	1186.1	546.0	1732.1	.0361
82150	SOUTH REDFORD SCHOOL DIST	9436.0	54695	1925.9	344.0	2269.9	.0331
82160	TAYLOR SCHOOL DISTRICT	20240.0	221364	791.4	862.0	1653.4	.0357
82165	[illegible] PUBLIC SCHOOLS	97.0.0	[illegible]	1779.2	79.0	1858.2	.0394
82180	[illegible] COMMUNITY SCHS	2254.0	[illegible]	744.3	904.0	1648.3	.0376
82170	WAYNE-WESTLAND COMM. DIST	6259.0	357503	1328.1	433.0	1761.1	.0371
82180	[illegible] CITY SCHOOL DIST	1407.0	69403	1845.3	132.0	1977.3	.0285
82200	[illegible] HEIGHTS SD	16444.0	359979	1319.3	385.0	1704.3	.0366
82230	CRESTWOOD SCHOOL DISTRICT	3867.0	316480	953.9	513.0	1466.9	.0301
82245	[illegible] COMMUNITY SCHOOLS	3636.0	245[illegible]	1018.3	654.0	1672.3	.0357
82260	[illegible] PUBLIC SCHOOL DIST	2274.0	[illegible]	1[illegible]	99.0	2[illegible]	.0286
82300	DEARBORN SCHOOL DISTRICT	4209.0	[illegible]	920.0	534.0	1454.0	.0350
82310	[illegible] PUBLIC SCHOOLS	2440.0	137[illegible]	1[illegible]	410.0	1810.6	.0[illegible]
82320	CITY OF [illegible] WOODS SCHOOL	1233.0	71390[illegible]	1756.2	74.0	1530.2	.0246
82340	[illegible] SCHOOL DISTRICT	4003.0	139036.0	347.7	940.0	1287.7	.0255
82345	[illegible] SCHOOL DISTRICT	4436.0	412[illegible]	1287.7	416.0	1703.7	.0313
82390	[illegible] PUBLIC SCHOOLS	4541.0	324[illegible]	1069.1	1555.0	2[illegible]	.0328
82[illegible]	[illegible] COMMUNITY SCH DIS	[illegible]	6[illegible]	1911.4	114.0	2[illegible]	.0300
82425	[illegible] CORPORATE COMMUNITY SCH DIS	6938.0	233[illegible]	959.3	636.0	1595.3	.0331
82430	[illegible] PUBLIC SCHOOLS	7909.0	1[illegible]	2[illegible]	518.0	1[illegible]	.0276
82510	[illegible] AREA PUBLIC SCHOOLS	3906.0	267[illegible]	668.1	574.0	1242.1	.0250
83010	[illegible] CONSOLIDATED SCHOOLS	836.0	2[illegible]	573.7	568.0	1141.7	.0230
83020	[illegible] CONSOLIDATED SCH DIS	779.0	34[illegible]	816.5	410.0	1226.5	.0249

APPENDIX B

COMPARISON OF FINANCE REVISION PROPOSALS

TABLE 31

SUMMARY OF DIFFERENCES (OR RANGE) IN DOLLARS PER PUPIL BETWEEN THE HIGHEST AND LOWEST SCHOOL DISTRICTS IN TERMS OF S.E.V., STATE AID, LOCAL REVENUES, AND TOTAL REVENUES FOR MICHIGAN K-12 SCHOOLS USING SELECTED FINANCE REVISION PROPOSALS

Analysis No.	Proposal	S.E.V.	State Aid	Local Revenues	Total Revenues
Base Yr.	1977-78	291,742.20	1,565.70	2,286.10	1,632.70
1	Tisch	145,870.90	1,521.30	1,143.10	*1,632.90
2	Tisch Variation	116,696.70	1,516.80	914.40	*1,632.20
3	Siljander	281,405.80	1,809.50	2,267.60	1,643.90
4	Siljander Variation A	226,624.70	1,564.10	1,817.50	1,644.30
5	Siljander Variation B	281,405.80	1,309.40	2,267.60	1,379.90
6	Siljander Variation C	281,405.80	1,387.50	2,267.60	1,379.90
7	Formula Change	*291,742.20	1,705.00	2,286.10	1,687.70
8	Formula Change	*291,742.20	1,667.00	2,286.10	1,744.70
9	Formula Change	*291,742.20	1,831.00	2,286.10	1,813.70

