

THE EQUALIZATION EFFECT OF FEDERAL AID
ON TEXAS PUBLIC SCHOOL FINANCE

by

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Chapter I

INTRODUCTION

Background Information

School districts throughout the United States have three major sources of revenue: local, state, and federal governments. There is no standard formula used to determine how much money is to come from each source. Instead, every state has its own method of figuring its distribution of local and state funds for education. The federal source, however, is not related to formulas which establish the relationship between state and local revenues. The distribution of federal funds is carried out independent of the considerations which determine the state and local revenue relationship. Hence, two of the three revenue sources are coordinated. The third, federal, is not.

Several reasons can be cited for the uncoordinated application of federal funds. First, federal programs are designed for special functional purposes. They are targeted toward specific populations and objectives without regard to local and state wealth.

Second, there is no constitutional mention of the federal government's role in education. Federal involvement is justified by implication through the General Welfare Clause of the Constitution, Article I, Section 8.¹ Without a specific mandate, federal involvement in education has developed into significance only within the past sixty years. Since the federal government is a relative

newcomer to the educational scene and since it is constitutionally impossible for one state to legislate for another, no unit of government has ever taken the initiative to coordinate all three sources of school revenue on an intra and interstate basis. For practical reasons, the national government is the only level of government capable of coordinating federal funds with state and local factors which cross state lines. Yet it can attempt to do so only under the critical scrutiny of those who are constantly mindful that the United States Constitution does not mention education either in its body or in any of its Amendments.

Third, it has always been and continues to be impossible for any single state to assume leadership within its jurisdiction on the coordination of federal funds because such funds are unreliable and subject to the congressional capriciousness that results from changing political winds. Such unreliability combined with the already mentioned target nature make planning with federal funds difficult, even when the desire to coordinate all three sources of revenue does exist.

Finally, there is a widespread distrust of federal intentions in education by many states. Since education is not mentioned by the Constitution, it falls under the coverage of the Tenth Amendment which reserves nondelegated and nonprohibited powers to the states.² With this reference, many state leaders jealously guard their "constitutional right" to manage education exclusive of federal interference. Consequently, federal involvement of any type is often actively resisted.

The contribution of federal funds to the nation's public elementary and secondary schools has increased from a level of 0.3 percent in 1920 to the 1978 level of 8.1 percent.^{3,4} This increase has been gradual over the past sixty years. In 1930, the federal percentage was 0.4. In 1940 it was 1.8, in 1950 2.9, in 1960 4.4, and in 1970 8.0. The highpoint was reached during the 1971-72 school year when the federal percentage was 8.9.⁵ These figures represent the federal contribution from a national perspective. They do not imply that the federal government contributed an amount of money equal to 8.1 percent of the total revenues in every state in 1978.

The range of federal contribution from one state to the next varies considerably. It has been mentioned that the federal contribution from a national perspective was 8.1 percent in 1978. In that same year, Mississippi received the highest percentage of federal revenue for public elementary and secondary education with a figure of 22.5. On the other extreme, New Jersey public schools received only 3.6 percent of their revenue from the federal government. Texas ranked nineteenth among the fifty states in percentage of federal revenue with a figure of 10.1.⁶

This range in federal contributions indicates that every state received a percentage of federal revenue at least as great as that of New Jersey. The amount of money in question is not insignificant when it is realized that New Jersey's 3.6 percent represented \$115 million of a national total of \$6.6 billion.⁷ With so much money being distributed and with no national equalization plan based on state financial ability, it is not surprising when accusations of

inequity are made. Many funds are allocated to states with high wealth indexes based on income or taxable property per pupil.

It should be mentioned that federal aid has never been designed with the intention of being financially equalizing. As already noted, many federal funds are targeted to affect specific groups in the school population. There has never been an attempt to narrow the revenue gap between rich and poor districts, although the attempt has been made to narrow the achievement gap between rich and poor students through such programs as Title I. Inequity can result, however, if those targeted low-income children happen to reside in wealthy school districts or if children who are not categorized as low-income, happen to reside in property poor school districts. Hence the effect of federal aid on state equalization efforts is a significant issue.

Purpose of the Study

The purpose of this study is to determine if federal aid to public elementary and secondary education in Texas is going where it is most needed. Do federal funds flow more into Texas school districts where the local tax base per pupil is relatively low? Or do they flow more into Texas school districts where the local tax base per pupil is relatively high? The purpose thus centers around examining the relationship between federal aid per pupil and tax base per pupil, and around examining the equalization effect of federal aid by attempting to determine if local districts are better off with or without it. It must be emphasized that such a determination is based

on the relative comparison of school districts with one another and with state averages that include and exclude federal aid. In an absolute comparison with itself, any school district will have greater per pupil expenditures with federal aid, no matter how small that aid may be. However, since no effort is made to coordinate federal aid with state and local wealth, it is conceivable that the gap between per pupil expenditures in rich and in poor districts is widened, rather than narrowed, by the application of such funds.

Hypotheses

Two null hypotheses describing the effect of federal aid in Texas will be tested for statistical significance. The first attempts to study the relationship between federal aid and local wealth. It is stated as follows:

There is no statistically significant relationship between federal aid per ADA and tax base per ADA in local school districts in Texas.

The second null hypothesis attempts to study the equalization effect of federal aid on Texas school districts. It is stated as follows:

There is no statistically significant relationship between federal aid to local school districts in Texas and equalization of revenues per pupil.

Significance of the Study

The significance of this study is in the application of the knowledge gained by accepting or rejecting the null hypotheses.

Depending on the outcome, the data produced will either support or criticize the existing system of providing federal aid to the local districts in Texas. Such support or criticism springs from the belief that any source of public educational revenue should promote equity by considering both need and ability to pay.

If the null hypotheses are accepted, it can be argued that federal aid policies should be altered to provide more help and equalization for poorer districts and less for wealthier ones. If the null hypotheses are rejected because federal aid is less equalizing or because there is a positive correlation between such aid and local wealth, the arguments for change are even stronger.

On the other hand, if the null hypotheses are rejected because federal aid is more equalizing or because there is a negative correlation between such aid and local wealth, justification for the present system is strengthened. The data would thus support the notion that the existing federal aid program is providing financial help in those districts where it is most needed.

Assumptions

Four assumptions are made in order to facilitate the structure of this study and the interpretation of its results. First, it is assumed that revenues per pupil provide an accurate index with which to evaluate the equalization effect of federal aid. It is beyond the scope of this study to attempt to measure equal educational opportunity in anything other than dollars per pupil. Attempts are sometimes made to objectively assess equality of opportunity by studying

educational output or achievement. Such efforts, however, are subject to numerous criticisms ranging from the cultural bias of standardized testing to the improper interpretation and application of the results of such testing.⁸

Second, it is assumed that the cost of living and thus the cost of providing educational services are approximately the same throughout the state of Texas. This assumption, like the first, is debatable. Specific variations in expenses can be referenced almost indefinitely. For example, the cost of heating classrooms in the Panhandle is greater than in the Rio Grande Valley. Nevertheless, it is assumed that such variations do not have a significant effect on the cost of educational services as a whole. Furthermore, it would be inappropriate to assume otherwise since neither the federal nor the state governments do. Federal aid to education is distributed throughout the country without regard to regional variations in cost of living. From the federal government's perspective, a dollar spent in Oregon is the same as a dollar spent in Florida. State aid to local school districts in Texas is also distributed without regard to regional variations in cost of living. Thus, the state legislature in Austin considers a dollar spent in Dallas to be the same as a dollar spent in El Paso.

Third, it is assumed that there are no intradistrict variances in revenue per pupil. It is realized that average revenues per pupil within a district may vary from one campus to the next and/or between grade levels. Nevertheless, it is beyond the scope of this study to consider any such variances in the statistical analysis of data.

Finally, it is assumed that the promotion of equity through financial equalization, not the targeting of special programs and populations for attention, should be the primary objective of federal aid to education.

Limitations

Limitations of this study are found in the availability of financial data on local school districts in Texas. The Texas Education Agency collects, organizes, summarizes, and distributes almost all of the school finance data available in the state. With over one thousand school districts in Texas, it would be an almost impossible task to gather accurate information from all of them without making use of central agency data. Thus, this study is limited to the use of raw data provided by the Texas Education Agency and on file in the Department of Educational Administration and Supervision at Texas Tech University.

Closely related to the limitation of availability, is the second limitation of data timeliness. In an optimum situation, the latest figures would be used to examine federal aid to Texas schools. In this study, however, figures for the most recently completed school year are not yet available. The data used represent the 1978-79 school year.

Delimitations

This study is delimited to public school districts that are under the jurisdiction of and receive financial support from the Texas

Education Agency. National and other state figures are referenced only for purposes of explanation and comparison.

It is also delimited to the measure of local wealth based on the value of taxable property per student. If the value of taxable property in the Laredo Independent School District is \$420 million and the number of students in average daily attendance is 20,000, Laredo's property value per student ratio would be \$21,000 ($\$420 \text{ million} / 20,000$). If the value of taxable property in the Abernathy Independent School District is \$280 million and the number of students in average daily attendance is 1,000, Abernathy's property value per student ratio would be \$280,000 ($\$280 \text{ million} / 1,000$). Using the delimitation defined above, Abernathy is considered to be a much wealthier school district than Laredo, even though the absolute value of property is greater in Laredo than in Abernathy.

Definitions and Abbreviations

Throughout the course of this study frequent use of abbreviations and school finance terminology will be used in order to simplify the text and be consistent with what is used in the related literature. The following is a list of such terms.

1. ADA A common abbreviation for Average Daily Attendance. The Texas Legislature has established that a "scholastic," as mentioned in the state constitution, is a child in Average Daily Attendance.⁹ ADA equals

average total enrollment minus absentees.

2. ADM An abbreviation for Average Daily Membership which equals total enrollment including absentees.
3. Assessment Ratio The ratio, expressed as a percentage, between taxable property value and total property value. If total property value is \$50 million, but only \$20 million of that amount is subject to taxation, the assessment ratio is 40 percent $[(\$20 \text{ million}/\$50 \text{ million}) \times 100]$.
4. Equalized Property Value Refers to the uniform valuation and assessment of property throughout the state to ensure that property in one part of the state is valued the same as property in another part, if, in fact, the two are of equal value. The property value of a school district, upon which the Texas Foundation School Program is based, is theoretically equalized by the state to prevent local officials from establishing unrealistically low values and assessments. Local officials have been

accused of doing so in the past in order to hold down taxes and thus please their constituents.

5. Equalization Refers to the provision or distribution of educational resources based on considerations of need and the ability to satisfy that need. The quantity of such resources is related directly to need and inversely to the ability to satisfy it.
6. Enrichment Refers to revenues derived from local taxes which are intended to meet operating costs above the level guaranteed by the state of Texas.
7. Federal Revenue Refers to all revenues from federal sources received directly by local school districts or through the state.
8. Index Value Refers to the agricultural use value of Texas land instead of its market value. Index value of property is simply determined by substituting the agricultural productivity value of openspace land devoted to agricultural production for the full market value of the same land.¹⁰ Thus,

index value is equal to or lower than market value.

9. I.S.D. An abbreviation for Independent School District.
10. LFA An abbreviation for Local Fund Assignment which is the amount of revenue a local school district is required to contribute to the Texas Foundation School Program.
11. Market Value Refers to the value of property determined by the actual sale price of comparable property.
12. PPE An abbreviation for Per Pupil Expenditure which means the average amount of money spent on each individual student.
13. PU An abbreviation for Personnel Unit which are allocated to the local districts by the state based on ADA.
14. Tax Base The amount of taxable property from which local school revenues can be generated. Index value of property determines the tax base in Texas.
15. Tax Effort Refers to the sacrifice involved in raising public money through taxation. If Sundown I.S.D. can raise \$1 million

in revenue with a tax rate of .002 applied to its index value, while Slaton must use a tax rate of .010 to raise the same amount, Slaton's tax effort is greater than that of Sundown.

16. TEA An abbreviation for Texas Education Agency.
17. Total Revenue Refers to all revenues received by local school districts from federal, state, and local sources with the exception of revenues derived locally from nontaxation sources. Examples of nontaxation sources are the sale of bonds and property as well as insurance settlements.

Summary of Chapter

Chapter I has introduced a study which will attempt to measure and evaluate the impact of federal aid to public elementary and secondary education in Texas. Background information was presented to emphasize the fact that federal funds are not coordinated with the distribution of state and local funds. Without such coordination, it is only logical to question the relationship of federal funds to local wealth and to the equalization of revenues per pupil. The purpose of this study was therefore established to examine the flow of federal funds into Texas with the intent of determining the extent of their

equalization effect. Two null hypotheses were presented. The first assumes that there is no relationship between federal aid and local tax base in Texas. The second assumes that federal aid is neither more nor less equalizing in terms of per pupil revenues. The significance of the study was established in order to show what possible interpretations could result from accepting or rejecting the null hypotheses. Assumptions, limitations, and delimitations were outlined to clarify and specify certain considerations which could otherwise mislead and confuse. Finally, definitions and abbreviations were presented in the interest of simplification and consistency.

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CHAPTER II

THE HISTORY AND POLITICS OF FEDERAL AID TO EDUCATION

History of Federal Aid

The history of the federal government's involvement in education has been divided chronologically by Tiedt into three sections: the Early Period from 1776 to the Civil War, the Middle Period from the Civil War to World War II, and the Contemporary Period from World War II to the present.¹ In addition to presenting these three historical eras, this chapter will display the amount of federal aid, discuss the reasons for it, and examine its present status.

The Early Period

Federal involvement during the Early Period began before the United States Constitution was even approved. The Continental Congress authorized the sale of public lands in what was then considered the Northwest by passing the Land Ordinance of 1785. The lands were to be divided into townships of thirty-six sections. Each section consisted of one square mile or 640 acres. One lot, known as Section Sixteen, was reserved in every township for the maintenance of public schools. By means of this land grant policy, the federal government was able to promote the establishment of a public school system.

The other major federal involvement during the Early Period was through the different Statehood Acts. As different territories became states, land grants from the federal government for education continued. Beginning with Ohio in 1802 and continuing through Hawaii

in 1959, over 98 million acres of land have been granted by the federal government to states for public schools.²

The Middle Period

Federal involvement in education during the Middle Period, between the Civil War and World War II, began with the Morrill Act of 1862. This act donated lands to the states and territories for the establishment of colleges. Sixty-eight institutions of higher education have been established under the Morrill Act including such reputable names as Massachusetts Institute of Technology, Ohio State University, and the University of California.³

After the Civil War, President Andrew Johnson established a Department of Education in 1867. Two years later, Congress reduced its size and importance by changing it to a bureau. Nevertheless, it has continued to exist and grow over the past century as it was shifted from one federal agency to another. In October, 1979, it was elevated to cabinet rank by President Jimmy Carter.⁴

In 1887, the Hatch Act added agricultural experimental stations to the land-grant colleges and in 1890, the second Morrill Act introduced permanent endowments which promoted the expansion of agricultural and mechanical schools. The final significant development during the Middle Period was the passage of the Smith-Hughes Act in 1917. It is the first major example of federal aid being provided to schools below collegiate level. Its purpose was to foster vocational education and home economics training for high school students. The money was allocated for vocational and home economics teacher

salaries, for the preparation of teacher trainees in these areas, and for the study of problems associated with teaching these subjects. Thus, the Smith-Hughes Act represented a significant shift from general federal grants such as the Land Ordinance of 1785 to targeted grants for specific purposes.

The Contemporary Period

Federal involvement in education during the Contemporary Period since World War II has grown tremendously. It began with the Lanham Act of 1941 which made funds available for school buildings, school services, and nursery schools for children of mothers who were involved in defense industries.

The Service Man's Readjustment Act, known as the GI Bill, was passed in 1944 to provide education and training for men and women returning from World War II service. The bill has been subsequently extended and modified to include Korean and Viet Nam veterans.

In 1946, Congress passed Public Law 396 establishing the National School Lunch Program. It provided for cash grants, surplus commodities, and milk subsidies. The "Type A" lunch was established and has since become a byword for school officials. The result was the growth of the school food industry into a billion-dollar-a-year business.⁵

In 1950, Congress passed two laws: Public Law 815 for school construction and Public Law 874 for school operating costs. These laws continued and expanded the Lanham Act of 1941. The funds they provide have become known as impact aid. The concept behind impact aid is that the federal government has a responsibility to provide

money for community services in lieu of taxes because federal property is not taxable, while those who work or live on such property still have children who must be educated at public expense. Public Law 874 funds have never been earmarked for any specific purpose. They may be spent on any of the operating costs incurred by a school district.

In 1958, Congress passed the National Defense Education Act to stimulate education in the science, foreign language, and mathematics areas. Its passage was a reaction to the successful Russian launch of a space satellite (Sputnik). Many Americans were shocked that the Soviet Union and not the United States had taken the lead in space exploration. This shock was transformed into an uneasiness about the adequacy of American education. The National Defense Education Act sought to alleviate such uneasiness.

The latest and most significant federal legislation affecting education was the Elementary and Secondary Education Act of 1965. It has since been amended and expanded several times. Nevertheless, its aim continues to be the improvement of education for the children of the poor and the promotion of research and innovation in elementary and secondary education.⁶ This act contains several parts or titles. The most significant part is Title I which strives to meet the educational needs of children from low income families. Some of the other major parts of this act are Title II which provides assistance to local districts in procuring library resources, textbooks, and other instructional materials; Title III which provides funds for innovation and educational service centers; Title IV which promotes educational

research, development, and training; and Title V which seeks to strengthen state departments of education.⁷ Subsequent amendments to the 1965 law have added assistance for handicapped children, migrants, bilingual education, and delinquents.

In summary, federal aid to the nation's public elementary and secondary schools centers around four major acts of legislation. First was the Smith-Hughes Act of 1917 which initiated aid to vocational education. Thereafter, successively introduced were aid to areas with large numbers of federal employees (Impact Aid); post Sputnik aid to improve the quality of America's technical skills (National Defense Education Act); and aid for the poor and handicapped as well as for educational innovation (Elementary and Secondary Education Act).