*No change from 1977-78 data (Differences under $1 may occur due to rounding)

TABLE 32

BEAVER ISLAND PUBLIC SCHOOLS FINANCE PROPOSAL DATA
IN DOLLARS PER PUPIL

Proposal	S.E.V.	Local Income	State Aid	Total Income
1977-78	124,189.70	1,130.10	.00	1,130.10
Tisch	62,094.90	565.00	565.00	1,130.00
Tisch Var.	49,675.90	452.10	678.00	1,130.10
Siljander	57,089.20	519.50	612.00	1,131.50
Siljander A	54,645.50	497.30	634.00	1,131.30
Siljander B	57,089.20	519.50	612.00	1,131.50
Siljander C	57,089.20	519.50	612.00	1,131.50
Analysis 7	124,189.70	1,130.10	.00	1,130.10
Analysis 8	124,189.70	1,130.10	.00	1,130.10
Analysis 9	124,189.70	1,130.10	.00	1,130.10

TABLE 33

BRIDGMAN PUBLIC SCHOOLS FINANCE PROPOSAL DATA
IN DOLLARS PER PUPIL

Proposal	S.E.V.	Local Income	State Aid	Total Income
1977-78	301,413.00	2,498.70	96.00	2,594.70
Tisch	150,706.50	1,249.40	1,345.00	2,594.40
Tisch Var.	120,565.10	999.50	1,595.40	2,594.90
Siljander	286,170.10	2,372.30	230.40	2,602.70
Siljander A	231,094.20	1,915.80	687.00	2,602.80
Siljander B	286,170.10	2,372.30	.00	2,372.30
Siljander C	286,170.10	2,372.30	.00	2,372.30
Analysis 7	301,413.00	2,498.70	96.00	2,594.70
Analysis 8	301,413.00	2,498.70	96.00	2,594.70
Analysis 9	301,413.00	2,498.70	96.00	2,594.70

TABLE 34

FOREST PARK PUBLIC SCHOOLS FINANCE PROPOSAL DATA
IN DOLLARS PER PUPIL

Proposal	S.E.V.	Local Income	State Aid	Total Income
1977-78	48,203.50	1,185.80	84.00	1,269.80
Tisch	24,101.70	592.90	677.00	1,269.90
Tisch Var.	19,281.40	474.30	795.00	1,269.30
Siljander	35,451.00	872.10	398.00	1,270.10
Siljander A	30,061.10	738.50	530.70	1,269.20
Siljander B	35,451.00	872.10	398.00	1,270.10
Siljander C	35,451.00	872.10	398.00	1,270.10
Analysis 7	48,203.50	1,185.80	169.00	1,354.80
Analysis 8	48,203.50	1,185.80	84.00	1,269.80
Analysis 9	48,203.50	1,185.80	169.00	1,354.80

TABLE 35

GWINN PUBLIC SCHOOLS FINANCE PROPOSAL DATA
IN DOLLARS PER PUPIL

Proposal	S.E.V.	Local Income	State Aid	Total Income
1977-78	9,671.20	212.60	917.00	1,129.60
Tisch	4,835.60	106.30	1,023.00	1,129.30
Tisch Var.	3,868.40	85.10	1,045.20	1,130.30
Siljander	4,764.30	104.70	1,026.10	1,130.80
Siljander A	4,469.50	98.30	1,032.60	1,130.90
Siljander B	4,764.30	104.70	1,026.00	1,130.70
Siljander C	4,764.30	104.70	1,026.10	1,130.80
Analysis 7	9,671.10	212.60	1,027.00	1,239.60
Analysis 8	9,671.10	212.60	917.00	1,129.60
Analysis 9	9,671.10	212.60	1,027.00	1,239.60

TABLE 36

LAKE CITY PUBLIC SCHOOLS FINANCE PROPOSAL DATA
IN DOLLARS PER PUPIL

Proposal	S.E.V.	Local Income	State Aid	Total Income
1977-78	37,336.90	709.40	278.00	987.40
Tisch	18,668.40	354.70	633.00	987.70
Tisch Var.	14,934.70	283.80	704.00	987.80
Siljander	18,209.90	349.40	643.00	992.40
Siljander A	16,535.90	328.10	664.00	992.10
Siljander B	18,387.90	349.40	643.00	992.40
Siljander C	18,387.90	349.40	643.00	992.40
Analysis 7	37,336.80	709.40	373.00	1,082.40
Analysis 8	37,336.80	709.40	278.00	987.40
Analysis 9	37,336.80	709.40	373.00	1,082.40

TABLE 37

NORTHVILLE PUBLIC SCHOOLS FINANCE PROPOSAL DATA
IN DOLLARS PER PUPIL

Proposal	S.E.V.	Local Income	State Aid	Total Income
1977-78	32,472.60	1,065.10	1,555.00	2,620.10
Tisch	16,236.30	532.60	2,088.00	2,620.60
Tisch Var.	12,989.00	426.00	2,194.00	2,620.00
Siljander	18,209.90	597.30	2,039.00	2,636.30
Siljander A	16,535.90	542.40	2,094.00	2,636.40
Siljander B	18,209.90	597.30	891.31	1,488.61*
Siljander C	18,209.90	597.30	1,387.50	1,984.80**
Analysis 7	32,472.50	1,065.10	1,705.00	2,770.10
Analysis 8	32.472.50	1,065.10	1,667.00	2,732.10
Analysis 9	32,472.50	1,065.10	1,831.00	2,896.10

*Total income limited to one-and-one-half times lowest district to be eligible for state aid
**Total income limited to two times lowest district to be eligible for state aid

BIBLIOGRAPHY

BIBLIOGRAPHY

Advisory Commission on Intergovernmental Relations. Financing Schools and Property Tax Relief--A State Responsibility. Washington, D. C.: Advisory Commission on Intergovernmental Relations, 1972.

"After the Election: Some Clues for '80," U. S. News & World Report 85 (November 27, 1978.):27-28.

Alexander, Arthur J. Inequality in California School Finance: Dimensions, Sources, Remedies. Santa Monica, Calif.: Rand Corporation, 1975.

Alexander, Kern; Corns, Ray; and McCann, Walter. Public School Law. St. Paul, Minn.: West Publishing Co., 1969.

Alexander, Kern; Corns, Ray; and McCann, Walter. Public School Law, 1975 Supplement. St. Paul Minn.: West Publishing Co., 1975.

Analysis of Michigan Public School Revenues and Expenditures 1976-77, Bulletin 1011. Michigan Department of Education.

Ashline, Nelson; Pezzulo, Thomas R.; Norris, Charles I. Educational Inequality and National Policy. Lexington, Massachusetts: Lexington Books, 1976.

Ashmore, Mary Kay. "Explaining School Funding to Your Community." Michigan School Board Journal 24 (June 1977):21-23.

Baratz, Joan C., and Moskowitz, Jay H. "Proposition 13: How and Why It Happened," Phi Delta Kappan 60 (September 1798):9-11.

Barikor, Cosy Nuaba. "The Equalizing Effects of State and Federal Funds in Michigan K-12 School Districts." M.A. project report, Andrews University, 1976.

Beach, Robert Michael. "An Analysis of Recent Educational Finance Trends for Selected States." Ed. D. dissertation, Indiana University, 1977.

Bell, Joseph George. "An Exploratory Study of the Use of Micro-Simulation for Modeling Alternative State of Washington Tax Proposals." Ph. D. dissertation, Washington State University, 1976.

Bendixsen, Marian F. In Search of Equity: School Finance Revisited. Washington, D. C.: National Committee for Support of the Public School, 1975.

Benson, Charles S. The Economics of Public Education, 2nd ed. New York: Houghton Mifflin Company, 1968.

Benson, Charles S., and Kelly, James A. The Rhode Island Comprehensive Foundation and Enhancement State Aid Program for Education. Providence: Rhode Island Commission to Study the Field of Education, 1966.