The Amount of Federal Aid

Having mentioned the major educational programs enacted through the years by the federal government, it is appropriate to quantify that aid in terms of dollars and percentages. The National Center for Education Statistics has figures available dating back to 1920. Although these data cover less than a third of our nation's history, they represent the most significant years of federal involvement. It must be remembered that federal aid to elementary and secondary schools did not begin in measurable quantities until the Smith-Hughes Act of 1917. Table 1 displays the federal contribution to public elementary and secondary education since 1920.

TABLE 1
 AMOUNT AND PERCENTAGE OF FEDERAL REVENUE
 RECEIPTS BY PUBLIC ELEMENTARY AND
 SECONDARY SCHOOLS, 1920 TO 1978

School Year Ending	Amount in Thousands of Dollars	Federal Percentage of Total Revenue
1920	2,475	0.3
1930	7,334	0.4
1940	39,810	1.8
1950	155,848	2.9
1960	651,639	4.4
1970	3,219,557	8.0
1978	6,575,000	8.1

Sources: Nancy B. Dearman and Valena White Plisko, The Condition of Education (Washington, D.C.: U.S. Government Printing Office, 1979): 146. Also Vance W. Grant and George C. Lind, Digest of Education Statistics (Washington, D.C.: U.S. Government Printing Office, 1979): 71.

Not displayed in Table 1 are the figures for the 1976-77 school year when the percentage of federal revenue reached its peak. During that year, the federal government contributed more than \$6.6 billion or 8.8 percent of the total revenue for public elementary and secondary schools in the United States.⁸

For the school year ending in 1978, the Texas public schools received \$484 million or 10.1 percent of their revenue from the federal government. For the same year, in absolute dollars, the range was from Nevada which received only \$11.7 million (5.2 percent) to California which received \$1 billion (11.2 percent) from the federal government. In percentages, the range was from a low of 3.6 in New

Jersey (\$115 million) to a high of 22.5 in Mississippi (\$134 million). Within this range, Texas ranked third in actual dollars received and nineteenth in percentage.⁹

Reasons for Federal Aid

Proponents of federal aid list several purposes to justify the programs, dollars, and percentages described above. First, federal programs are intended to cope with problems affecting only a relatively small number of school districts, even though they are national in scope.¹⁰ A recent example of this was the influx of Cuban refugees to South Florida. The federal bilingual programs will play a significant role in educating these Cubans so that the school districts in that part of the country do not have to bear the financial burden alone.

Second, there are national goals that may not be perceived by the states and local school districts.¹¹ The National Defense Education Act exemplifies this purpose. It was originally designed to emphasize those skills necessary to respond to the Russian space challenge. Third, the states and local districts cannot afford to undertake alone certain activities that are not cost effective.¹² Support for research and educational reform are examples. Lastly, only the federal government can provide any interstate equalization of expenditures to promote equal educational opportunity from a national perspective.¹³

Present Status of Federal Aid

In 1978, over \$9 billion in federal assistance was distributed to the states and local school districts through 132 distinct educational aid programs.¹⁴ The dollar amount is greater than that which

appears in Table 1 for 1978 because it includes post secondary aid whereas Table 1 refers only to elementary and secondary school aid. The 1980 Guide to Office of Education Programs describes thirty-three programs under Elementary and Secondary Education; seventeen programs under Occupational, Adult, Vocational, and Career Education; fourteen programs under Education for the Handicapped; seven for Indian Education; and seven for Library and Learning Resources.¹⁵ Other programs are listed under Post Secondary Education, International Studies, and Student Financial Assistance.

Many of these federal programs have picked up a title nickname by virtue of their being associated with a particular section of the law which authorized their existence. This use of titles to reference different programs can be confusing. The Elementary and Secondary Education Act of 1965, which initiated the use of different titles, has been amended several times since. Each amendment has added, deleted or changed title numbers. For example, Title IX is commonly thought of as that portion of the 1972 Educational Amendments dealing with equal opportunity for girls and women in physical education and athletics. Many Americans are familiar with this interpretation of Title IX because it has received significant coverage in the nation's sports pages. Few people realize, however, that Title IX also refers to federal programs for the gifted and talented and for the study of ethnic heritage. Nevertheless, the title terminology continues to be used among educators and within the federal bureaucracy.

Adding to the perplexity of over a hundred different federal programs is the lack of consistency in applying for them. Some

applications must go through the state education agency such as those for Title I money. Others, such as those for consumer education and impact funds, must go directly from the local school district to the federal government.

Most federal aid to education has been administered by the United States Office of Education within the Department of Health, Education, and Welfare. Additional programs are administered by the Department of Defense, the Department of Agriculture, the Department of the Interior, and other agencies.¹⁶ The point to be made is that the overall program of federal aid is administratively splintered into different departments and agencies, and burdened with nomenclature, qualifications, and specifications that the average citizen would find confusing. How successful the new Department of Education is in consolidating administrative control and in simplifying the overall program remains to be seen.

Politics of Federal Aid

Many decisions concerning the application of federal aid to education are made under the influence of political considerations. The quantity, the purpose, the delivery, and the control of federal aid are all determined in numerous instances by politics rather than by need. Significant amounts of federal money, of course, go to satisfy genuine needs. Often, however, even legitimate and appropriate applications of federal aid are the result of political compromise and conscience easing. Lobbyists and legislators feel more comfortable supporting the interests of their constituents whenever

they can unobtrusively attach those interests to a respectable cause. The result is a mixture of federal funding for programs and purposes that meet with general support and of federal funding for programs and purposes that satisfy constituent demands. Hence, some needs are met while others are ignored. At the same time, federal money is spent on programs and purposes for which there is no acute need, but for which there is substantial political support.

The remainder of this chapter will attempt to explain and analyze the most important political factors affecting federal aid. It should be emphasized that almost all of these factors are inter-related. Thus, although they are listed and discussed separately, they do not exist in the political arena without affecting one another to some extent. For example, lobby and constituency are presented as separate factors, yet a lobby cannot exist without a constituency to support it (For example, the National Association for the Advancement of Colored People is considered to be one of the most powerful lobbies supporting school integration. It could not exist, however, were it not for a national constituency of Black voters, who are affected by many noneducation issues such as welfare reform and urban renewal.).

The Balancing Factor

The balancing factor refers to the tendency among legislators to balance what they have done for one group by doing something for another. It is an attempt to display and maintain the image of one who does something to help everybody. When such an image is developed,

the congressman can always reference something that he has done for the group from which he is soliciting votes -- no matter what that group may be.

For example, when the Morrill Act of 1862 was passed, Congress had no clear, defined educational project in mind. Senator Morrill himself knew very little of education. He simply wished "to do something for the farmer."¹⁷ Thus, his bill was based not on sound educational reason but on a desire to do something for the farmers in order to counter the things done for other groups in the nation's political body. In fact, the whole legislation surrounding the Morrill Act was carried out from beginning to end with almost no consideration of the educational problems involved. There was an entire absence of any educational conception as to what sort of colleges were to be created out of the money supplied by the federal government.¹⁸

The final version of the Elementary and Secondary Education Act of 1965 was also affected by the balancing factor. When the Title I formula was originally proposed by the Johnson Administration, it did not consider figures from the Aid to Families with Dependent Children (AFDC) program at all. These data were added in the House Committee at the insistence of some urban congressmen, led by former Representative Roman Pucinski of Chicago, as a factor to give big cities some extra funds.¹⁹ The formula change was never intended to be more than a slight modifying factor and extra help for big cities was played down to avoid the arousal of opposition. Hence, the adjusted formula was sold as a way to keep census data in line

with reality, since AFDC data were available on a very regular basis.²⁰

A final example of the balancing factor was evident during the 1978 debate over tax credits for private school tuition. In advocating such credits, Moynihan wrote that many middle-income Americans had a genuine grievance over the matter.²¹ These were the people who payed most of the taxes in America, but got few of the social services paid for by those taxes. Moynihan's implication was that tax credits were something middle-income Americans had coming to them. They deserved such legislation to balance out the social programs for which they were paying, but from which they were not benefitting.

The Economic Factor

The economic factor refers to the tendency to apply federal funds to manage the national or local economy instead of to meet educational needs. All federal aid to education legislation passes through the House Education and Labor Committee before becoming law. Members of this committee have a wide range of interests, concerns, and obligations. Their primary concern is the state of the nation's economy. Hence, they prefer to see that education programs contribute to and do not detract from a solution to the constant problems of recession and inflation. Committee chairman Carl D. Perkins of Kentucky and members John Brademan of Indiana and James O'Hara of Michigan issued the following statement with respect to the President's education budget for fiscal year 1976:

We share a deep concern that the President's proposed education budget actually detracts from a national effort to solve the economic crisis facing the nation. At a time when the American people face the two-headed monster of serious recession and run-away inflation, the federal budget should be drawn in such a way as to place emphasis on those aspects of spending which not only will provide a stimulus to a lagging economy, but also will encourage those activities which increase the individual productivity of American citizens.²²

Similar sentiments were expressed ten years earlier when Walter Heller, former presidential adviser, proposed returning some federal taxes to the states unconditionally. The idea was that such funds would most likely be used for education. Lyndon Johnson shelved the idea, but was said to be holding it for use when the economy needed a stimulant.²³

No discussion of economic factors affecting federal aid could omit the huge federal program which was originally designed to prop up the local economy in areas with a high concentration of nontaxable federal property and activity. School assistance for federally affected areas (impact aid), mentioned earlier in this paper as Public Laws 815 and 874, was initiated in 1950 to compensate local school districts for the cost of educating children when enrollment and availability of revenues from local sources are adversely affected by federal activities. It was originally intended to aid local districts inundated by military dependents during military build ups. For example, Midwest City, Oklahoma saw its school enrollment jump from 285 to 1500 in one year after Tinker Air Force Base opened nearby during the Korean War.²⁴

Even the strongest critics of impact aid agree that children whose parents live and work on federal property are associated with a clear loss of tax base to school districts which must provide educational services to them. But congressmen from districts without military installations wanted some of the federal money for their constituents. So the program has been expanded over the years to include Indians, those who work or live on federally subsidized public housing property, and all federal workers (even those who do not reside on federal land).

Currently, local school districts are eligible for impact aid if 3 percent of their enrollment, or 400 students, live and/or work on federal property.²⁵ Hence, a program which started with 512,000 children now includes about 2.5 million. In 1978, impact aid went to 4,100 of 16,000 school districts nationwide, and cost \$770 million.²⁶ Those districts receiving aid contain about 50 percent of the nation's public school children.²⁷

In the 1976 fiscal year, 264 Texas school districts received over \$37 million in impact aid. Only California with \$79 million, Virginia with \$44 million, New York with \$42 million, and Alaska with \$41 million received more. On the other extreme, Vermont received only \$177,000 in impact aid in 1976.²⁸

Since impact aid becomes part of the school district's general operating budget, it is the closest approximation to general aid from the federal government for elementary and secondary education. School officials love it because it can be spent on anything from books to swimming pools with a minimum of red tape and no federal inspections.

Impact aid payments are not based on need or local tax effort. The amount is derived from the district's level of expenditure with a guaranteed minimum. Thus, it often goes to communities that simply do not need it. Montgomery County, Maryland, with a per capita income 50 percent higher than the national average, receives over \$6 million annually. Plush Fairfax County, Virginia receives over \$13 million a year.²⁹ Schools in both counties enroll thousands of the children of federal bureaucrats.

The Competition/Rivalry Factor

The competition/rivalry factor refers to the seemingly constant struggle over federal funds among different agencies, regions, population groups, and bodies of local government. There is an awareness among these different entities that federal funds for education or any other purpose are not unlimited. Self interest and survival instincts therefore play a crucial role in overshadowing need as the federal dollar is divided up. Competition and rivalry are fierce and if one group's prosperity comes at the expense of another's demise, then so be it.

In general symbolic terms, as the economic pie stops growing, the different pieces passed out stop growing, even though they may stay the same relative to one another. As the population then changes, political demands by certain groups cannot be resisted. With a decline in the fertility rate and an increase in the average life span, there are going to be fewer proportionate children under eighteen in the population and substantially more aged people.³⁰ In 1980, one of every five Americans was fifty-five or older, and that proportion is

expected to climb to one in three and half by 2020.³¹ One might logically expect that decisions regarding federal funds for education or any other purpose will be influenced more by older than by younger segments of the population.

Within education itself, Cohen predicts that the competition between higher education and elementary and secondary education, between vocational and childhood education, and between researchers and program developers is going to become more intense over the next decade as each tries to carve out its domain in a separate Department of Education so that it can control its own area.³²

A very specific example of the rivalry between local governmental agencies can be seen by examining the federal revenue sharing program. Presently, state, county, and municipal governments are the main recipients of federal revenue sharing funds. School districts are not included in the program, although not from a lack of interest and desire. Adding school districts, without cutting back funds to other units of government, would increase program costs. Adding school districts, without increasing appropriations, would reduce the entitlement of current recipients. It is not difficult to understand why county and city governments would prefer that the school districts be excluded from federal revenue sharing.

According to the distribution formula, one-third of the state's revenue sharing amount goes to the state and two-thirds go to the local governments. This two-thirds share is then distributed among county areas according to a three factor formula based on population, per capita income, and adjusted tax effort. Adjusted tax effort is

the ratio of nonschool taxes to income. If school districts were added to the program, adjusted tax effort for the county would become the ratio of all taxes to income. This adjustment in the tax effort measurement would change amounts of federal revenue, sometimes dramatically. Central cities generally have benefited from the exclusion of school taxes in the formula because their heavy expenses for urban public services have held their school expenses down relative to their suburban neighbors. If school taxes are included in the formula, however, counties with high ones would receive more revenue sharing funds at the expense of those with low school taxes (For example, Ray Whitman calculates that changing the formula to total taxes in 1972 for Maryland counties would have resulted in losses as high as 43 percent for Saint Mary's County and gains as high as 150 percent for Carrol County³³).

In conclusion, local governments simply do not want school districts getting a piece of their "pie" when it comes to federal revenue sharing. Some are more adamantly opposed than others because their share would be even further reduced by the inclusion of school taxes in the distribution formula.

The National Concern Factor

The national concern factor refers to the periodic public demand that the federal government do something in response to what is perceived as a critical situation. This factor has been dominant in the politics of federal aid on three major occasions. It first became evident after World War II when Congress was considering the

National School Lunch Act. Much of the support for that act was based on the concern that American youth were seriously undernourished. The United States Surgeon General, Dr. Thomas Parras, stated in 1941, "We are wasting money trying to educate children with half-starved bodies."³⁴ Selective Service figures showed that one-third of all men rejected for military service were physically unfit because of nutritional deficiencies. General Lewis Hershey told Congress that the nation sustained 155,000 casualties during the war as a result of malnutrition.³⁵ In such an atmosphere of national concern, it is not surprising that the National School Lunch Act easily became law.

National concern again resurfaced in 1957. In the first part of that year, politicians from coast-to-coast were debating President Eisenhower's proposed program of federal aid to education. Antifederal sentiment was strong in many parts of the country. Governor Price Daniel told the Texas legislature, "Texas should have the finest school system in the nation, and this should be accomplished with Texas money."³⁶ Mississippi Governor J. P. Coleman expressed his opinion on proposed federal aid for school construction by commenting that "the state can take care of its own building program."³⁷ In Indiana, the elected Superintendent of Public Instruction, Wilbur Young, stated in reference to federal aid, "We can do it better, we can do it cheaper, and surrender none of our rights in the process."³⁸

Later in the same year, the Russians successfully launched the first man-made satellite, Sputnik I. The American people were shocked by the sudden realization that Russia, not America, had the initiative and the lead in space technology. The schools became a scapegoat for

the American "failure" and there was a public outcry that something be done about it. The antifederal sentiment of six months earlier vanished as Congress passed the National Defense Education Act to improve American skills in science, math, and foreign languages with an input of federal money.

Lyndon Johnson successfully used the national concern factor in 1965 to support the passage of the Elementary and Secondary Education Act. He skillfully linked the issue of federal aid to the issue of poverty in America. By stressing that federal aid would help to wipe out poverty by improving the educational opportunities of the poor, he tied it to a cause that any politician would have difficulty opposing. Examples of rural and urban poverty were vividly displayed to mobilize public support for federal action to eliminate or at least reduce the problem.

The Philosophical Factor

The philosophical factor refers to the idea that the approach to any issue should be based on certain consistent practices which reflect underlying fundamental beliefs that are rarely subject to negotiated change. Such terms as pragmatic, idealistic, and realistic are often used to describe certain philosophical tendencies. Even the political labels of conservative and liberal have assumed a philosophical meaning for many.

During the debate over the Smith-Hughes Act in 1917, those describing themselves as philosophical pragmatists argued that vocational education in agriculture belonged chiefly to the country, and

by implication not in the city. Snedden wrote that it would be folly to offer expensive education toward agricultural vocations except to those who would very probably repay society for its investment by their achievements as successful practitioners of the vocations for which they had been trained.³⁹

During the Nixon administrations, the terms realistic and conservative were frequently used to describe philosophical tendencies within the White House Staff. Based on data from the Coleman Report, it was concluded that pumping additional funds into some schools so that they could afford to become more like other schools was unlikely to have a significant effect on how much the students learned. It was felt that the variation in learning lay in forces such as home and peer group over which the schools have little control. So presidential adviser, Daniel Patrick Moynihan, proposed that federal funds for education be spent on more and better research.⁴⁰ The result would be no cut in educational funding, but a redistribution of that funding to make it more palatable to conservative philosophical tendencies. This belief was ultimately transformed into a new National Institute of Education to conduct research into all aspects of education.

The Constituency Factor

The constituency factor refers to the influence that those affected by governmental policy are capable of bringing to bear against the political system. Clausen defines constituency as the subset of voters who supported their representative in the last election.⁴¹

This implies that those in a representative's district who did not vote, or who voted against him, are not his constituents.