Berke, Joel S. Answers to Inequity: Analysis of the New School Finance. Berkeley, California: McCutchan Publishing Corporation, 1974.

Berke, Joel S,; Campbell, Alan K.; and Goettel, Robert J. Financing Equal Educational Opportunity. Berkeley, California: McCutchan Publishing Corporation, 1972.

"Berrien Politicians Shun Tax Crusader." St. Joseph (Mich.) Herald-Palladium, 10 July 1978, p. 1.

Borg, Walter R., and Gall, Meredith D. Educational Research. New York: David McKay Company, Inc., 1971.

Burke, Arvid J. "Local, State and Federal Financing of Locally Operated Elementary and Secondary Schools." In The Theory and Practice of School Finance. Edited by W. E. Gauerke and J. R. Childress. New York: Rand McNally, 1967.

Burnham, James. "Winners, Losers." National Review 30 (July 21, 1978):886.

"California: Taxpayers' Revolt." Newsweek 90 (March 6, 1978):30.

Carr, Fred Mirts. "Educational Revenue Potential of a Wealth Tax in Florida." Ph. D. dissertation, University of Florida, 1977.

Caesar, Gene. "Michigan Schools and the Crim-O'Neil Formula." Michigan School Board Journal 24 (April 1977):9, 26.

Caesar, Gene. New Equity in Michigan School Finance: The Story of the Bursley Act. Bethesda Md.: ERIC Document Reproduction Service, ED 084 683, 1973.

Cohen, David K. "The Economics of Inequality." Saturday Review 64 (April 19, 1969):64.

Cohen, Jacob. Statistical Power Analysis for the Behavioral Sciences. New York: Academic Press, 1969.

Coleman, James S. "The Concept of Equality of Educational Opportunity." In Equality of Educational Opportunity, pp. 16-25. Edited by LaMar P. Miller and Edmund W. Gordon. New York: AMS Press, Inc., 1974.

Coleman, James S. "What Is Meant by 'An Equal Educational Opportunity'?" Oxford Review of Education 1 (1975):27-29.

Coons, John E.; Clune, William H. III; and Sugarman, Stephen D. Private Wealth and Public Education. Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1970.

Cox, Millicent. Taxpayer Impacts of State-Wide Taxation for School Districts in California. Bethesda, Md. ERIC Document Reproduction Service, ED 127 694, 1976.

Crim, Bobby D. "A New Direction in Michigan School Finance," Michigan School Board Journal 23 (December 1976):31.

Cubberly, Ellwood P. School Funds and Their Apportionment. New York: Teachers College, Columbia University, 1905.

_____. Public School Administration. Boston: Houghton Mifflin Company, 1929.

Daly, Charles U., ed. The Quality of Inequality: Urban and Suburban Public Schools. Chicago: The University of Chicago Center for Policy Study, 1968.

Detroit Free Press, (November 9, 1978):1

Dowagiac (Mich.) Daily News, (April 5, 1978):1

Downie, N. M., and Heath, R. W. Basic Statistical Methods. New York: Harper & Row, Publishers, 1965.

"Election Result: Voters against Confusion on Tax Limits." Education U.S.A. 21 (November 13, 1978): 81-82.

Faxon, Jack. "The Time for a New School Aid Formula Has Arrived." Michigan School Board Journal 23 (March 1976):14.

"Finance Reform Not a Lost Cause: Some States Succeed." Phi Delta Kappan 59 (February 1978):434.

Firestine, Robert E. Income and Wealth in a Multi-Variate Classification of School Districts. Dallas: Department of Economics, University of Texas, 1976.

Forbes, Joseph. "Property Tax Reform in Michigan." Michigan School Board Journal 23 (September 1976): 26-29.

"From Taxpayers: Yes, The Revolt Still Lives." U. S. News & World Report 85 (November 20, 1978): 103-109.

Furst, Lyndon Gerald. "The Equalizing Effects of Federal Aid among California Elementary and Unified School Districts." Ed.D. dissertation, University of the Pacific, 1974.