There are two forms of constituency influence.⁴² One is the congressman's internalization of the political orientation of the community he represents. This refers to his "feel" for the community through having been and continuing to be part of it. The other is his perception of the needs and demands of his constituents as they are made known to him at his initiative or at theirs. His initiative is usually displayed through visits, questionnaires, and surveys. The initiative of his constituents is primarily through the election process but also through phone calls, letters, telegrams, and even demonstrations or riots.

Numerous examples of constituent pressure on the political system can be cited. They range from the volatile antiwar demonstrations during the sixties to the more peaceful, but equally effective, barrage of phone calls and letters protesting Internal Revenue Service attempts to review the tax exempt status of private schools in 1979.

Finn expands the original definition by listing what he calls the three classic constituencies for any federal program.⁴³ These are: (1) the interest groups directly affected by it, (2) the executive branch officials who administer it, and (3) the congressmen and committee staff aides who specialize in that policy realm and dominate the process by which an idea gets enacted. Interestingly, according to Finn, congressmen and their staffs form a type of constituency themselves. The obvious point is that any federal program, in order to be successful, must please more than just those directly affected

by it. Ignoring those who consider themselves expert in a particular field is to invite their opposition out of anger caused by a feeling of having been slighted.

The strength of a constituency is directly related to the realization of its political goals. A vivid example of this is the Title I program which probably has one of the weakest political constituencies possible--poor people who infrequently vote. It was enacted into law originally in 1965 through a combination of political factors, the least of which was the constituency to be benefitted. Since then, Cross cannot recall a time that a floor amendment to raise Title I funding has been offered and has carried. On the other hand, there have been a score of amendments to add dollars to vocational education, handicapped programs, bilingual education, libraries, equipment, and impact aid.⁴⁴

The Partisan Factor

The partisan factor refers to the influence exerted on the political process by membership of a congressman in a political party. Generally speaking, such membership falls into one of two parties, Republican or Democratic. The strength of the partisan factor is directly related to the allegiance which the congressman feels toward his party. Allegiance, in turn, is related to the degree of interdependence existing between the congressman and his party.

American political parties are often regarded as "brokerage" organizations, weak in principle, devoid of ideology, and inclined to differ over unimportant issues. Despite such criticism, they continue to be a significant factor in the political system.

Clausen believes that the partisan influence in Congress is enhanced under two conditions.⁴⁵ First, the influence of party expands as constituency pressures decline. Second, party influence increases when the congressman's decisions are less visible. This latter condition refers to voting in committee, voice votes on the floor when a record of yeas and nays is not kept, and issues which the media ignore.

Despite criticism that the major parties differ in outlook only on trivial issues, federal aid to education stands out as a major issue over which there has been considerable disagreement between Republicans and Democrats. A 1958 study polled Republican and Democratic leaders attending their party convention. It showed that 66 percent of Democrats favored an increase in federal aid to education, 20.4 percent favored no change, and 13.4 percent favored a decrease. For Republicans, the figures were 22.3 percent for an increase, 34.5 percent for no change, and 43.2 percent for a decrease.⁴⁶

Partisan influence was a major factor in the passage of the Elementary and Secondary Education Act in 1965. In the November 1964 national elections, the Democratic majority in Congress was increased to 68 percent of the seats, thereby outnumbering the Republicans by more than two-to-one.⁴⁷ This strong majority provided the votes for the passage of a large number of programs increasing the involvement of the federal government in many areas, including education. With such strong control, committee memberships and committee chairmanships were all determined within both houses of

Congress by the Democratic party. These changes within the legislative system certainly had a favorable effect on party objectives.

When it comes to the expenditure of discretionary federal funds, the partisan factor combines with the presidential factor to produce the desired political effect. The Carter administration had \$29 billion worth of such funds at its disposal in 1980.⁴⁸ To share the credit when this money came to their communities, officials had to get in harness with the President and the party line. Republicans and maverick Democrats were shooed away.

The notion that Republicans are generally against federal aid, while Democrats are generally for federal aid, may be true; but many Republicans would strongly deny it. Republican Representative Albert H. Quie aggressively defended his party and President Nixon against what he considered to be unfair treatment by critics in regard to federal aid to education. He asserted that the 1972 Nixon education budget of \$6.1 billion was a 53 percent increase over the 1971 budget, and thus the largest increase in the history of the Office of Education. On the other hand, according to Quie, the increase in President Johnson's last four education budgets was only 2 percent from \$3.513 billion to \$3.691 billion.⁴⁹

Sixty-two years ago the partisan stance on federal involvement in education was the opposite of what many consider it to be today. In early 1918, Jonathan Bourne, president of the Republican Publicity Association, issued a statement calling for the establishment of a cabinet level Department of Education. He is quoted as saying: "We

should add to our government system a department of education represented in the Cabinet and having under its jurisdiction the shaping of national educational policies."⁵⁰

The times, the issues, and even party stances and party names change over the course of history. However, the partisan factor continues to influence the enactment of legislation and policy by its effect on the political system.

The Presidential Factor

The Presidential factor refers to the influence exerted by the President on congressmen and other officials through the political system. In many areas of national concern, this influence is frequently and forcefully applied. According to former Presidential adviser, Chester Finn, however, education is not one of those areas.⁵¹ He classifies education as a low level issue that commands no precedence on the list of concerns and that ranks above Indian affairs but well below welfare and energy on the domestic scene.

Several reasons are listed to explain why Presidential interest is so low. First, Presidents spend most of their time on foreign relations, national defense, the economy, party leadership, and congressional relations. Second, within domestic concerns, Presidents naturally concentrate on issues where the federal role is dominant. With the nation's schools looking to the federal government for just eight cents out of every dollar, it is a marginal activity for the national government. Practically nobody holds the President responsible for the caliber of history teaching in the local high school.

Hence, Presidents have little time for educational matters, given the competition for their attention by issues where the federal role is clear and decisive. The third reason involves the practical observation that Presidents see scant political rewards in spending time on education other than to be superficially affirmative. The subject rarely is a consequential issue in national elections. Furthermore, the education profession has not wielded much clout at the polls.

If Presidential involvement in education is mostly superficial and perfunctory, why does it loom as a factor in the politics of federal aid? The answer lies first in the negative effect it can have and second in the sudden positive effect that results when a President breaks from tradition to actively support education legislation.

President Kennedy is a good example of negative Presidential influence which can have just as much effect on legislation and policy as positive influence. During his time in office, Kennedy was determined to do nothing that might be interpreted as favoring Catholics.⁵² He, therefore, avoided Presidential involvement in education because of the role Catholic school officials were playing in efforts to attain federal aid to education. His deliberate disengagement from the issue was definitely a factor in the failure of any federal assistance program to become law.

On the other hand, Lyndon Johnson stands in striking contrast. Johnson was able to capitalize on the ecumenical trend in the United States during the mid sixties. As a Protestant, he was able to sponsor legislation providing federal assistance to all schools, Catholic and

public alike. Johnson's interest in education was very noticeable compared to the President who preceded him. Consequently his influence was even stronger than would have normally been the case. Many probably had the attitude that if the President is finally interested in sponsoring an education bill, it must be important.

President Johnson's timing and mastery of press relations gave the Elementary and Secondary Education Act of 1965 the attention and exposure it needed for passage. Hearings began on January 22, 1965 only two days after Congress had assembled.⁵³ The White House staff lavished attention on the bill daily. Johnson himself took personal charge proclaiming its passage to be a first priority of the Great Society. Pressure never faltered and the bill became law less than three months after it was introduced.

The Lobby Factor

The lobby factor refers to the political influence of organized pressure groups whose primary objective is to contact public officials in order to seek their cooperation in support for or against a particular policy or bill. Because the agents of such pressure groups frequently wait in the corridors outside the legislative chambers to talk to congressmen, they are called lobbyists.⁵⁴

Participation in lobbying is protected by the First Amendment to the Constitution which states that "Congress shall make no law . . . abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances." Individuals and groups exercise this right

when they attempt to influence public policy by expressing their viewpoint and proposing a course of action.

There are somewhere between 250 and 300 education associations, organizations, and institutional representatives located in or near the nation's capital. They purport to speak for more than 70 million people engaged or involved in the American educational enterprise.⁵⁵ All of these organizations want protection from harm, rules and resources favorable to their interests, and personal respectability and recognition. In the pursuit of these objectives, self interest is sometimes emphasized to the exclusion of logic and common sense. For example, the National Audio-Visual Association, made up mainly of audio-visual equipment dealers, lashed out in the mid seventies at the concept of central purchasing which was being considered by fifteen states. The opposition was on the grounds that central purchasing would put many members of the association out of business.⁵⁶ In 1971, the Association for Supervision and Curriculum Development of the National Education Association urged that 20 percent of cable television channels be reserved for education and public affairs programs.⁵⁷

Few lobbying organizations have everything their own way. Any proposed statute or regulation may arouse opposition from one or more other associations. It is natural, therefore, that coalitions and alliances should form in the never-ending struggle of interest group politics.

One of the best examples of lobby influence and coalition building through compromise can be found in the events leading to the

passage of the Elementary and Secondary Education Act. In 1961, there was much discussion throughout federal circles over a proposed program of federal aid to education. The main point of controversy was over whether such aid would be available for public and private schools or for only public schools. Archbishop Karl J. Atter, chairman of the Administrative Board of the National Catholic Welfare Conference, spoke for the Catholic education lobby when he said, "In the event that a federal aid program is enacted which excludes children in private schools, these children will be victims of discriminatory legislation. There will be no alternative but to oppose such discrimination."⁵⁸

In response to the bishop's comments, C. Stanley Lowell, Associate Director of Protestants and Other Americans United for Separation of Church and State, commented, "American Protestants will never pay taxes to support Catholic schools. We will oppose enactment of laws which require such payments. If Congress is pressured into enacting such laws, we will contest them in the courts."⁵⁹

There seemed to be no middle ground between the two positions. Yet, less than four years later, the Elementary and Secondary Education Act became law. Private school groups had been appeased by making their children eligible for the program while public school forces and antichurch groups were won over with the assurance that public funds would flow only through public institutions. Hence, the aid to parochial schools was made indirect with the emphasis that it would benefit only poor children.

Despite the contribution of lobby groups to the political process, they are often criticized for selling their point so effectively that the other side of the issue is underrepresented and an unbalanced decision results. This can still happen if both sides of an issue are represented by lobbies since there are significant differences in power among lobbies. Some have much more influence than others. Another criticism is that lobbies are irresponsible since they are not accountable to the public. Some are even accused of not really representing their organization or general membership.

Nevertheless, lobbies continue to be an integral part of the American political system. They function, usually in conjunction with other political factors, to influence legislation of every kind.

Summary of Chapter

Chapter II has discussed the history and politics of federal aid to education. The history of federal aid was presented in three distinct segments of time in order to display its development in the context of United States History. Landmark legislation was mentioned along with reasons often cited to justify the federal role in education. Finally, the present and sometimes controversial status of federal aid was outlined and explained.

The remainder of Chapter II consisted of an analysis of the many factors which influence the politics of federal aid. It was emphasized that need is not the sole determiner of the amounts and recipients of federal assistance. In many instances, other forces exert sufficient influence on the political system to sway the

delivery of federal aid in support of special interests. With this in mind, it is logical to conclude that substantial amounts of federal aid are channeled into areas where the need for such assistance is relatively minimal. This dissertation attempts to determine what effect, if any, this occurrence has on the equalization of revenues in the public schools of Texas.

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57. Ibid., p. 40.

58. Philip Meranto, The Politics of Federal Aid to Education in 1965 (Syracuse, N.Y.: Syracuse University Press, 1967): 61.

59. Ibid.

CHAPTER III

THE TEXAS PUBLIC SCHOOL FINANCE PLAN

Introduction

In order to fully appreciate the equalization effect of federal aid on school districts in Texas, it is necessary to understand the Texas Public School Finance Plan. This plan considers each district's enrollment and local tax base in order to guarantee a foundation program that can be supplemented with state equalization funds and/or extra local tax effort. The details of this plan are explained in this chapter which is organized into three major sections. Each section covers a source of public school revenue: federal, state, and local governments. With an overview of these three sources of revenue, it is easier to understand the concept of equalization. Furthermore, it will be easier to comprehend the effect of federal revenue on equalization, which is the main thrust of this study.

Federal Money in Texas Schools

It should be noted that all federal revenues represent expenditures above what the state and local districts spend to support the minimum foundation program established by law. Federal funds may not be substituted for local funds. The federal government does not consider the state and local foundation program, average income, or tax base when it provides aid. At the same time, the state and local districts do not consider federal aid when they compute the cost of the foundation program. Although the state of Texas as a whole could easily

survive without federal educational funds, many individual districts would suffer. Those receiving substantially more aid than the state average have come to depend on their federal subsidy as a form of enrichment. On the other hand, some Texas districts make it a point to proudly boast that they do not need and do not want federal money.

Amount of Federal Aid

The amount of federal aid to public elementary and secondary education in Texas can be expressed in both dollars and percentages. In 1978-79, school districts in Texas received \$336 million from the federal government. This amount constituted 7.3 percent of the total revenue for Texas public school districts that year.¹

Every school district did not receive an amount equal to 7.3 percent of its budget. Many districts received more while many received less. On one extreme were districts like Roma and LaVilla that received more than 40 percent of their revenue from the federal government. On the other extreme were districts like Highland Park and Port Neches that received no federal aid whatsoever.²

Nature of Federal Aid

Federal aid is not simply added to the school district's general revenue fund to be spent as the district sees fit. Most of it is designated to be spent in specified areas. Such funds are described as being targeted. The different targeted areas are frequently described by numbered titles which link them to the legislation establishing their existence. For example, funds for compensatory education are called Title I monies. Assistance for library and learning resources

is called Title IV. Bilingual education programs come under the heading of Title VII.

There are some federal funds that do not carry a title. The National School Lunch Program is the best example. There are even some federal funds that are not specifically targeted. These are the impact funds mentioned in Chapter II. They are given to school districts that have more than 3 percent or 400 of their students who come from families which reside on federal property and/or in which at least one parent is employed by the federal government. The rationale behind impact aid is to help the local district pay for educating children who would not be enrolled if it were not for the federal job of a parent. It is also taken into consideration that the federal installation where the parent works and where the family may live cannot be taxed by the local district. For example, the Killeen I. S. D., near Waco, receives federal impact funds because many of its students come from families living within and/or employed by the Fort Hood Army Base.

Another interesting feature of federal funds is the fact that they are not limited to public schools alone. Even in states where nonpublic schools are constitutionally or legally prohibited from receiving state aid, federal funds are readily available. Thus, there are numerous Texas private schools receiving targeted title money and participating in the National School Lunch Program.

Antifederal Sentiment

The United States Constitution does not mention any responsibility of the federal government for education. The Tenth Amendment

clearly states: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people." Since powers related to education are neither delegated to the United States nor prohibited to the states by the Constitution, it could be argued that the federal government has no right to get involved with funding educational programs.³ This attitude is shared by some educators and politicians who base their philosophy on the concept of states' rights. The counter argument, however, is that federal aid is justified by implication through the General Welfare Clause of the United States Constitution. This clause, Article I, Section 8, states, "Congress shall have the power . . . to pay the debts and provide for the common defense and general welfare of the United States"

Department of Education

The recently established Department of Education poses many questions that will be answered in the years to come. Will it result in an increased quality of federal involvement or merely in an increased quantity? The answer to these and other questions will be greatly influenced by political factors. As described in Chapter II, the federal role in education is often influenced by considerations other than actual need. The future of the Department of Education is uncertain. Ronald Reagan suggested during the 1980 Presidential campaign that he would eliminate it, if elected. As President, however, he has toned down his opposition, although it is common knowledge that he does not consider its role to be a priority with his administration.

State Money in Texas Schools

Amount of State Money

The total amount of state funds directed to primary and secondary education in Texas can be expressed in both dollars and percentages. In 1978-79, school districts in Texas received about \$2.1 billion from the state.⁴ This amount constituted about 46 percent of all the money spent on Texas public elementary and secondary education that year.

Every school district does not receive an amount equal to 46 percent of its budget. Many districts receive more while many receive less. The exact amount is determined by a series of formulas related to the value of taxable property in the district. These formulas, as well as all other features of the program, will be explained and become clear as this chapter progresses. Nevertheless, every school district in Texas, no matter how poor or how rich its tax base, receives some state aid. On one extreme, is a district like Axtell which gets over 80 percent of its revenue from the state. On the other extreme is Sundown which gets less than 10 percent of its revenue from the state.⁵

State Available Per Capita Funds (ADA Money)

Every school district in Texas, regardless of size or wealth, receives a certain amount of money from the state for every student in average daily attendance. For the 1978-79 school year this amount was \$284 per ADA.⁶ Thus, a school district with an average daily attendance of 1,000 students would have received \$284,000 from the

state. Lubbock I. S. D. received over \$8 million in ADA money during the 1978-79 school year.⁷ This money alone constituted about 18 percent of Lubbock's total budget.

Statewide, over \$600 million was distributed to local school districts in ADA money during the 1978-79 school year.⁸ This amount represented 15 percent of the total cost of public education in Texas and 30 percent of the state's share of that cost. The source of this money is the Available School Fund, which is explained later in this chapter.

It should be noted that the distribution of these per capita funds is based on average daily attendance (ADA) and not on average daily membership (ADM). The purpose of this policy is to encourage school officials to strive for a high attendance rate among students. Although two school districts may have equal enrollment figures, the one with the highest attendance rate will receive more state per capita money. Thus, absentees and truants actually cost the district money. A school district with an enrollment of 11,000 students but an ADA of only 10,000 would have lost \$284,000 in the 1978-79 school year. Because of this situation, disagreement exists between those who favor the present arrangement and those who favor basing per capita fund distribution on average daily membership (enrollment, not attendance). The issue has become part of the urban-rural rivalry. Most big city school districts would prefer to have state per capita funds distributed according to ADM because their attendance rates are lower than most rural districts. The rural schools, on the other hand,

are satisfied with the present ADA arrangement because their attendance rates are generally above the state average.

Other than the debate over ADA and ADM, there is one major criticism of the distribution of the state per capita fund. Many critics oppose the existing plan because no consideration is given to the tax base wealth of receiving school districts. Every district in the state receives the same amount per ADA as every other school district. Thus, a school district like Seminole, which does not need the state money because of its immense local tax base, and a district like Laredo, which desperately needs state money because of its meager local tax base, would both get the same amount of money per student. This disparity is further explained when budget balance districts are defined and discussed later in this chapter.

It has been assumed by many educators that the guaranteed per pupil state aid known as ADA money is constitutionally guaranteed. Hence, there has been a reluctance to seek a change in the distribution format. This assumption has apparently existed for over a hundred years--ever since the permanent school fund was established in the Texas Constitution of 1876.⁹ Such a notion, however, is not completely correct. In 1977, the Texas attorney general ruled that the state constitution does not mandate that all of the state money presently being spent for per capita aid must be so spent. In fact, only about one-third of the present amount is constitutionally guaranteed.

Permanent School Fund

The Permanent School Fund is a perpetual trust fund for the public schools of Texas established by the Fifth Legislature in 1854

and then carefully guaranteed by inclusion in the Constitution of 1876.¹⁰ The authors of that constitution set aside state owned, income-producing lands from which money for the fund would be produced. These lands now total more than 5 million acres. They are rich in oil, timber, minerals, soil, and pasturage. Consequently, they are leased for drilling, lumbering, mining, farming, and grazing. The money from the sale of these leases is deposited in the Permanent School Fund. Therefore, it follows logically that as the value of the land rises, the cost of leasing it also rises, and thus the amount of money added to the fund increases. This relationship between the land, the leases, and the fund increases in significance as the price of oil continues to rise. During 1978, the sale of oil and gas leases added another \$82 million to the principal of the Permanent School Fund.¹¹ Presently, the Permanent School Fund amounts to approximately \$2 billion which may not be touched according to the Texas Constitution. It is presently growing at the annual rate of 17 percent.¹² Only the earnings of this \$2 billion may be spent--as explained in the next part of this chapter. These earnings have provided over \$500 million in non-tax revenue to the public schools in the past ten years.¹³

How are these earnings generated? The answer is in the investment of the fund in stocks and bonds. Almost half of the fund is invested in corporate bonds of every conceivable type. Most of these in turn are public utility and industrial bonds. For example, over \$3 million in bonds are held in Southwestern Public Service Company in Lubbock and some \$4 million in bonds are held in Xerox Corporation.¹⁴

Almost 40 percent of the fund is invested in common stocks. The stock portfolio is well diversified with no one sector of the economy dominating. Thirteen percent of the fund is in oil industry stock to constitute the largest block. On the other extreme, about 1.5 percent is in tire and rubber products. Approximately \$13.6 million is held in Atlantic Richfield while \$7 million is held in Goodyear Tire and Rubber Company.

Other than corporate stocks and bonds, the Permanent School Fund is invested in government securities. Over \$220 million are invested in United States Treasury Bonds.¹⁵

Of the three types of investments described above, corporate bonds have been the most productive over the past decade. They are currently bringing a return of about 7.8 percent. Stocks have been the second most productive with a return of about 6 percent and government bonds have been the least productive with a return of only 3.6 percent.¹⁶

Available School Fund

The Available School Fund refers to the money which is distributed annually to all of the school districts in Texas on a per capita basis. If \$600 million is available, and if the statewide ADA is 3 million, then every district would receive \$200 for each student in average daily attendance.¹⁷

There are three main sources of income for the Available School Fund. The first is the investment return from the Permanent School Fund explained above. In 1978, 16 percent or \$105 million was deposited in

the Available School Fund from this constitutionally established source.¹⁸ It should be pointed out, however, that although \$105 million is no "drop in the bucket," it represents less than one-fifth of the entire fund.

The second important source of Available School Fund income is the motor fuel tax. One-fourth of the revenue from this tax is allocated to the Available School Fund. The remainder goes into the State Highway Fund. In 1978, 17 percent or \$115 million was deposited in the Available School Fund from this source.¹⁹

The most important source of income for the Available School Fund is the Omnibus Tax Fund. It is a fund established by the Texas Legislature in 1941 to collect revenues from various taxes into a consolidated fund for later distribution on a priority basis. The Available School Fund is one of the priority recipients. Most of the revenue flowing into the Omnibus Tax Fund comes from four state taxes: (1) natural and casing head gas tax, (2) oil production tax, (3) motor vehicle sales tax, and (4) cigarette tax. With the emphasis on oil and natural gas taxes, it is easy to understand why state revenues grow as oil prices increase. The higher the price of oil, the greater the incentive to drill for and produce it, and thus the higher the tax receipts. In this sector of the economy the state is making a "triple killing." First, it can charge more for an oil lease on state owned land; second, it taxes the leasee when he drills; and third, it taxes him again when he produces, if he strikes oil. In 1978, 66 percent or \$435 million was deposited in the Available School Fund from the Omnibus Tax Fund.²⁰

An interesting, although relatively insignificant, annual addition to the Available School Fund comes from escheated estates. This refers to property that is legally declared ownerless. The owner either dies leaving the property, but no will and no next of kin, or the owner cannot be located to maintain claim to the property. Whenever this occurs, the state assumes ownership and deposits the money in the Available School Fund. This source of income contributed less than 1 percent or \$4 million in 1978.

The Foundation School Program

The Foundation School Program has been in existence since 1949. During the past three decades it has undergone numerous adjustments and changes. Nevertheless, the concept upon which it originated still exists and continues to give direction to school finance efforts in Texas. The Foundation School Program was and is basically designed to provide state help to local school districts in order to maintain a minimum educational program throughout the entire state. Generally speaking, this means that the state establishes certain educational standards for all local districts to meet. It then provides the money needed to meet these standards, when the local district cannot do so out of local tax receipts. This generalization should be kept in mind because the detailed calculations involved in computing the districts' Foundation School Program entitlement tend to divert attention from the program's original purpose.

The first step in the Foundation School Program is for each district to compute the amount of money to which it is entitled

according to a series of state formulas. This step in itself is very complicated as there are a number of calculations involved before a final figure is derived which represents the cost of a particular district's Foundation School Program.

Personnel Units. The initial calculation involves figuring out how many personnel units are to be allotted to the district. An average daily attendance figure based on the best five six week reporting periods is computed for four segments of the enrollment. One personnel unit (PU) is awarded for every 18.5 ADA in grades kindergarten through three.²¹ One PU is awarded for every 21 ADA in grades four through six; one for every 20 ADA in seven through nine; and one for every 18 ADA in ten through twelve. Hence, a district with an ADA of 185 in kindergarten through three, 210 in four through six, 200 in seven through nine, and 180 in ten through twelve for a total enrollment of 775 would be awarded a total of forty personnel units (10 + 10 + 10 + 10).

These forty units, however, represent only a working figure. In districts with an enrollment of more than 1,000, the next step is to factor in special education units. However, in districts with an ADA of less than 1,000, the personnel unit figure already calculated is further refined by one of two formulas. If the district ADA is less than 1,000, and its area is greater than 300 square miles, the actual ADA is subtracted from 1,000. Using the hypothetical district described above, the calculation would be $1000 - 775 = 225$. This difference is then multiplied by .000455 to get a product ($225 \times .000455 = .102375$). This product, in turn, is multiplied by the

original number of personnel units to yield an answer which represents the additional number of units to which the district is entitled ($.102375 \times 40 = 4.095$). In this particular example, the district would be entitled to four additional personnel units for a total of forty-four instead of forty.

If the district ADA is less than 1,000 and its area is less than 300 square miles, the same process is followed with one change. A factor of .0003 is substituted in place of .000455. Interestingly, over half of the school districts in the state are eligible to take advantage of one of these two sparcity formulas.

The next step in further refining the number of personnel units is to make adjustments for special education and vocational education teachers. The number of special education teachers is based on state standards of need and enrollment. This number is then divided by four and the answer is subtracted from the number of personnel units computed up to that point. Again referring to the hypothetical district cited above, if the number of allotted special education teachers is four, the number of personnel units is reduced by one ($4/4 = 1$) and a new figure of forty-three emerges ($44 - 1 = 43$).

The same process is repeated for vocational teachers except that the divisor is two instead of four. Thus, with two vocational teachers the number of personnel units is again reduced by one ($2/2 = 1$) to yield still another new figure of forty-two ($43 - 1 = 42$).

Once personnel units are established the district may use them to staff its programs as it sees fit so long as certain statutory requirements are met. Each pay grade for professional and

paraprofessional personnel carries a unit value ranging from .55 for an aide to 2.50 for a superintendent of a district with 50,000 or more ADA. Teachers carry a unit value of 1.0. Using forty-two units with which to work, the hypothetical district may choose to hire one superintendent (worth 1.75 units); two principals (worth 1.40 units each for a total of 2.8 units); one counselor (worth 1.20 units); one librarian (worth 1.00 units); three aides (worth .75 units each for a total of 2.25 units); and thirty-three teachers (worth 1.00 units each for a total of 33.00). Adding all of the weighted units results in a total of forty-two which is the district's allotment ($1.75 + 2.80 + 1.20 + 1.00 + 2.25 + 33.00 = 42$). In this example, forty-two units were used to hire forty-one people. The minimum salaries established for the grade, experience, and degree of all these forty-one employees become part of the cost of the district's foundation program. If their total minimum salaries add up to \$500,000, this figure becomes part of the foundation cost.

Special and Vocational Education Units. At this point, the special education and vocational education units that were partially subtracted from the number of personnel units earlier, are added back in their entirety. Minimum state salaries are figured for all of these positions being added back and the total amount is added to the foundation cost. Continuing the example underway, if the minimum state salary for all six (four special and two vocational education) positions totals \$80,000, the foundation cost would be increased by that much. The cost to this point would be \$580,000 ($\$500,000 + \$80,000$). It

represents the total estimated cost of foundation salaries which constitute by far the largest portion of the Foundation School Program.

Maintenance and Operation Allotment. The second general step in figuring the total foundation cost is calculating the maintenance and operation allotment. The Sixty-sixth Legislature raised this amount to \$128 per ADA for 1979-80 and \$139 per ADA for 1980-81. In the exemplary school district being referenced, \$99,200 would be added to the foundation cost in operating expenses ($775\text{ADA} \times \$128 = \$99,200$). This brings the total amount of the Foundation School Program cost to \$679,200.

Vocational Operating Costs. The third general step is to compute vocational operating costs. This is easily done by multiplying \$400 by the number of vocational classroom units. In the example being used, the two units established earlier would generate \$800 ($\400×2) to be added to foundation costs bringing the total foundation cost to \$680,000 at this point.

Compensatory Education Allotment. The fourth general step is to compute the compensatory education allotment by multiplying \$44 times the number of educationally disadvantaged pupils. An eligible pupil is one who is defined as participating in free or reduced price lunches under the National School Lunch Program. Continuing with the exemplary figures, if 200 children in the district are getting free or reduced price lunches, \$8,800 would be added to the total foundation cost ($\$44 \times 200$) bringing it to \$688,800.

Driver Education Allotment. The fifth general step in deriving the foundation cost is to compute the Driver Education allotment by multiplying \$25 times 20 percent of the ADA for grades 10-12. With an ADA of 180 in the top three grades, the hypothetical district being exemplified would add \$900 to its foundation cost ($\$25 \times .20 \times 180$). This would be added to the total foundation cost bringing it to \$689,700.

Special Education Support Allocation. The sixth general step in compiling the foundation cost is computing the special education support allocation. This amount was lowered by the Sixty-sixth Legislature from \$500 to \$400 per teacher. However, an additional \$100 is provided for each new special education unit established. Continuing the exemplary school district, the four special education units would produce a \$1,600 allotment ($\400×4) to be added to the foundation cost bringing it to \$691,300 ($\$689,700 + \$1,600$).

Other Allotments. The next step in compiling the foundation cost is a "catch all" category simply labeled "other." Presently it applies to support for fast growing districts and support for gifted and talented programs. If a district's growth rate is 6 percent or higher per year, if its effective tax rate is above the statewide average, and if it raises its local fund assignment, it is eligible for fast growth aid which is computed as follows: fast growth aid = $[(\text{growth percentage}/.06) - 1] \times \text{current ADA} \times \30 . If the growth rate in the continuing example is 10 percent, the district would receive \$15,577.50 in fast growth aid $[(.10/.06) - 1] \times 775 \times \30 . There was a statewide cap on this type of aid of \$2.5 million for

1979-80. Because of this limit, there was a proration at the rate of about 40 percent of entitlement.²² Therefore, 40 percent of \$15,577.50 would yield an actual allotment of \$6,231.

Support for gifted and talented programs is based on approval of an application which must be submitted to the Texas Education Agency. There was a statewide cap on this type of aid of \$2 million for 1979-80 and \$3 million for 1980-81. Thus, all approved grants were prorated in order not to exceed the state limit. Let us assume that the exemplary district receives a final prorated grant of \$2,469. This would bring the foundation cost of the "other" category to \$8,700 (\$6,231 + \$2,469) and the cumulative foundation cost to \$700,000 (\$691,300 + \$8,700).

Transportation Costs. The final category in computing the overall foundation cost is transportation. Interestingly, school districts are not obliged to operate a system of transportation.²³ If they do, however, a portion of the cost is included in the foundation program according to a series of formulas. The calculations are based on the total approved mileage multiplied by a variable cost-per-mile allocation. This variable rises in direct proportion to what is termed linear density grouping, which is nothing more than the number of daily passengers divided by the number of daily miles driven. Two hundred passengers driven 100 daily miles would produce a linear density grouping of 2.0. This calls for a linear reimbursement of \$.75 per mile. For comparison, a linear density grouping of 2.4 and above is reimbursed at the rate of \$.94 per mile while a linear density grouping of below .4 is reimbursed at the rate of

only \$.44 per mile. An additional transportation allotment is granted for handicapped students based on actual cost but not to exceed \$.80 per mile. For exemplary purposes, it is assumed that the transportation foundation cost is \$15,000. This would bring the total Foundation School Program cost to \$715,000 (\$700,000 + \$15,000).

At this time it would be helpful to briefly summarize the cost of the Foundation School Program by listing all of the components with the exemplary figures used.

Foundation salaries	\$580,000
Maintenance and operation	99,200
Vocational operating cost	800
Compensatory education	8,800
Driver education	900
Special education	1,600
Other costs	8,700
Transportation	<u>15,000</u>
Total Foundation School Program Cost	<u><u>\$715,000</u></u>

Full Market Value of School Districts

Before proceeding to describe what happens after the total foundation cost is figured, it is necessary to digress for a brief discussion of full market and index property values. Full market value refers to the actual market value of all property within the school district boundaries as determined annually by the School Tax Assessment Practices Board. In making its determination, this board is required to make several adjustments to full market value as mandated by state law passed in May, 1979.²⁴ These adjustments are as follows:

1. All school taxpayers, who make a proper claim, receive a \$5,000 homestead exemption on the market value of their home.

2. Disabled persons and those sixty-five or older are eligible for an additional \$10,000 homestead exemption.
3. Most intangible personal property such as stocks and bonds are exempt from property taxes and thus not included in the district's market value.
4. Nonbusiness family automobiles are exempt from property taxes and not included in the district's market value unless the local school board acts affirmatively to tax them.
5. Nonincome producing household goods and personal effects are exempt from property taxes and not included in the district's market value.

After taking into consideration these mandated adjustments, the State Tax Assessment Practices Board computes a full market value for every school district in the state. The full 1979-80 market value for the entire state of Texas was a little over \$279 billion.²⁵ The school district with the highest market value was Houston with over \$23 billion. The district with the lowest market value was Boles Home with \$3.7 million.

Absolute market value does not give an accurate picture of the district's wealth because it does not take into account the number of students to be educated. A more accurate measurement is derived by dividing full market value by ADA. When this is done, a tremendous range appears. The statewide average was about \$90,000 per student in 1978-79. In Sundown, the figure was over \$1 million per student

while in Edgewood (San Antonio) it was less than \$13,000 per student.

Index Value of School Districts

In addition to a full market value, each district also has an index value which is sometimes equal to, but usually less than, its full market value. The index value is computed because the Texas Legislature has granted an agricultural productivity tax break to farm, ranch, and timber lands. To determine the index value of a district's property, the agricultural productivity value of its farm, ranch, and timber land is substituted for the full market value of that same land. In urban school districts with no such agricultural land, like Houston, the index and full market value are the same. In extremely rural areas, the index value is only a fraction of the full market value. For example, Snook I. S. D., near College Station, has a full market value of \$75 million but an index value of only \$27 million. For 1979-80, the index value for the entire state of Texas was about \$236 billion dollars which was 84 percent of the full market value.²⁶ Houston again had the highest index value of \$23 billion while Terlingua had the lowest with only \$1.5 million. Index value per student does nothing to close the gap between rich and poor districts. The statewide average per student was about \$75,000 in 1978-79. In Sundown, it was still over \$1 million while in Edgewood it was still less than \$13,000.

Local Fund Assignment

It is now appropriate to return to the hypothetical school district (henceforth referred to as District Z) in order to continue explaining the state's Foundation School Program. To determine how much money school districts receive from the state for the foundation program, it must first be decided how much of the foundation cost is to be paid by the district itself. This amount is called the local fund assignment. In making this computation, the district used to have a choice of using either its full market value or its index value. It could multiply full market value by .0015 or index value by .00175 and then choose whichever of the two figures was less. If the full market value of District Z were \$77.5 million, its local share would have been \$116,250 ($\$77.5 \text{ million} \times .0015$). If the index value were \$62 million, its local share would have been \$108,500 ($\$62 \text{ million} \times .00175$). The lesser of these two amounts, \$108,500, would have become the local fund assignment for District Z.

The option of choosing either full market value or index value to compute the local fund assignment expired after the 1979-80 school year. Beginning in 1980-81, each school district must compute its local fund assignment by multiplying its index value times .0016.²⁷ However, state law mandates that no district's local fund assignment shall exceed 120 percent of its prior year local fund assignment.²⁸

State Minimum Foundation Aid

After computing the total foundation cost, the local fund assignment, and the state available per capita aid, it is a simple

process to determine how much money the district will receive from the state. The local fund assignment and the state available per capita aid (ADA money) are both subtracted from the total foundation cost. The difference represents how much foundation money the state will provide in addition to ADA money. However, every district is guaranteed that it will receive no less state aid than it received per ADA in the previous year.