Gast, Harry Jr. "Outline of Issues and Major Points--Headlee, Tisch and Voucher Proposals." Memo from the House of Representatives, Lansing, Michigan. September 25, 1978.

Goertz, Margaret E.; Moskowitz, Jay H.; and Sinkin, Judy G. Plain Talk about School Finance. Washington, D. C.: National Institute of Education, 1978.

Governor's Task Force on Property Tax Revision. "A Review of School Finance." Michigan School Board Journal 25 (August 1976):23-25.

Grovers, Harold M. "Property Tax--Effects and Limitations." The Property Tax: Problems and Potentials. Princeton, New Jersey: The Tax Institute of America, 1967, p. 20.

Guilford, J. P. Fundamental Statistics in Psychology and Education. New York: McGraw-Hill Book Company, 1956.

Guthrie, James W. "Proposition 13 and the Future of California's Schools." Phi Delta Kappan 60 (September 1978):pp. 12-15.

Guthrie, James W.; Kleindorfer, George B.; Levin, Henry M.; Stout, Robert T. Schools and Inequality. Cambridge, Massachusetts: The Massachusetts Institute of Technology, 1971.

Hanes, Carol E. and Jordan, K. Forbis. "A Multi-Factor Index Technique for State Education Funding." Paper presented to the annual meeting of the American Educational Research Association, 1976.

Harrison, Russell S. Equality in Public School Finance. Lexington, Massachusetts: Lexington Books, 1976.

Hazlett, Tom. "The Scare Tactics That Backfired." National Review 30 (July 21, 1978):887, 912.

Hempstead, Charles A. "Projected Costs and Equalizing Strengths of Ten Alternative State Aid Formulae for Illinois." Ed. D. dissertation, Illinois State University, 1970.

Hickrod, G. A. "Local Demand for Education: A Critique of School Finance and Economic Research Circa 1959-1969." Review of Educational Research (February 1971):35-49.

Hickrod, G. Alan, and Hubbard, Ben C. "Illinois School Finance Research." Dilemmas in School Finance, pp. 63-85. Edited by J. Alan Thomas and Robert K. Wimpelberg, Chicago: Midwest Administration Center, University of Chicago, 1978.

Hickrod, G. Alan, and Sabulao, Caesar M. Increasing Social and Economic Inequalities Among Suburban Schools. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1969.

House, Alvin, and Wood, Garland. "Michigan Property Tax Administration." Michigan Farm Economics (August 1977):1-4.

Hudgins, H. C. Jr. The Warren Court and the Public Schools. Danville, Ill.: The Interstate Printers and Publishers, Inc., 1970.

"Interim Report of the Governor's Task Force--A Review of School Finance." Michigan School Board Journal 23 (July 1976):14-15.

Johns, R. L. and Kimbrough, Ralph B. The Relationship of Socio-Economic Factors, Educational Leadership Patterns, and Elements of Community Power Structure to Local School Fiscal Policy. Washington, D.C.: U. S. Office of Education, 1968.

Johns, Roe L. Full State Funding of Education: Evolution and Implications. Pittsburgh: University of Pittsburgh Press, 1973.

Johns, Roe L. "Improving the Equity of School Finance Programs." Journal of Education Finance 1 (Spring 1976):540-549.

Johns, Roe L. "The Development of State Support for the Public Schools." Status and Impact of Educational Finance Programs, pp. 1-27. Edited by Roe L. Johns, Kern Alexander, and Dewey H. Stollar. Gainesville: National Education Finance Project, 1971.

Johns, Roe L., and Alexander, Kern. Alternative Programs for Financing Education. Gainesville, Florida: National Education Finance Project, 1971.

Johns, Roe L.; Alexander, Kern; Jordan, K. Forbis. Financing Education. Columbus, Ohio: Charles E. Merrill Publishing Company, 1972.

Johns, Roe L.; Alexander, Kern; Stollar, Dewey H. Status and Impact of Educational Finance Programs, Gainesville, Florida: National Educational Finance Project, 1971.

Johns, Roe L., and Morphet, Edgar L. The Economics & Financing of Education, 3rd ed. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975.