Referring back to the explanation of state available per capita funds, District Z would have qualified for \$220,100 in ADA money ($\284×775 students) in 1978-79. Its foundation cost was \$715,000 and its local fund assignment was \$108,500. Therefore, it would have received from the state \$386,400 in foundation funds ($\$715,000 - \$220,100 - \$108,500$). Although a distinction is made between ADA money and state foundation money, both come from the state. In the hypothetical situation described, District Z actually received \$606,500 ($\$386,400 + \$220,100$) from the state for its foundation program. Only \$108,500 for the Foundation School Program came from local tax receipts.

Budget Balance School Districts

The term budget balance has become synonymous with the word wealthy because it refers to those school districts in Texas with an extremely high tax base. This results in a high market value or index value to ADA ratio. More specifically, a district is considered budget balanced if the sum of its ADA money and its local fund assignment is greater than the cost of its foundation program. If District

Y has a foundation cost of \$1 million, an ADA allotment of \$300,000, and a local fund assignment of \$900,000, it is a budget balance district. Its foundation cost of \$1 million is less than the sum of the other two figures ($\$1 \text{ million} < \$300,000 + \$900,000$). Some of the richest budget balance districts are in oil rich West Texas. Sundown, with an enrollment of only 400 students, can generate a local fund assignment of over \$850,000. Seminole, with an enrollment of 1,800 students, can generate a local fund assignment of over \$2.5 million, which is more than Lubbock, with 28,000 students, is capable of doing.

It is obvious that a system with such a wide gap between the wealthy tax base districts and the poor tax base districts is going to be severely criticized. The most fundamental criticism is that the budget balance districts have a more expensive foundation program than the other districts. For example, District A and District B each have a computed foundation cost of \$1 million and an ADA allotment of \$300,000. District A, however, has a local fund assignment of \$900,000 because of its immense index value. District B, on the other hand, has a local fund assignment of only \$50,000 because of its meager index value. District B still gets a foundation program of \$1 million because the state steps in and makes up the difference between the cost and local fund assignment plus ADA money. District A does better. Although its foundation cost is the same as that of District B, it gets \$200,000 more because it is capable of producing such a large local fund assignment from its huge index value ($\$900,000 \text{ LFA} + \$300,000 \text{ ADA} = \$1.2 \text{ million}$ or \$200,000 more than

the foundation cost). The obvious reason for this is that budget balance districts get to keep their ADA money no matter how rich they are. They also get to keep their entire local fund assignment, which they must raise and use as the local minimum, even though it by itself may be greater than the foundation cost.

State Equalization Aid

State Equalization Aid is provided to help property poor districts improve the quality of education for their students. It is state money received in addition to foundation and ADA money. If the local school district has property wealth per pupil which is below 110 percent of the statewide average property wealth per pupil, it is eligible for equalization aid. Interestingly, the cutoff point for determining eligibility is not the statewide average, but 110 percent of that average. The formula for 1979-80 was:

$$SEA = [1 - (DPV/DADA \div SPV/SADA \times 1.10)] \times ADA \times \$275$$

SEA stands for State Equalization Aid. ADA represents average daily attendance. DADA is the district ADA. SADA is the statewide ADA. DPV is the average of the district's full market value of property and index value of property. SPV is the average of the statewide full market value of property and the statewide index value of property. The SPV/SADA was established by the Texas Education Agency at \$110,000 for 1979-80.²⁹

The Del Valle I. S. D. in Travis County can be used as an example in computing State Equalization Aid. Del Valle's full market value was \$131 million in 1978-79. Its index value was \$84 million.

Its ADA was 3,700. By adding full market value to index value, then dividing the sum by two, the DPV is figured (\$131 million + \$84 million = \$215 million; \$215 million/2 = \$107.5 million). This can now be plugged into the formula to figure the final amount of equalization aid.

$$\left[1 - \frac{\$107,500,000}{3,700} / \$110,000 \times 1.10\right] \times 3,700 \times \$275$$

$$\left[1 - (\$29,054 / \$121,000)\right] \times \$1,017,500$$

$$\left[1 - (.24012)\right] \times \$1,017,500$$

$$.75988 \times \$1,017,500 = \$773,177$$

Del Valle I. S. D. would thus receive \$773,177 in State Equalization Aid. This would be in addition to its ADA money, foundation money, and local fund assignment. The statewide cap for equalization aid in 1979-80 was \$202 million. If the cap amount is exceeded, each eligible district's share is reduced proportionately.

Another type of equalization aid from the state can be called disaster aid. This new type of assistance was passed by the Sixty-sixth Legislature as a result of the extensive tornado damage in Wichita Falls in the Spring of 1979. If a school district is within an area that has been declared a major disaster area by the Governor, and has suffered a property value loss equivalent to 12.5 percent or more of its prior year valuation for tax purposes, it is eligible for disaster aid for the two subsequent school years. The entitlement for 1979-80 was \$290 per ADA.

Source of State Aid

State money for education in Texas comes from three sources: the Available School Fund, explained earlier in this chapter, the Omnibus Tax Clearance Fund, and the General Revenue Fund. The Omnibus Tax Clearance Fund feeds money both into the Available Fund and the Foundation Fund. It is also discussed earlier in this chapter. The General Revenue Fund is the greatest source of school revenues. As its title suggests, it accumulates receipts of taxes on everything from cigarettes to liquor. It is then distributed as the legislature sees fit.

Local Money in Texas Schools

Local Fund Assignment

The local fund assignment was discussed more thoroughly earlier in this chapter. It is briefly reviewed again in order to place it in its proper category as one of the three major areas of local support for schools in Texas. It is the only amount of money that must be raised by the local district. Every district raises more than its local fund assignment, but such additional money provision is optional. The local fund assignment was determined by one of two methods for the 1979-80 school year. First, the district's full market value was multiplied by .0015 with the product being the local fund assignment. Second, the district's index value was multiplied by .00175 with the product again being the local fund assignment. In the past, school districts had a choice of using either of these two formulas. Beginning in 1980-81, however, there will be only one formula for all

districts. Index value will be multiplied by .0016 to yield local fund assignment.

Local Enrichment

Local enrichment is the term used to describe revenues from local taxes that are used for maintenance and operation costs above the level of the formula-established foundation program.

Hypothetical District Z is again examined in order to fully clarify the concept of enrichment. District Z had a local fund assignment of \$108,500. If it raised \$500,000 in local maintenance and operation taxes, it would have \$391,500 to spend for enrichment (\$500,000 - \$108,500). This "extra" money is considered to be enrichment even though the state would still be paying \$220,100 in ADA and \$386,400 in foundation funds to the district.

Local enrichment, as it now operates, receives more criticism than any other feature of the Texas school finance plan. The core of the criticism is the disparity in local tax wealth throughout the state, since the district's ability to enrich the Foundation School Program depends on its relative property wealth per student. In short, the ability to enrich is not equal. Therefore, the effort to enrich is also not equal. Rich districts, usually by virtue of their mineral wealth, can raise enrichment funds with only a minimal effort. Poor districts, on the other hand, can raise very little enrichment money even with a maximum effort.

This disparity becomes glaringly clear by examining two realistic examples. Sundown and Harleton are two small rural school

districts located in Hockley County, near Lubbock, and in Harrison County, near Marshall, respectively. Both have enrollments of about 400 students and a foundation program cost of about \$350,000. However, Sundown is mineral rich and Harleton is not. Sundown's full market value, index value, and local fund assignment were \$553 million, \$548 million, and \$830,000, respectively for the 1978-79 school year. Meanwhile, Harleton's respective figures were \$28 million, \$12 million, and \$21,000 for the same year. Sundown is thus capable of raising more than forty times as much revenue locally as Harleton because of the disparity in property values. Since its foundation cost is \$350,000, Sundown has \$480,000 ($\$830,000 - \$350,000$) plus its ADA money of \$113,600 ($400 \times \284) for a total of \$593,600 in enrichment funds. It has that much enrichment money without raising its tax rate one penny above the .0015 rate mandated by the state.³⁰

Harleton, on the other hand, has nothing for enrichment unless it raises its tax rate above the state minimum. Even at the maximum tax rate allowed by law, it could not come near to matching Sundown's receipts collected at the lowest rate allowed by law.³¹ As mentioned above, Sundown was able to raise \$830,000 by using the minimum required tax rate of .0015 for the 1978-79 school year. By contrast, Harleton raised only \$112,718 by using the maximum tax rate of .015 applied to an assessed property value of \$7,514,559.³² The maximum tax levy for any school district cannot be greater than the amount which would be raised if a rate of .014 were applied to the full market value of property in the district.³³ For Harleton, this

maximum levy would have been \$392,000--still less than half of the amount raised by Sundown at the minimum tax rate.

In general, enrichment money pays for all operating costs not covered by the Foundation School Program. Nearly one-half of such expenditures are for salaries of teachers hired in excess of the foundation program and for local salary supplements to pay teachers more than the state minimum.³⁴ The remainder pays for different types of insurance, food services, athletics, and the like.

In concluding this section on enrichment, it must be acknowledged that, although the Texas system is discriminatory, the overall concept is good. If a local community wants to raise the quality of its schools by increasing local taxes, it should not only be allowed, but encouraged to do so. However, it should have to make an effort to enrich. The current system is unfair because many districts enrich the foundation program with little or no tax effort. Enrichment is incidental in some districts because of the immense local tax base. Districts without such a tax base must make a much greater effort to raise enrichment funds which are often only a portion of what the rich districts have.

Construction and Bonded Indebtedness

Funds for construction and for retirement of bonded indebtedness are the third form of local revenue. They are raised through a separate tax levy. Like enrichment funds, they are optional; but, unlike enrichment, there is no state assistance or equalization for

construction and bonded indebtedness. For this particular expense, the local school district is on its own.

Because of the purely local nature of this source of revenue, the disparity between rich and poor districts is even greater than it is for enrichment funds. The state at least guarantees a minimum program for maintenance and operation. For construction, however, there are no assurances at all. The result of this enormous disparity can be seen in the physical plants of rich and poor districts. Sundown, Seminole, and Denver City, all in West Texas and all oil rich, are budget balance districts with ultra modern fully carpeted buildings, air conditioning, swimming pools, several gymnasiums, and school theaters. Others like Schulenburg, Waelder, and Harlingen have old, outdated, overcrowded, dilapidated, and noncarpeted buildings. Needless to say, they do without theaters, swimming pools, and extra gymnasiums.

Assessment of Property

Before it can be determined how much money will be raised through local taxes, it is necessary to know three figures. These are: (1) the taxable or index value of the property in the district, (2) the effective tax rate, and (3) the ratio of assessment. The taxable or index value is determined by the local tax assessor whose job it is to systematically and regularly appraise all property on the local tax rolls. The effective tax rate is determined by the board of trustees in accordance with state law. The ratio of assessment is also determined by the board of trustees. It indicates the

portion of taxable or index value of property which is actually subject to taxation. For example, an assessment ratio of 50 percent means that half of the value is taxed. An assessment of 25 percent means that only one-fourth of the value is taxed.

Maintenance and Operation Tax Rate

Tax rate refers to the factor by which the assessed value of property is multiplied to produce the actual amount of tax due. It is normally given in terms of dollars and cents per \$100 of assessed property value. For example, a tax rate of \$1.10 per \$100 means that a taxpayer's bill would be \$1.10 for every \$100 of taxable property that he owns. The tax bill on a \$50,000 full value home at 50 percent assessment would therefore be \$275 ($\$50,000 \times .5/100 \times 1.10 = \275). It must be pointed out that tax rate by itself is meaningless. It must be accompanied by the assessment ratio to have meaning. On the surface, a tax rate of \$.55 per \$100 seems less than one of \$1.10 per \$100. This would be so if the assessment ratio were the same for both. If the \$.55 rate were matched with an assessment ratio of 100 percent, the tax bill on a \$50,000 home would again be \$275 ($\$50,000 \times 1.00/100 \times .55 = \275)--the same as it was with a rate of \$1.10 and a ratio of 50 percent.

Texas law requires that a district not tax in excess of \$1.50 per \$100 of assessed property value for maintenance and operation purposes. Furthermore, the resulting tax levy cannot exceed the amount that would be raised by a rate of \$1.40 per \$100 applied to full market value of property.

The statewide average rate for maintenance and operation is \$1.17 per \$100 of assessed value of property. The range is from the maximum of \$1.50 in many districts to a low of \$.30 per \$100 in Center Point I. S. D.

Normally, if the tax rate is low, the ratio of assessment is high and vice versa. Low rates and low ratios together mean low taxes. The lowest school taxes in Texas are in the Santa Gertrudis I. S. D. in Kleberg County. Its rate is only \$.36 and its assessment ratio is only 30 percent. It should come as no surprise that, with an ADA of about 110 and a full market value of over \$302 million, Santa Gertrudis is the wealthiest school district in Texas with an ADA greater than forty.

Construction and Bonded Indebtedness Tax Rate

Funds for construction and debt service are raised through a separate tax levy. Thus, there are two local school taxes: one for maintenance and operation, the other for construction and debt retirement. The mechanics of the latter are the same as for the former. The amount of tax is figured by multiplying the rate times the assessed value of property just as described above.

There are two legal limitations on bonded indebtedness in Texas. A district may issue up to 10 percent of the total assessed value of its property in bonds. If total assessed value is \$50 million, up to \$5 million in bonds may be issued. The second limitation restricts a district's bonded indebtedness to the amount of funds that would result from a rate of \$1.00 per \$100 applied to the

district's assessed valuation. This second option is rarely used because it is too limiting.

The statewide average debt service tax rate for all school districts is \$.27 per \$100 of assessed value. The range is from a high of \$1.10 in Liberty Chapel I. S. D. to a low of \$0.00 in 117 different districts. The largest such district is Ector County which includes the Odessa schools.³⁵

In 1978-79, about \$362 million were levied statewide in debt service taxes. Houston I. S. D., not surprisingly, collected the highest amount with debt service tax receipts of \$20.7 million.³⁶ Almost every school district has a higher tax rate for maintenance and operation than for debt service. Of the few with a higher debt service rate, Ysleta I. S. D. stands out with a maintenance and operation rate of \$.36 and a debt service rate of \$1.08. In 1978-79, Ysleta raised \$7.3 million in debt service revenue but only \$2.4 million in maintenance and operation revenue.³⁷

Summary of Chapter

Chapter III has discussed and explained in detail the Texas Public School Finance Plan. In so doing, it has been divided into three major sections with each one examining a different source of public school revenue. The plan represents an effort to coordinate state and local revenue in order to promote equalization of expenditures among more than 1,000 independent school districts. Despite this effort, a tremendous disparity still exists in expenditures per pupil between the property rich and property poor districts.

It is in this already unequalized setting that federal funds are applied. Unlike state funds, which narrow but do not eliminate the gap in expenditures between rich and poor districts, federal funds are in no way related to state or local property wealth or tax effort. The question thus arises, does federal aid aggravate an already unequalized situation or does it serve to improve it? This dissertation attempts to find an answer.

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25. Texas Education Agency, STAPB Full Market and Index Values (Austin, Tex.: Texas Education Agency, 1979).

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32. Texas Education Agency, Nominal Tax Rates, Tax Levies, and Assessed Values from School District Official Budgets (Austin, Tex.: Texas Education Agency, 1979).

33. Hutchinson and Walker, Texas School Finance, p. 25.

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CHAPTER IV

REVIEW OF RELATED LITERATURE AND RESEARCH

Introductory Statement

This chapter focuses on reviewing the literature and research associated with federal aid to education. Information from a national as well as Texas perspective is presented in order to display both general and specific data for contrast and comparison.

Related Literature

There is an abundance of literature related to the topic of federal aid to education. Numerous advocates and adversaries have debated and discussed every aspect of the issue. It would be virtually impossible to mention every available reference. Those in this chapter have been cited because of their relevance in setting a background for better understanding the study described in this dissertation.

Hartwell Reed takes an overall positive view in advocating the idea that federal financial support for education is both possible and desirable.¹ Regardless of whether it be categorical or general in nature, he believes that the future of a stronger federal commitment in support of education is a likelihood. Three reasons are cited to support this belief. First, there are educational problems that can be solved by federal dollars. Second, there are members of Congress anxious to solve these problems. Finally, educational leadership is strong and will successfully inform the public, the Congress, and

the executive branch on the importance of a federal role in education.

John Ryor, former president of the National Education Association, concurs with Reed's support for a stronger federal commitment to education.² He recommends one-third federal financing of public education instead of the present one-fourteenth. This increased amount would constitute a fair share of the overall tab for preserving and improving the public schools. Ryor feels that only the federal government, with its broad tax base and efficient collection procedures, can erase the inequities among the states.

Anne Frentz expands on Ryor's comments by citing specific information to support the position that spending variations between states cannot be reasonably overcome without federal intervention.³ These state-to-state variations exist primarily because some states have more public school students per total population than others, and/or some have greater wealth from which to draw taxes. This underscores the fact that variations are not due merely to a difference in tax effort from one state to the next. For example, for the 1972-73 school year, the nationwide correlation between public school spending per ADA and per capita income for each state was .567. Additionally, per pupil expenditures ranged from a high of \$1,374 in Alaska to a low of \$531 in Alabama. Frentz proposes several methods for equalizing interstate expenditures. All of her suggestions call for increased federal involvement.

H. B. Pinkney asserts that the traditional burden of financial support for public education should be shifted from the district's local property taxes to state and federal levels.⁴ He offers no

quantitative formulas to suggest how much support should be shifted, but he believes that increased federal funds must be provided through categorical aid to districts based upon the identified needs of the children. In urban or poor school districts where academic achievement is lowest, the per pupil expenditure should be the highest. Fears of federal control of what has traditionally been a state and local function are described as unwarranted. Even if increased federal aid means increased federal control, Pinkney feels that such would be far less harmful than permitting the demise of public education.

Robert Wynkoop supports the concept of a federal foundation program for public elementary and secondary education.⁵ Such a program would help to compensate for the unequal distribution of wealth among the states. This disparity has been caused and perpetuated by federal policies. For example, Wynkoop says that most federal grants provided in the past have been conditional in nature. In other words, the receiving state or agency had to meet certain conditions in order to qualify for the grant. This forced potential recipients to direct local funds into areas stipulated by the prerequisites of the conditional grant. This trend resulted in areas not specified by conditional grants being funded out of leftover resources. Such leftover resources vary tremendously from one state to another. The National Defense Education Act of 1958 provided conditional funds for science, mathematics, and foreign language instruction. This federal intervention encouraged local districts to reallocate funds from other programs to the specified areas in order to capitalize on the

availability of conditional funds. Only wealthy districts were capable of doing this without harming the other programs.

Wynkoop's solution to this inequity is a federal foundation program comprised of both conditional and unconditional grants. Unconditional grants would be used to complement conditional allocations to insure the same fiscal capacity among states. This would be done by relating the size of an unconditional federal grant to the wealth of the local district.

Willis Hawley and Arthur Sheeky examine the basic organizational structure of the new Department of Education and focus on the federal role in educational research and development.⁶ They feel that this is one area of education that has been traditionally, but informally, relinquished in almost its entirety by the states to the federal government. For the last quarter century, the federal government has had a commanding role in the funding of this specialized educational activity. Such funds make up only a small fraction of overall federal expenditures for education, but they are very significant when compared to all levels of research funds spent by state, local, and private education agencies. The federal share of costs to support research and innovation designed to improve learning is about 90 percent.⁷ Hawley and Sheeky are hopeful that the office for educational research with its own assistant secretary will become a strong and recognized part of the Department of Education. As such, it would constitute at least one strong area of federal involvement that has historically been downplayed by the states and dominated by the federal government.

Richard Miller, in discussing different educational equalization programs, generalizes that most aid formulas distribute supplements inversely to local property wealth.⁸ He acknowledges, however, the existence of political realities which dictate that the very wealthy districts should be entitled to some aid as well. In regard to federal aid, he believes that it has no equalizing rationale whatsoever. Nevertheless, he concludes that it is moderately equalizing because its major thrust is directed at concentrations of disadvantaged students who tend to populate urban areas with relatively low tax bases. Miller thus offers a response to the same question that this dissertation attempts to answer.

Christopher Cross focuses more specifically on that portion of federal aid known as Title I.⁹ It is his belief that the formulas used to compute Title I benefits are completely inadequate. One part of the formula is based on census economic data to which he objects for two reasons. First, he feels it is wrong to use economic data to fulfill educational objectives. Second, he feels that the figures from a decennial census are soon hopelessly and completely out of date.

The other part of the Title I formula is based on welfare statistics from the program of Aid to Families with Dependent Children (AFDC). Cross' objection to this is the error rate and lack of quality control within the welfare agencies. He cites an HEW study revealing that over 10 percent of AFDC families were actually ineligible for the aid they received while another 22.8 percent received payments greater than those for which they were eligible.

Robert Main favors replacing the present system of federal aid with block grant funding.¹⁰ He caustically notes that by the early seventies, there were thirty-eight separate grant authorizations for instruction, thirty-seven for low-income students, and twenty-two for reading programs. Each had its own eligibility requirements, funding period, application procedure, and guidelines. Hence, he views the burden of red tape, paperwork, and compliance activities as massive and counterproductive. His solution is block funding which is described as more flexible than categorical aid but more structured than revenue sharing. It would provide general aid for broad programmatic areas with limited restrictions on application and on reporting how the funds were spent.

Main's suggestion for repackaging federal aid was also a popular topic during the Nixon administration. In 1971, President Nixon vetoed a \$700 million increase in categorical federal aid to education.¹¹ His counter proposal was a \$5 billion no-strings general revenue sharing bill. If the states followed the prevailing budget pattern at the time, 41 percent of the federal revenue sharing money would have gone to education in areas of need determined by the state. The thrust of Nixon's proposal was thus to turn programs aimed at specific goals into broader revenue sharing grants.

President Nixon's proposed changes in the distribution format for federal aid to education were the result of his belief that the targeted special programs were not measurably improving the success of poor children in schools.¹² He felt that America was simply not getting as much as it should out of the dollars it spends on education.

The red tape swaddling the targeted programs was hindering rather than helping local administrators who got mired in the federal maze of paper shuffling. He thus proposed a searching re-examination of the entire federal involvement in education with the objective of improved learning and fewer restrictions on the money provided to the states. Needless to say, his proposals were all but forgotten when national attention shifted to the Watergate case.

Dale Mann, a political scientist at Columbia University and a researcher for the Rand Corporation, presented several conclusions from his study of federal aid that were similar to those of President Nixon.¹³ After analyzing the effect of \$10 billion in federal aid to education during the 1960s, he felt that the results of even the best plans had been frustrating, uneven, unexpected, and temporary. His recommendation was not to give up on the federal government's effort to improve schools, but to find ways to make the goals clear. The federal government should then provide advice and money while the local officials figure out how to do the job.

Kern Alexander, director of the Institute for Educational Finance, would agree with Main's suggestion of block grants. Testifying before a congressional subcommittee in 1977, he stated: "General aid to elementary and secondary education is long overdue in this country."¹⁴ He also supports legislation that would reward states with federal money, if they equalize educational expenditures within their jurisdiction.

Stanley Pogrow also tends to agree with Main because of what he sees as the present bureaucratic quagmire associated with most

Federal programs.¹⁵ He feels that the proliferation of federal categorical programs, each with its own reporting and evaluation requirements, has dramatically and excessively increased the amounts of data collected from local education agencies by the federal government. He estimates that providing federally mandated data costs school districts \$230 million annually. Thus, Pogrow concludes that there is clearly a need to reduce the redundant and useless data flowing between levels of government.

Thomas Schmidt, Rhode Island Commissioner of Education, is yet another educator who is wary of the federal government's incessant demand for data under the existing system of federal programs.¹⁶ His primary complaint is that, since 1965, the federal government has increased reporting and record keeping to such an extent that many state and federal funds originally intended for student and educational programs have been diverted to cover clerical and administrative costs. With this in mind, he concludes that any federal initiatives in school finance should be aimed at assisting states in their own school finance reform studies. Hence, Schmidt actually opposes a nationwide system of school finance and advocates a federal role which merely assists the states in carrying out their responsibility.

Robert Cunningham offers support to Schmidt's viewpoint by comparing the federal involvements in education and health care.¹⁷ Speaking as a health care professional, he suggests that the red tape of federal regulation gets worse as the federal role gets larger. He notes that educators' current complaints stem from a federal

share of the overall cost that is less than 10 percent. In the health care field, the federal share is 40 percent of the overall cost and the federal regulation is proportionally greater and more confusing. Cunningham explains this occurrence with logical simplicity. As new programs in public education (or any other field) are proposed at the federal level, those responsible for drafting and implementing the legislation assure local officials that there will be no effort to influence policy or methodology. But, when the bills come in and costs begin to exceed predicted levels, the assurances are forgotten and mechanisms to control cost are created. These inevitably influence policy and methodology. The decisions go whence the money comes.

The most frequently cited argument against federal aid is the fear that it would lead to federal control of education. The states would be relinquishing to the federal government the rights and responsibilities for the conduct of public education. The president of the National School Boards Association, Carl B. Munch, warned in 1961: "The narcotic of federal aid will become a habit for whose indulgence the victims will soon surrender that which they now so highly prize."¹⁸ Twenty-two years earlier, in 1939, Dr. Samuel Brownell, who later became United States Commissioner of Education said: "If there is to be little or no federal control accompanying federal aid, what right have we to expect a major improvement of the education within states under the same leadership that they have now? Thus, if federal aid is to bring about better schools, it seems apparent that there must be some federal control."¹⁹

Another argument advanced by the opponents of federal aid is that such aid weakens the efforts of the individual states in providing for the needs of public education within their jurisdiction. In other words, the states would have a tendency to use federal money instead of and not in addition to state funds. This belief goes back as far as the last century and was expressed by Woodrow Wilson in 1886 when he wrote:

It was evident that no increase in the state appropriation for public education would be voted as long as there was the least prospect of aid from Washington. . . . There was deliberate determination to enjoy the easy position of a beneficiary of the national government to the fullest possible extent, rather than to be independent and support a good school system by its own unaided efforts.²⁰

Some opponents of federal aid to education base their opposition on the belief that the national government cannot afford to finance it as easily as the states. This contention was supported in 1962 by figures which showed the national debt to be approximately \$300 billion while total state and local government indebtedness was only \$62 billion with some states having no indebtedness at all.²¹ Statistical figures for 1980 also seem to support this belief by showing that the national debt stood at \$930.2 billion on December 31, 1980.²² If direct, contingent, and unfunded actuarial liabilities are included, the federal debt exceeds \$5.3 trillion against assets of less than \$1 trillion.²³ The implied conclusion is that until the federal government begins to balance its budget and reduce the national debt, it would be inappropriate for it to take on a program which the states have demonstrated they can take care of adequately.

Political scientist, Kenneth J. Buck, takes a novel approach in proposing reduced federal aid to education.²⁴ He believes that the economic problems of inflation and recession are more damaging to educational budgets than not enough federal aid. His suggestion for coping with inflation and recession is to diminish demand for federal funding within public education. To do the opposite and demand more federal money, encourages more deterioration in the national economy which in turn encourages a demand for more federal aid. A vicious cycle results unless educators attack inflation by requesting less, not more, federal assistance.

John Callahan and William Wilken pose the concern that Public Law 94-142 may detract from state efforts to equalize expenditures from school district to school district as it provides federal funds for the education of handicapped children.²⁵ They cite the worry of officials in several states that this law may have a substantial dis-equalizing impact if anticipated annual appropriations of over \$1 billion are permitted to flow out through the current distribution formula, which gives no consideration to local wealth and bases aid entitlements on the number of pupils receiving special education and related services. It is the intent of the study described in this dissertation to examine this very issue as it applies to federal aid in general.

Cohen discusses the case of Serrano v. Priest, 487 P. 2d 1241 (Cal. S.C. 1971), and makes the point that the California court accepted the plaintiff's motion that the coincidence of poor people living in poor districts was so great as to make a lawsuit

on behalf of one effectively a lawsuit on behalf of the other.²⁶

If this relationship between poverty and low property value per ADA occurs throughout the country, and not just in California, federal aid to education would tend to be equalizing since much of it is targeted toward children of poverty.

David Porter stresses that federal assistance is never entirely additive to ongoing local programs as it is theoretically intended to be.²⁷ Thus, federal money is used in place of, and not in addition to, local money. His research found that some districts were spending only Title I money on educationally deprived children. Such a practice could give poor children less than the average child without violating any federal requirements that the money be spent on poor children. In some southern districts in the past, black schools were entirely supported by federal funds while the white schools operated with local funds.²⁸ This again points to the fact that federal aid to education is distributed without regard to local wealth, tax effort, or current expenditure.

The irony of federal efforts to cut off aid to school districts not meeting standards of integration is that most of the federal aid in such systems has traditionally gone to the black schools. For example, in South Panola, Mississippi, 2,600 of the 4,650 students were black in 1969. Only 103 of those blacks attended white schools. When the government cut off almost \$300,000 in federal aid in the hope of forcing greater integration, the first program eliminated was the health service at the all-black high school.²⁹

Porter also points to another source of disequalization-- the fact that some large districts employ a special staff to work with executive branches both in Washington and the state capital.³⁰ The Dallas Independent School District's Research and Development Office is an example. This staff represents the district on task forces and committees set up in the state or federal bureaucracy, writes grant proposals, and administers the grants in progress. Since only the larger and wealthier school districts can afford the luxury of such a staff, the smaller and poorer districts are at a distinct disadvantage when it comes to competing for discretionary federal funds.

Sidney Tiedt offers an excellent summary of the major arguments for and against federal aid to education.³¹ Proponents state that only the federal government can guarantee equal educational opportunity throughout the country. It is impossible for some states to do this alone due to a greater than average number of children and a less than average amount of taxable wealth. Proponents also argue that the nation's welfare is directly affected by what happens in education. Thus, it should be a national concern. The need for an improved educational system is another argument used in support of federal aid. The only way to insure improvement in all fifty states is for the federal government to be an innovative agent. According to the supporters of federal participation in education, only the federal government has a tax base sufficiently broad to pay for a broad program of education. It is pointed out that two-thirds of the taxes in this country are collected by the federal government.

Closely related to the national concern for education is the fact that Americans are a very mobile society. Some 40 million people change their addresses and approximately 1 million move across state lines every year.³² This indicates the need for a strong minimum education program in every state. Federal aid supporters also reference historical legislation to emphasize that there is nothing new or unusual about it. Congress has passed over two hundred laws involving education since 1785. Finally, federal aid is justified in the Constitution by Article I, Section 8 which gives Congress the power to provide for the general welfare of the United States.

Opponents to the federal government's involvement in education believe that it is impossible to equalize educational opportunity without dragging down educational standards to a mediocrity that would eliminate the outstanding schools. They also believe that there is no need for federal aid. Rather, the need is to tighten up the present curriculum, eliminate the frills, and use existing facilities more efficiently. One of the strongest arguments against federal aid is that state and local control will be lost to the federal government, if the federal involvement increases. Furthermore, it is often cited that education is not mentioned in the Constitution and that federal aid to it is therefore unconstitutional. Additionally, the federal government is in no position to fund our most expensive domestic cost, that of education, without damaging financial support for genuinely federal responsibilities such as national defense. Finally, federal assistance lessens the sense of local pride and responsibility the people feel for their schools.

It is feared that the federal government will come between the schools and the local community.

Related Research

Federal aid to education has become increasingly popular over the past ten years as a topic of research. Most studies have focused on the effect of different federal programs from one state to the next. Property wealth, income, and degree of urbanization have all been considered as variables related to federal aid. Although there is no overall paucity in available research, relatively little has been studied on the effects of federal aid within a state among the many local districts. The research referenced in this chapter is intended to display the most relevant studies from a national perspective. Hopefully, it will establish a background for better understanding the thrust of the study contained in this dissertation which attempts to analyze the effect of federal aid within the state of Texas.

Jane Sjogren reports the results of a 1975 through 1977 study which analyzed Title I costs at the district level under regular and alternative allocation procedures.³³ She was interested in determining the effects of allowing districts greater control over their Title I allocations. To make such a study, the National Institute of Education arranged for thirteen school districts to receive waivers of federal allocation regulations governing Title I. A consulting firm was then contracted to study the effects of changes made by these "demonstration" districts. Through a complex series of

formulas, student services were measured by the amount of time students spent in each instructional component of the Title I program during the year. The study cautiously concludes that there is limited evidence that districts are able to provide more Title I services when they are given greater discretion in the allocation of funds. Thus, the limited research tends to support the already mentioned views of Pogrow and Schmidt that regulations on federal money do more harm than good.

John Wagner and Dewey Stollar also examined the Title I program by studying its equalization effect on the counties in nine selected states.³⁴ Using data from the 1968-69 school year, their investigation revealed a significant inverse relationship between Title I allocations per child in enrollment and adjusted assessed valuation of property per school age child within four of the nine selected states. In the remaining five states, there was no significant relationship between the two variables. It was thus concluded that Title I had an equalizing effect among counties within Colorado, Florida, Ohio, and Tennessee, and a neutral effect among counties within Massachusetts, Missouri, Pennsylvania, Texas, and Washington. The insignificant correlation coefficient for Texas was $-.0813$.

Their investigation also revealed a significant inverse relationship between Title I allocations per child in enrollment and effective buying income per school age child within eight of the nine selected states. Only within Massachusetts was it concluded that Title I had no significant equalizing effect. The significant correlation coefficient for Texas was $-.5520$.

David Porter examined the equalization effect of the Title II portion of the Elementary and Secondary Education Act by correlating benefits received per pupil with personal income per pupil.³⁵ Title II was designed to provide assistance to local districts in procuring school library resources, textbooks, and other printed material. Using 1968 data, Porter showed that Title II allotments correlate significantly at .47 with state wealth. Thus, the wealthier states, measured by income per student, received more Title II money per pupil than the poorer states.

Michael Timpane cites per pupil expenditures from the 1971-72 school year to support the contention that the federal government should attempt to equalize educational expenditures among the states.³⁶ Average per pupil expenditures ranged from \$543 in Alabama to \$1441 in Alaska and \$1460 in New York. He feels that this range is explained only partly by differences in the cost of education and in the level of tax effort. Most of the difference was due to variations in wealth. Thus, he reasons that the arguments justifying intrastate equalization plans are similarly compelling for interstate equalization which only the federal government can directly address.

Roe Johns has offered several different approaches to providing general federal aid for such interstate equalization.³⁷ The total amount of federal aid used to demonstrate the impact of each of his suggestions was calculated at 20 percent of state and local revenues for the public schools for 1969-70. He selected a figure of 20 percent because it would be substantial enough to accomplish the purposes of general aid and because it would provide for easier long range

planning in the budgeting process at local, state, and federal levels.

Johns' first plan called for a national foundation program in which each state would receive a federal contribution based upon its need. He assumed that each state would budget a minimum of \$800 per public school student as its foundation amount. The state and local governments together would then be required to spend 4 percent of the state's total personal income as the nonfederal share of the foundation amount. The difference between the foundation amount and the nonfederal share would be the federal contribution based on need. With an expenditure rate of \$800 per student and a state contribution rate of 4 percent of total personal income, Texas would have received \$239 in federal aid per student for the 1969-70 school year. Connecticut, Illinois, Massachusetts, New Jersey, and New York would have received no federal assistance because their 4 percent share would have exceeded the foundation amount of \$800 per student. Mississippi and Utah, with federal contributions of \$426 and \$387 respectively, would have received the most federal aid.