Johns, Thomas L., ed. Public School Finance Program 1971-72. Washington: Office of Education, 1972.

Jordan, K. Forbis, and Alexander, Kern, eds. Futures in School Finance: Working toward a Common Goal. Proceedings of the 17th National Conference on School Finance. Bloomington, Indiana: Phi Delta Kappa, 1975.

Kehoe, John Joseph. "The Consequences of a Need-Based Measure in a State Finance Program." Ph.D. dissertation, Pennsylvania State University, 1977.

Kelly, James A. Rethinking Educational Financing. San Francisco: Jossey-Bass Inc., Publishers, 1973.

Kopan, Andrews, and Walberg, Herbert. Rethinking Educational Equality. Chicago: McCutchan Publishing Corporation, 1974.

Kurland, Philip B. "Equal Educational Opportunity or The Limits of Constitutional Jurisprudence Undefined." In The Quality of Inequality: Urban and Suburban Public Schools, pp. 47-72. Edited by Charles U. Daly. The University of Chicago Center for Policy Study. Chicago: The University of Chicago Press, 1968.

Levin, Betsy, ed. Future Directions for School Finance Reform. Lexington, Massachusetts: D. C. Heath and Company, 1974.

Levin, Betsy; Muller, Thomas; Scanlon, William J.; and Cohen, Michael A. Public School Finance: Present Disparities and Fiscal Alternatives. Washington, D.C.: The Urban Institute, 1972.

"Life after Prop 13." Newsweek 92 (July 3, 1978):24.

Lindholm, Richard W. Property Taxation and the Finance of Education. Madison, Wisconsin: The University of Wisconsin Press, 1974.

Listokin, David. Educational Financing Reform: A Guide to Legislative Action. New Brunswick, New Jersey: Center for Urban Policy Research, Rutgers University, 1974.

Lobenherz, William. "Legislative Progress on a Local School Aid Formula for 1978-79." Michigan School Board Journal 25 (March 1978):20-23.

Maeroff, Gene I. "The Cupboard Is Still Bare in Toledo." Phi Delta Kappan 59 (February 1978):379.

McKenna, William J. "School Finances Bone of Contention." Pennsylvania School Journal (April 1972), pp. 171-173.

McMahon, Walter. "A Broader Measure of Wealth and Effort for Education Equality and Tax Equity." Journal of Education Finance 3 (Summer 1978):65-88.

Meek, Arthur Wilbur. "A State Model for Federal-State-Local Partnership in Public Elementary and Secondary School Finance Achieving Equal Educational Opportunity with a Conceptual Design for Governmental Interfaces Maintaining an Appropriate Balance in the Control of Educational Policy." Ph. D. dissertation, University of Michigan, 1976.

Meier, Robert C.; Newell, William T.; Pazer, Harold L. Simulation in Business and Economics. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1969.

Michelson, Stephan. "What Is a 'Just' System for Financing Schools? An Evaluation of Alternative Reforms." Law and Contemporary Problems 38 (Spring 1974):436-453.

Milliken, William G. School Finance Reform in Michigan. Michigan: Department of Housing and Urban Development, 1972.

Miner, J. Social and Economic Factors in Spending for Public Education. Syracuse, N. Y.; Syracuse University Press, 1963.

Mize, Joe H., and Cox, J. Grady. Essentials of Simulation. Englewood Cliffs, New Jersey: Prentice-Hall, 1968.

Moore, Roderick A. "Tax Limitation Another Way." Michigan School Board Journal 25 (September 1978):23-24.

Musgrave, Richard A., and Musgrave, Peggy B. Public Finance in Theory and Practice. New York: McGraw-Hill Book Company, 1973.

National Conference on School Finance. Futures in School Finance: Working toward a Common Goal. Bloomington, Indiana: Phi Delta Kappa, Inc., 1975.

National Educational Finance Project. Alternative Programs for Financing Education. Vol 5. Gainesville, Florida: National Educational Finance Project, 1971.

National Educational Finance Project. Status and Impact of Educational Finance Programs. Edited by Roe L. Johns; Kern Alexander; and Dewey H. Stollar. Vol. 4. Gainesville, Florida: National Educational Finance Project, 1971.