Johns' second plan called for an equal grant of \$158 per pupil from the federal government with no required state and local effort. Texas would have received a total of \$410 million in federal aid for 1969-70 simply because it had 2.6 million public school students. Only California (\$778 million) and New York (\$545 million) would have received more because of their greater enrollments. On the surface, such a plan would seem to have no equalizing effect. It must be remembered, however, that the wealthier states contribute more in

taxes to the federal treasury than the poor ones. Yet all states would still be receiving the same amount per student in return as federal aid.

Johns' third plan provided for an equal grant per pupil for equal effort in proportion to ability. A maximum federal contribution of \$158 per pupil would go to states meeting or exceeding the national average nonfederal revenue which would be expressed as a percentage of net personal income. In 1969-70, nonfederal revenue for public schools was 6.24 percent of net personal income for the United States as a whole. Thirty states met or exceeded that percentage and would have received the maximum federal grant of \$158 per pupil. New Mexico had the highest percentage with a figure of 8.90. Nebraska had the lowest with a figure of 5.00 percent. Texas had a nonfederal expenditure of 5.43 percent of its net personal income. Since 5.43 is 87 percent of the national average of 6.24, Texas would have received 87 percent of the maximum federal grant of \$158 or \$137 per pupil.

Ginsburg and Killalea conducted an extensive study which showed the distribution of several different kinds of federal aid to school districts by regions of the country and by concentrations of poverty, property wealth, and degree of urbanization.³⁸ All of their figures are displayed as dollars per pupil based on 1970 data. The four geographic regions used are Northeast, South, Midwest, and West. Districts were ranked in terms of their relative concentration of population in poverty and divided into three groups: those with the greatest concentration of poverty containing 25 percent of the students

in the state, those containing the next 50 percent, and those containing the remaining 25 percent. Classification by property wealth per pupil was also considered in three groups: low 25 percent, middle 50 percent, and high 25 percent. Degree of urbanization was categorized as central city, suburban, or nonmetropolitan.

For Title I benefits, Ginsburg and Killalea showed that the national average allotment was \$22.90 with southern states receiving a high average of \$32.00 per pupil and midwestern states receiving a low average of \$16.00 per pupil. Based on concentrations of poverty, the national average was \$45.70 in the poorest districts, \$19.40 in the middle districts, and \$7.20 in the wealthiest districts. This pattern was consistent in all four geographic regions with the poorest districts receiving the most federal aid and the wealthiest receiving the least amount of aid. Based on property wealth per pupil, the national average was \$23.10 in the property poor districts, \$21.90 in the middle districts, and a startling \$24.80 in the property rich districts. Within the different geographic regions, only in the south did the property rich districts receive less in Title I benefits than the middle and property poor districts. In the northeast, the property rich districts received an average of \$40.20 per pupil while the property poor districts received an average of only \$13.40--a ratio of three to one! Based on urbanization, the national average was \$32.70 per pupil in the central cities, \$30.20 in the nonmetropolitan areas, and \$10.50 in suburban locations.

For federal impact aid, which flows primarily to districts with high concentrations of children whose parents live and/or work

on federal property, the national average allotment was \$9.40 with western states receiving a high average of \$18.00 per pupil and northeastern states receiving a low average of \$5.20 per pupil. Based on concentrations of poverty, the national average was \$7.60 in the poorest districts, \$10.50 in the middle districts, and \$9.30 in the wealthiest districts. Only in the northeast did the poorest districts receive more in impact aid per pupil than the middle or wealthiest districts. In the other three regions, the middle districts received the most aid. Based on property wealth per pupil, the national average was \$14.80 in property poor districts, \$8.40 in the middle districts, and \$5.90 in the property rich districts. This pattern was consistent in all four geographic regions with the property poor districts receiving the least. Based on urbanization, the national average was \$9.40 in the central cities, \$7.60 in the nonmetropolitan areas, and \$10.80 in suburban locations.

Ginsburg and Killalea also examined federal aid as a whole for each of the categories already described. The national average was \$48.60 with southern states receiving a high average of \$62.30 per pupil and midwestern states receiving a low average of \$36.40 per pupil. Based on concentrations of poverty, the national average was \$78.10 in the poorest districts, \$45.10 in the middle districts, and \$26.00 in the wealthiest districts. This pattern was consistent in all four geographic regions. Based on property wealth per pupil, the national average was \$52.40 in property poor districts, \$46.90 in the middle districts, and \$48.20 in the property rich districts. Within the different regions, there was considerable inconsistency. In the

northeast, the average federal aid per pupil from poorest to richest district was \$28.40, \$37.00, and \$66.20. Quite simply, the rich got richer. Only in the south did the property rich districts receive less federal aid than the middle and property poor districts. The figures were \$45.90, \$60.90, and \$81.50, respectively. Based on urbanization, the national average was \$68.20 in the central cities, \$53.30 in the nonmetropolitan areas, and \$32.20 in suburban locations.

Percy Burrup examined the amount of land owned by the federal government in each state in his study of federal aid.³⁹ Since federally owned land is nontaxable by the states or local districts, federal impact aid, designed to compensate for such land, would theoretically be related directly to it. Census figures from 1970 showed that 33.6 percent of the land in the United States was owned by the federal government.⁴⁰ The range of federal ownership was from a low of 0.3 percent in Connecticut to a high of 97.1 percent in Alaska. Texas ranked eleventh with a percentage of 1.8. The twelve states with the highest percentage of federal ownership were all located in the Western United States. All had a federal ownership of greater than 29 percent. This greater federal presence in the West can be related to the Ginsburg and Killalea study which showed that federal impact aid flowed in greater amounts to the western states than to the other geographic regions of the country.

Bedenbaugh and Alexander also conducted a very extensive study to analyze the equalization effect of federal aid from a national perspective.⁴¹ Using 1969 data, they displayed eleven categories of federal aid including Title I, Title II, Impact Aid, and vocational

education aid. Also included was a total category which combined all program allocations. In addition to displaying dollar amounts per pupil for the various programs, Bedenbaugh and Alexander correlated the allocation per child of school age with personal income per child of school age which served as a measure of relative ability. A significant negative correlation indicated that the appropriation had an equalizing effect; a significant positive correlation, a disequalizing effect; and no significant correlation, a neutral effect.

The results showed a significant negative correlation for Title I allocations. This finding supports that of Wagner and Stollar, mentioned earlier, who also concluded that Title I had an equalizing effect when related to personal income. A significant positive correlation was computed for Title II allocations. This finding agrees with that of Porter, also mentioned earlier, and suggests that Title II benefits are disequalizing. No significant correlation was found for Impact Aid, suggesting that it has a neutral effect on equalization. For the combined allocation of all federal aid programs, a significant negative correlation was computed, thus suggesting that federal aid as a whole has an equalizing effect when related to personal income per school age child within the states.

An earlier study by Kern Alexander also showed that federal programs for all functions had a tendency toward greater equalization.⁴² The poorer states, based on per capita income, received greater shares of federal grants than the wealthier states. Use of the Spearman Rank Order method found that federal funds for the 1966-67 school year

showed an inverse correlation with state income of $-.653$. The only federal program that did not provide at least some equalization was Title II of the Elementary and Secondary Education Act. This program, which provides funds for library and other printed materials, actually allowed the rich to get richer by producing a correlation coefficient of $+.47$. This conclusion concerning Title II agrees with Alexander's later research as well as with that of Porter.

Alexander later altered his 1969 finding that impact aid had a neutral effect on equalization. His 1970-71 study caused him to conclude that it favors children in wealthy states over children in poorer states.⁴³ This conclusion is based on the fact that the formula used to determine the amount of aid has several options. A school district may multiply the number of its eligible children times one-half the national average per pupil operating cost, one-half the state average per pupil operating cost, or the average local expenditure per pupil of comparable school districts in the state. The district chooses the formula which results in the highest amount of aid per eligible student. Although there are three alternatives, impact aid in property poor school districts within poor or low expenditure states will be less than in property rich districts or in poor districts within high expenditure states. This is so because one-half of the national average per pupil expenditure serves as a ceiling for the poor districts in poor states. By using one of the other two options, wealthier districts and states can generate greater amounts of impact aid. Alexander's data showed this to be exactly the case. Whereas thirteen states were limited to impact aid

per eligible student of \$307 (one-half the national average per pupil expenditure) in 1970, six states received more than \$500 per eligible student. Alaskan school districts received an average of \$736 per eligible student or more than twice as much per unit of need as districts in the thirteen states limited by one-half the federal average. Texas districts received an average entitlement of \$315 per eligible student. This placed Texas 37th among the states. Hence, Alexander concluded that the wealth of the state is the significant determiner of the amount of federal impact aid.

Joel Berke, Jay Moskowitz, and Judy Sinkin studied the relationship between federal aid, property wealth, and per pupil expenditures in several selected states.⁴⁴ In doing so, they used a quintile system which divided the state's school districts into fifths based on property wealth per student. Their 1970 data for Texas showed that the first or wealthiest quintile had an average per pupil expenditure of \$785 including \$58 in federal revenue. The second quintile had average figures of \$620 and \$50. The third quintile had average figures of \$607 and \$51. The fourth quintile had average figures of \$572 and \$80. The fifth and poorest quintile had average figures of \$524 and \$87. Thus, the fourth and fifth quintiles, representing the poorest Texas school districts, according to property wealth per ADA, received more federal aid than the wealthier three quintiles. However, it should be noted that the first and wealthiest quintile received on the average more federal aid than the less wealthy second and third quintiles.

For the state of New York, Berke, Moskowitz, and Sinkin's figures are even more startling. Average per pupil expenditure in 1970 for the first and wealthiest quintile was \$1,533 including \$42 in federal aid. The second quintile had average figures of \$1,306 and \$49. The third quintile had average figures of \$1,282 and \$40. The fourth quintile had average figures of \$1,177 and \$24. The fifth and poorest quintile had average figures of \$1,153 and \$20. Thus, the poorest quintile received less federal aid than the richest while the second wealthiest quintile received the most. In addition to New York, the wealthiest quintile received more federal aid than the poorest in 1970 in Michigan, Ohio, and Washington.

Joel Berke also analyzed 1967 figures on the impact of federal aid on the five major metropolitan areas of Los Angeles, New York, Houston, Detroit, and Boston.⁴⁵ He divided school districts in those areas into four categories of property wealth and labeled them high, moderately high, moderately low, and low. In New York and Detroit, the amount of federal aid was greater per pupil in the high wealth category than in any of the other categories. In Houston and Boston, it was greater in the high wealth category than in the low one. Only in Los Angeles, was the relationship inverse with the low wealth districts receiving the most federal aid per pupil and the high wealth districts receiving the least.

As part of the same study, Berke correlated federal revenue with state aid to school districts in the metropolitan areas of California, New York, Texas, Michigan, and Massachusetts.⁴⁶ Results showed virtually a random relationship between the two, except in

Texas where there was a slight correlation (.29) between federal and state aid to local metropolitan districts. When federal aid was correlated with local revenue in the same districts, all of the relationships were insignificantly negative, except again for Texas, thus indicating a neutral effect for federal aid in the metropolitan districts of California, New York, Michigan, and Massachusetts, but a slightly equalizing effect in the metropolitan districts of Texas.

Other research by Berke provided an evidentiary affidavit in the Rodriquez v. San Antonio, 337 F. Supp. 280 (W.D. Tex. 1971), school finance case.⁴⁷ His study supported the plaintiff in arguing that the Texas school finance plan was unconstitutional because it failed to equalize educational expenditures among school districts. Berke's 1969 data, however, led him to conclude that federal aid in Texas did have an equalizing effect.⁴⁸ His figures were taken from a Syracuse University study of 110 Texas school districts that were divided into five groups based on market value of taxable property per pupil. Those with more than \$100,000 in property value per pupil had local and state revenues of \$815 and federal revenues of \$41 per student. Those between \$50,000 and \$100,000 had local and state revenues of \$544 and federal revenues of \$66 per student. Those between \$30,000 and \$50,000 had revenues of \$484 and \$45. Those between \$10,000 and \$30,000 had revenues of \$461 and \$85. The final group with property values per pupil of less than \$10,000 had local and state revenues of \$305 and federal revenues of \$135. Berke's observation was that federal aid flowed in greater magnitude to poorer school systems with the exception of the middle category.

Since the poorest districts received the most federal aid while the richest ones received the least, an equalizing trend was evident.

Lawrence Brown and Alan Ginsburg cite several studies reflecting the impact of federal aid. A 1970 study of five states examined federal aid and property wealth per pupil.⁴⁹ School districts within each of the states were defined as low (those of lowest property valuation per pupil containing 25 percent of the children), middle (those next lowest in relative property value that contain 50 percent of the children), and high (the remaining districts and 25 percent of the children). In Arkansas, Nebraska, and Oklahoma, the low-tax-base districts received more federal aid per pupil than the middle-tax-base districts which in turn received more federal aid than the high-tax-base districts. In Ohio and New York, however, the situation was reversed. In Ohio, the high-tax-base districts received 136 percent of the state average in federal aid per pupil, while the middle-tax-base districts received 96 percent, and the low-tax-base districts only 73 percent. In New York, the figures were even more dramatic. The high-tax-base districts received 182 percent of the state average in federal aid per pupil, the middle-tax-base districts received 90 percent, and the low-tax-base districts received only 38 percent. Thus, Brown and Ginsburg's figures for New York support those already mentioned of Berke, Moskowitz, and Sinkin.

Brown and Ginsburg also displayed data for each state reflecting the state's revenue per pupil relative to the national average.⁵⁰ At the high extreme for 1976 was Alaska with total revenues per pupil,

federal revenue per pupil, and nonfederal revenue per pupil of 183.2 percent, 298.4 percent, and 171.5 percent, respectively, of the national average. At the low extreme, Mississippi's total revenues per pupil and nonfederal revenues per pupil were 69.0 and 59.9 percent of the national average. Connecticut's federal revenue per pupil was only 48.9 percent of the national average. Texas had total revenues per pupil and nonfederal revenues per pupil that were 92.5 percent and 91.4 percent of the national average, respectively. At the same time, Texas' federal revenue per pupil was 103.7 percent of the national average, thus indicating that Texas received more per pupil in federal aid than most other states. In fact, Brown and Ginsburg show that Texas ranked nineteenth among the states in federal revenue per pupil.

Brown and Ginsburg pulled all of their 1970 data together in a table which displays information for every state and region of the country. Their national totals reflect that school districts categorized by property wealth as low had average total revenues per pupil of \$793.70 including \$54.90 in federal aid.⁵¹ The middle-tax-base districts had revenues per pupil of \$869.50 including \$48.40 in federal aid. The high-tax-base districts had revenues per pupil of \$1,028.70 including \$51.80 in federal aid. Thus, the districts with the least property wealth and 25 percent of the ADA received the most federal aid, but the districts with the most property wealth and 25 percent of the ADA still received more federal aid than those in the middle.

For Texas, the pattern was the same. Low-tax-base districts had average total revenues per pupil of \$557.20 including federal aid of \$81. Middle-tax-base districts had average total revenues per pupil of \$614.40 including federal aid of \$38.40. High-tax-base districts had average total revenues per pupil of \$756.40 including federal aid of \$43.50.⁵² Thus, just as the national figures indicate, the middle school districts in Texas based on property wealth, received the least amount of federal aid.

Since the Canadian school finance system is similar to that in the United States, it can be helpful to observe the findings of Wilfred Brown from his study of federal aid to education in the Canadian provinces.⁵³ The British North American Act of 1867 gave each province the right and the responsibility to develop and administer its own school system. Thus, ten district provincial systems of elementary and secondary education have evolved in Canada. As in the United States, most of the revenue for education is derived from a combination of local property taxes and provincial government grants from general revenue. For Canada as a whole, the provincial share of funds increased from 43 percent in 1961 to 60 percent in 1971 while the local share dropped from 46 to 32 percent. Federal spending also decreased from 4.1 percent to 3.5 percent over the same decade. The remaining percentage of revenue came from other sources such as fees.

By province, shares for the different levels of government varied considerably. In 1971, the local contribution ranged from a low of 0.0 percent in New Brunswick to a high of 46.3 percent in

Saskatchewan. The provincial contribution ranged from a low of 48.7 percent in Saskatchewan to a high of 95.5 percent in New Brunswick. The federal contribution ranged from a low of 0.3 percent in both Ontario and British Columbia to a high of 7.0 percent in Prince Edward Island.

In terms of expenditures per pupil, there was a definite trend toward greater equalization among the Canadian provinces from 1961 to 1971. In 1961, the average variation in per pupil expenditures from the national mean was 31.2 percent. This figure had shrunk to 20.4 percent in 1971. Brown attributes this development to the application of federal general purpose revenue grants which are determined by an equalization formula based on potential sources of provincial revenue. These grants do not appear as federal aid to education because they may be spent on anything. In short, equalization of educational expenditures is being promoted in Canada by increasing the use of federal revenue grants that are inversely related to provincial wealth, but that do not have to be directly spent on education. The result, according to Brown, is greater provincial control and more equalization in terms of per pupil expenditures.

The final research study referenced in this chapter involves a United States Department of Health, Education, and Welfare tabulation of disparity indexes for each state.⁵⁴ The ratio of expenditures at the 95th percentile of students to expenditures at the 5th percentile was used as an index of expenditure disparities at the extremes. The exclusion of the highest and lowest 5 percent was intended to allow for circumstances that might justify some extreme unevenness in

the distribution of resources. For example, a value of 3.5 means that school systems at the 95th percentile spend three and one-half times the expenditures per pupil as those at the 5th percentile. In 1977, Massachusetts had the highest disparity index among the states with a figure of 2.22. Hawaii, with only one school district in the state, had the lowest index value of 1.00. New Hampshire was the next lowest with a value of 1.18. Texas ranked twenty-third among the states with a disparity index value of 1.69.

Summary of Chapter

Chapter IV has reviewed the literature and research related to federal aid to education. The literature reflects a variety of opinions ranging from those who consider federal aid to be the solution to many educational problems to those who consider it to be the source of such problems. Between the extremes, are those who look on federal aid as supplemental assistance to the states and local districts in meeting their educational responsibilities. This latter viewpoint frequently forms the basis for the criticism that federal aid would be much more effective and efficient, if it were distributed differently.