"Nationwide Cry: 'Cut Our Taxes!'" U. S. News & World Report 84 (June 19, 1978):17.

Netzer, Dick. Economics of the Property Tax. Washington, D. C.: The Brookings Institute, 1966.

Netzer, Dick. "The Incidence of the Property Tax Revisited." National Tax Journal 26 (December 1973): 515-535.

Odden, Allan. "School Finance Reform: Emerging Issues and Needed Research." In Dilemmas in School Finance, pp. 29-43. Edited by J. Alan Thomas and Robert K. Wimpelberg. Chicago: Midwest Administration Center, University of Chicago, 1978.

_____. School Finance Reform in the States: 1978. Denver: Education Commission of the States, 1978.

Odden, Allan; Augenblick, John; and Vincent, Phillip E. School Finance Reform in the States, 1976-77. Denver: Education Commission of the States, 1976.

"Ohio Squeeze." Newsweek 90 (October 31, 1977):111.

O'Neil, James E. "A Look at School Finance 1976-77." Michigan School Board Journal 23 (August 1976): 20-21.

Owen, John D. School Inequality and the Welfare State. Baltimore: John Hopkins University Press, 1974.

Paul, Diane B. The Politics of the Property Tax. Lexington, Massachusetts: Lexington Books, 1975.

Peck, John E. "More Equitable State Aid Formulas." School Management 18 (February 1974):13-15.

Perea, Jose A. "A Comparison of the Equalization Effects of Federal and State Public School Fund Distributions in New Mexico." Ph. D. dissertation, The University of New Mexico, 1972.

Peterson, George E., ed. Property Tax Reform. Washington: The Urban Institute, 1973.

Phelps, Edmund S. Private Wants and Public Needs, rev. ed. New York: W. W. Norton & Company, Inc., 1965.

Phelps, James L. "The Equal Yield Concept in Michigan Third-Year Results." Michigan School Board Journal 23 (November 1976):12.

Phelps, James L., and Smith, Douglas J. "California School Funding Case: An Instructive Comparison for Michigan." Michigan School Board Journal 24 (May 1977):22

Pincus, John. School Finance in Transition. Cambridge: Ballinger Publishers, 1974.

Pincus, John. "The Serrano Case: Policy for Education or for Public Finance?" Phi Delta Kappan 58 (November 1977):174.

Ranking of Michigan Public High School Districts by Selected Financial Data, 1976-77, Bulletin 1012. Michigan Department of Education.

Rasanond, Tharin. "Socio-Economic Variables and Illinois Education Tax Referenda, 1971-1976." Ed. D. dissertation, Illinois State University, 1976.

Rawlinson, F. D. "Michigan Ad Valorem Property Tax and the Equalization Process Series." Department of Equalization, Berrien County Courthouse, St. Joseph, Michigan. News Release No. 3, January 25, 1978, p. 2.

Rawlinson, F. D. "Property Tax Administration." Department of Equalization, Berrien County Courthouse, St. Joseph, Michigan. January 5, 1977.

Research Plan for the Congressionally Mandated Study of School Finance. Washington: U. S. Department of Health, Education and Welfare, January, 1979.

Sacks, Seymour; Ranney, D.; and Andrew, R. City Schools/ Suburban Schools: A History of Fiscal Conflict. Syracuse, N. Y.: Syracuse University Press, 1972.

St. Joseph (Michigan) Herald-Palladium (July 10, 1978):1

St. Joseph (Michigan) Herald-Palladium, (November 7, 1978):1

Sampter, Eugene C. State Aid and School Fiscal Policy. Western New York School Study Council, Buffalo. ERIC Document Reproduction Serivce, ED 011 400, 1962.

School District Expenditure and Tax Controls. Denver: Education Finance Center Research and Information Department, Education Commission of the States, August 1978.

"School Finance," Education Summary (October 15, 1978):2

Select Committee on Equal Educational Opportunity, United States Senate. Issues in School Finance. Washington, D.C.: U. S. Government Printing Office, 1972.

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

Shaker, William H. "Tax Limitation Brings New Hope for Michigan Education." Michigan School Board Journal 25 (September 1978):22-25, 30.

Shala, Donna E., and Williams, Mary F. "State Tax Politics, The Voters and School Finance Reform." Phi Delta Kappan 56 (September 1974):10-13.

Shannon, John. "The Property Tax: Reform or Relief?" Property Tax Reform, pp. 25-31. Edited by George Peterson, Washington, D. C.: The Urban Institute, 1973.

Shannon, Robert E. Systems Simulation, the Art and Science. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975.

Shapiro, George, and Rogers, Milton. Prospects for Simulation and Simulators of Dynamic Systems. New York: Spartan Books, MacMillan and Co., Ltd., 1967.

Shapp, Milton J. "It's Time for a New Approach to Financing Education." Social Education 40 (March 1976): 147-149.

Siljander, Mark D. "House Joint Resolution II." Lansing; House of Representatives, April 1978.

"Sound and Fury over Taxes." Time 111 (June 19, 1978): 13-20.

South Bend (Ind.) Tribune (September 15, 1978):21

South Dakota State Division of Elementary and Secondary Education, Pierre. Proposed State Aid Formula For South Dakota. Bethesda, Md.: ERIC Document Reproduction Service, ED 139 094, 1977.

"Spread of Homeowners' Revolt." U.S. News & World Report 84 (March 20, 1978):23-24.

Strayer, George D., and Haig, Robert Murray. "The Financing of Education in the State of New York." Report of the Educational Finance Inquiry Commission. Vol. 1. New York: MacMillan Co., 1923.

"Taxpayers in Revolt," Nation's Business 66 (July 1978): 19-22.

"Taxpayer Revolt Pays Off," U.S. News & World Report 86 (January 30, 1979):23-24.

"The Big Tax Revolt," Newsweek 91 (June 19, 1978):20.

"The Move to 'Equalize' Educational Spending." American School Board Journal 162 (April 1975):18-20.

"The Tisch Coalition Tax Proposal." Citizens Research Council of Michigan (August 30, 1978):1-4.

"The Tax Limitation Proposal of Taxpayers United." Citizens Research Council of Michigan (August 15, 1978):1-4.

Thomas, J. Alan, and Wimpelberg, Robert K., eds. Dilemmas in School Finance. Chicago: Midwest Administration Center, University of Chicago, 1978.

Toder, Eric J. Equalizing Educational Expenditures and a Welfare Analysis of Some Plans for Reform of Spending on Public Education. Bethesda, Md.: ERIC Document Reproduction Service, ED 144 253, January 31, 1975.

Vincent, Phillip E., and Adams, E. Kathleen. Fiscal Responses of School Districts. Denver: Education Commission of the States, 1978.

Walker, Bill Don. "A Comparison of Six Alternative Models for Equalization of Educational Expenditures in the Texas Public Schools." Ed. D. dissertation, Texas Technological University, 1977.

Weinheimer, Norman P. "State Aid to Education: Where Are We Now?" Michigan School Board Journal 24 (January 1977):5.

Wilkinson, Steven Paul. "An Exploratory Study of the Use of Micro-Simulation for Modeling Alternative State of Washington Tax Proposals." Ph.D. dissertation, Washington State University, 1976.

Wise, Arthur. Rich Schools - Poor Schools: The Promise of Educational Opportunity. Chicago: University of Chicago Press, 1968.

Wynn, Richard; De Young, Chris A.; and Wynn, Joanne Lindsay. American Education, 8th ed. New York: McGraw-Hill Book Company, 1977.

Yang, Thomas Wei Chi. Measurement of School Revenue. Equity in the States of Illinois, Michigan, and Kansas. Bethesda, Md.: ERIC Document Reproduction Service, ED 133 834, 1975.

Yang, Thomas W. C. and Chaudhari, Ramesh. A Study of the Relationship between Selected Socio-Economic Variables and Local Tax Effort to Support Public Education in Illinois. Normal, Illinois: Center for the Study of Educational Finance, Illinois State University, 1976.