The research reflects numerous studies on the equalization effect of federal aid. From a national, regional, and state perspective federal aid has been related to property wealth, income level, and degree of urbanization. Some studies have examined different segments of federal aid such as Title I or Impact Aid. Other studies have analyzed it in its aggregate. Most studies have shown that federal aid has an equalizing or neutral effect on expenditures from a national

perspective. Exceptions to this trend are the northeastern states of Massachusetts and New York and the aid specifically distributed under Title II grants.

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CHAPTER V

DESIGN OF THE STUDY

Introduction

The intent of this study is to analyze the impact of federal aid on public elementary and secondary education in Texas. An attempt will be made to answer two questions. What is the relationship between federal aid and the local tax base? What effect do federal funds have on interdistrict equalization of revenues?

In order to answer these questions, two null hypotheses are to be tested. The first assumes that there is no relationship between federal aid per ADA and tax base per ADA in local school districts in Texas. The second assumes that federal aid to local school districts in Texas is neither more nor less equalizing in terms of per pupil revenues.

Procedures

Five different procedures will be used to test the two null hypotheses for practical and statistical significance. Before any of them are applied, however, specific steps will be followed to produce an accurate data file with which to carry out the statistical techniques.

As mentioned in Chapter I under Limitations, the source of all data will be the Texas Education Agency. Every school district in Texas is required to submit certain financial data to the TEA. The data are then organized, summarized, and made available to those

requesting them. Thus, the task of acquiring reliable data is simplified and facilitated by the authority and capability of the TEA.

Another benefit of having access to data collected by the TEA is the capability of analyzing information from every single school district in Texas. The entire population of school districts is included in the study, instead of only a representative sample. This increases the reliability and validity of the study.

The first step in producing the required data file will be the acquisition from the TEA of 1978-79 figures for refined ADA, index property value, total revenue, and federal revenue for every Texas school district. These figures will be entered on coding sheets along with each school district's identification number. The coding sheets will then be used as a source for preparing one keypunched data card for every school district in the state. Hence, there will be 1072 cards in the data file.

A specific example can be seen by examining the figures for the Lubbock Independent School District. The data card for Lubbock would contain its identification number of 152901; its ADA of 28,198; its index property value of 1,577,328,468; its total revenue of 46,894,664; and its federal revenue of 3,384,213.

After having been keypunched, the cards will be verified and interpreted in order to detect any errors in the original keypunching. The verified cards will then be listed in order to visually display the punched data and thus facilitate the detection of mistakes. As a final check for accuracy, the data on the cards will be summed for each category to yield a total figure for ADA, index property value, total

revenue, and federal revenue. These total figures will then be reconciled with the totals originally provided by the TEA. If the figures do not match, the punched data will be manually checked for accuracy until the discrepancy is located and corrected. If erroneous data are identified at any of the steps above, a new and corrected data card will be prepared and placed in the file. The erroneous card will be removed and eliminated.

When it has been determined that the data file of 1072 cards is accurate, the cards will be entered into the main frame computer system at Texas Tech University. The data will then be converted from card to internal core storage where they will be filed under a subaccount managed by the Department of Educational Administration and Supervision. The original card file will be maintained as a backup to the newly created internal file. Upon completion of this step, the data will be available for use by anyone with the approval of the Department of Administration and Supervision. The data will also be subject to internal manipulation and computation. For example, it will be a relatively simple programming step to produce a figure representing federal revenue per ADA by dividing the district's ADA into its federal revenue.

At this point, the analysis of data will be organized to accept or reject the two null hypotheses. One technique will be applied to analyze the first null hypothesis while four different methods will be used to analyze the second null hypothesis. These five procedures are described in the following sections.

Relationship Between Federal Aid Per ADA and Tax Base Per ADA

The first null hypothesis assumes that there is no relationship between federal aid per ADA and tax base per ADA in local school districts in Texas. In order to accept or reject this hypothesis, index value per ADA will be correlated with federal revenue per ADA. Data for this correlation will come from the computer file produced and described earlier.

A similar correlation technique was used by Alexander and Bedenbaugh in analyzing the equalization effect of federal aid programs for the 1968-69 school year.¹ Their study correlated personal income per child of school age with ten different federal aid programs for each of the fifty states.

The actual correlation computation will be done mechanically by computer using the Pearson Product-Moment technique as described by Cornett and Beckner.² In computing, there will be two items of data for every school district in Texas. These pairs of data will be used in the correlation formula a number of times equal to the district's ADA. For example, if a school district's index value per ADA is \$90,000, its federal revenue per ADA is \$200 and its ADA is 1,300; the figures 90,000 and 200 would be used as a pair 1,300 times in the correlation computation. This weighting of each school district by its ADA ensures that the larger districts like Houston are not correlated equally with the smaller districts like Sundown. The end result will be a number of pairs equal to the statewide ADA which is expected to be approximately 2.5 million.

After the correlation coefficient is computed, its significance will be determined to find out if the degree of relationship between index value and federal revenue is beyond what pure chance would allow. Using the number of degrees of freedom equal to the statewide ADA minus two, the correlation coefficient will be matched against a table value at the .01 level of significance. If it exceeds the table value, the first null hypothesis will be rejected and it will be concluded that there is a significant relationship (either positive or negative) between index value per ADA and federal revenue per ADA. If the correlation coefficient does not exceed the table value, the first null hypothesis will be accepted and it will be concluded that there is no significant relationship between the two variables.

Equalization Based on Disparity Index Comparisons

The second null hypothesis assumes that federal aid to local school districts in Texas is neither more nor less equalizing in terms of per pupil revenues. The first procedure for testing the equalization effect of federal aid is adopted from the National Center for Education Statistics.³ The ratio of expenditures at the 95th percentile of students to expenditures at the 5th percentile of students is used as an index of expenditure disparity at the extremes. The exclusion of the highest and lowest 5 percent is intended to allow for circumstances that might justify some extreme unevenness in the distribution of resources. For example, the state of Texas as a whole had a 1970 disparity index of 1.90 and a 1977 index of 1.69.⁴ This means that the Texas school district at the 95th percentile spent 1.9 times

as much per pupil as the district at the 5th percentile in 1970. In 1977, the disparity had narrowed to 1.69 times as much.

For this study, revenue per ADA will be used to compute the disparity index. The data file described earlier will be sorted by total revenue per ADA and listed from highest to lowest. The statewide ADA will then be determined along with a 95th and 5th percentile figure. These selected figures will then be located in the sorted file described above, thus displaying a total revenue per ADA amount for both the 95th and 5th percentile. A disparity index will be produced by computing the ratio of total revenue per pupil at the 95th percentile to total revenue per pupil at the 5th percentile.

For example, if the statewide ADA is 2,000,000 students, the 95th percentile would include the first 100,000 while the 5th percentile would include all but the last 100,000. The school district with the 100,000th student would then be located and its total revenue per pupil displayed. Let's assume the total revenue per pupil is \$1,800. The school district with the 1,900,000th (all but the last 100,000) student would also be located and its total revenue per pupil displayed. Let's assume the figure is \$900. The ratio of 95th percentile to 5th percentile is then computed to produce a disparity index of 2.00 ($\$1,800 / \900).

Once the disparity index for total revenue per ADA has been determined, the data file is resorted by nonfederal revenue per ADA from highest to lowest. The entire procedure is then repeated to produce a second disparity index. Two indexes are thus available for examination. One represents revenue per pupil with federal aid

(total revenue) while the other represents revenue per pupil without federal aid (nonfederal revenue).

At this point, the difference between the two disparity indexes can only be described. It will be possible to say that there is a larger or smaller disparity when federal aid is added to local and state revenue. However, it will be impossible to determine if that difference in disparity is statistically significant. There are simply no statistical techniques available with which to evaluate the index figures generated through this method. The index is essentially the result of a selected range comparison (95th to 5th percentile instead of greatest to least) and range is traditionally shunned as the least stable measure of variability.⁵

Equalization Based on Quartile Comparisons of Revenue Per Pupil With and Without Federal Aid

The second procedure for testing the equalization effect of federal aid is adopted from a study done by Brown and Ginsburg and reported by Timpane.⁶ School districts are divided into three groups based on equalized property value per ADA. Average figures are then calculated for each of the three groups for total revenue per ADA, nonfederal revenue per ADA, and federal revenue per ADA. The first step in this procedure is to sort the data file by index value per ADA from highest to lowest. The statewide ADA will then be broken into a 25th and a 75th percentile. These two figures will be located in the sorted file to divide it into three groups: the top 25 percent in ADA based on index property wealth; the bottom 25 percent

in ADA based on index property wealth; and the middle 50 percent in ADA based on index property wealth.

The three groups will then be treated separately to produce an average total revenue per ADA, average nonfederal revenue per ADA, and average federal revenue per ADA for each one. For example, 1970 figures show that those Texas districts of highest property valuation per pupil containing 25 percent of the students had an average total revenue per ADA of \$756, an average nonfederal revenue per ADA of \$713, and an average federal revenue per ADA of \$43. Those Texas districts of lowest property valuation per pupil containing 25 percent of the students had average figures of \$557, \$476, and \$81, respectively. Meanwhile, those Texas districts in the middle containing 50 percent of the students had average figures of \$614, \$576, and \$38.⁷

Quick scrutiny of these 1970 figures reveals several glaring inequalities that can be analyzed both descriptively and statistically. Descriptively, it can be noted that the wealthiest districts with 25 percent of the ADA received on the average more federal revenue per ADA than those districts in the middle with 50 percent of the ADA. This is clearly a case of the rich getting richer. It should also be noted that both the middle and high groups had more nonfederal revenue per ADA than the low group had in total revenue per ADA. Yet they still received federal money to raise the disparity even more.

Statistically, the figures produced by the three groups can be subjected to an analysis of variance. Average revenues per ADA without federal aid can be compared for variance with average revenues

with federal aid. To make this computation, the middle group figures are taken twice because they represent 50 percent of the ADA while the high and low groups represent only 25 percent. Using 1970 figures again, the four figures of \$713, \$576, \$576, and \$476 produce a variance of 9,476 for average revenue per ADA without federal aid. Meanwhile, the four figures of \$756, \$614, \$614, and \$557 produce a variance of 7,202 for average revenue per ADA with federal aid.⁸ Thus, the application of federal aid actually reduced the variance which can be interpreted as promoting equalization of expenditures. However, the difference between the two variances is statistically insignificant when subjected to an analysis of variance as described by Cornett and Beckner.⁹

Equalization Based on Quartile Comparisons of Equalized Property Value and Federal Aid

The third procedure for testing the equalization effect of federal aid is adopted from a study done by Ginsburg and Killalea.¹⁰ It is very similar to the second procedure presented earlier. School districts are divided into three groups based on equalized property value per ADA. Average figures are then calculated for each of the three groups for federal revenue per ADA and for equalized property value per ADA.

The first step in this procedure is to sort the refined file by index value per ADA from highest to lowest. As in the preceding technique, the data file is then divided into three groups of school districts: the top 25 percent in ADA based on index property wealth;

the bottom 25 percent in ADA based on index property wealth; and the middle 50 percent in ADA based on index property wealth.

The three groups will be treated separately to produce an average federal revenue per ADA and an average property value per ADA for each one. For example, using hypothetical figures, those Texas districts of highest property valuation per pupil containing 25 percent of the students may have an average federal revenue per ADA of \$100 and an average index property value per ADA of \$150,000. Those Texas districts of lowest property valuation per pupil containing 25 percent of the students may have average figures of \$150 and \$50,000, respectively. Meanwhile, those Texas districts in the middle containing 50 percent of the students may have average figures of \$90 and \$75,000.

These hypothetical figures can be descriptively analyzed to note that the districts with the lowest property values receive the most federal aid. However, those districts with the highest property values do not receive the least federal aid. The districts in the middle receive the least.

When average property values are added to the analysis, it can be seen that the wealthiest districts have property values twice as high as the middle districts and still receive more federal money. Such an outcome would certainly suggest that federal funds are less equalizing. There are no standardized methods for statistically testing the significance of the equalization effect of federal aid related directly to property wealth. Nevertheless, a proportional system of comparison provides some insight. For example, if the

wealthy district figures of \$100 per ADA in federal revenue and \$150,000 per ADA in property value are used as a base, the middle districts with a property value of \$75,000 or half as much, should receive twice as much or \$200 in federal aid. Since they receive an average of only \$90 per ADA instead of \$200, it could be concluded that federal aid is less equalizing.

Equalization Based on Comparison of Standard Deviations With and Without Federal Aid

The final procedure for testing the equalization effect of federal aid is designed to test differences in standard deviation. Since the value of the standard deviation depends on all the scores in a distribution, it is the most stable measure of variability. In this study, it will be computed by factoring in every school district and every student in Texas. Hence, it will truly be representative of the variability in revenue per ADA throughout the state. The standard deviation will be computed twice: for total revenue per ADA and for nonfederal revenue per ADA. The resulting two figures will then be compared statistically at the .01 level of probability to determine if there is a significant difference between them.

The first step in this procedure is to compute a statewide average in total revenue per pupil. This is done by adding all of the total revenue figures and then dividing the sum by the total statewide ADA. Next, each district's total revenue per pupil is computed and subtracted from the statewide average to yield a deviation score. Any negative figures will be considered as positive since only distance, not direction, from the state average is important. This deviation

score will be multiplied by the district's ADA. Finally, the weighted deviations will be summed and then divided by the statewide ADA to produce a standard or average deviation in total revenue per pupil.

For example, if the total statewide revenue is \$3 billion and the total ADA is 2 million, the state average in total revenue per pupil is \$1,500. If a particular school district has a total revenue per pupil of \$1,700 and an ADA of 1,000; its deviation from the state average would be \$200 and its weighted deviation would be \$200,000. Finally, if the sum of all the weighted deviations is \$300 million, the average or standard deviation in total revenue per pupil will be \$150 (300 million / 2 million ADA).

This entire process is then repeated using the district deviation in nonfederal revenue per ADA in place of total revenue. The result will be a standard or average deviation in nonfederal revenue per pupil.

After the two standard deviations have been computed, they will be compared with one another to determine if there is a statistically significant difference between them. This will be done by employing a t test using the correlated data technique described by Cornett and Beckner.¹¹ The computed t value will be checked for significance at the .01 level of probability and for degrees of freedom equal to the statewide ADA minus one.

If the t value is significant, the null hypothesis will be rejected. In such a case, a larger standard deviation for total revenue than for nonfederal revenue indicates that federal aid in

Texas is less equalizing. Conversely, a larger standard deviation for nonfederal revenue than for total revenue indicates that federal aid in Texas is more equalizing. If the t value is not significant, the null hypothesis will be accepted and it will be concluded that federal aid in Texas is neither more nor less equalizing. It would then be described as having a neutral effect.

Summary of Chapter

Chapter V has described the design of the study to be conducted. It was first explained that a computerized data file will be produced by coding, keypunching, and storing school finance information provided by the Texas Education Agency for the 1978-79 academic year. This will serve as a working file with which to provide the data analysis necessary to test the null hypotheses.

Next, the methodology for testing the first null hypothesis was presented. The relationship of federal aid to district property value is to be examined by computing a correlation coefficient from which statistical significance can be determined.

Four different methodologies were then explained for testing the second null hypothesis which deals with the equalization effects of federal aid. The first technique is based on a comparison of disparity index values produced by establishing the ratio of revenues per pupil at the 95th percentile of ADA to revenues per pupil at the 5th percentile of ADA. The second is based on a comparison of total revenue per ADA with nonfederal revenue per ADA for three groups of school districts: those with the greatest property wealth and 25

percent of the statewide ADA; those with the least property wealth and 25 percent of the statewide ADA; and those in the middle of the property wealth distribution with 50 percent of the statewide ADA. The third method uses the same three groups of school districts as the second to compare the amount of federal aid per ADA with the amount of property value per ADA. The final process compares the statewide standard deviation for per pupil revenue with federal aid and without federal aid.

It is conceivable that the four different procedures used to test the second null hypothesis may not all produce the same result. One or more may accept the null hypothesis, while one or more may reject it. On the other hand, all four may be unanimous in their acceptance or rejection. Such an occurrence would offer strong support to whatever conclusions are drawn.

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7. Ibid.
8. Variance is defined by Cornett and Beckner, p. 25, as the mean of the squared deviations from the mean. It may be calculated by using the following raw score formula:

$$\text{variance} = \frac{\sum X^2 - \frac{(\sum X)^2}{n}}{n - 1}$$
9. Cornett and Beckner, Introductory Statistics, p. 138.
10. Alan L. Ginsburg and Neil J. Killalea, "Patterns of Federal Aid to School Districts," Journal of Education Finance 2 (Winter 1977): 380-95.
11. Cornett and Beckner, Introductory Statistics, p. 137.

CHAPTER VI

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this chapter is to present, discuss, and analyze the data produced by the procedures explained in the previous chapter. Thus, it is logical that the following sections and subheadings correspond to those in the procedures portion of Chapter V. Additionally, a section is presented which describes the complete range of federal aid in Texas.

The data which follow were produced exactly as described in the step-by-step procedures with one exception. In preparing the coding sheets from TEA figures, it was discovered that the data for the Excelsior Consolidated School District were incomplete. It was therefore decided to eliminate Excelsior from this study.¹ This dropped the number of involved school districts to 1071. Hence, the entire population of Texas school districts minus one was used in this study.

The Range of Federal Aid in Texas

This study considered federal aid in three categories: total federal dollars, percentage of federal revenue, and federal dollars per ADA. These three categories are displayed in Tables 2, 3, and 4 respectively. On the other hand, there is only one category involving the least federal aid since any school district with no federal aid also has no percentage of federal revenue and no federal dollars per ADA. Texas school districts receiving no federal aid are displayed in Table 5.

Table 2 ranks the ten school districts in Texas that received the most federal dollars for the 1978-79 school year. All are in major metropolitan areas except Killeen, which is located between Waco and Austin in Central Texas. Ysleta is part of the city of El Paso, while Edgewood encompasses the west side of San Antonio. All of the districts in Table 2 have enrollments of well over 30,000 except Killeen and Edgewood. These two districts had the highest percentage of federal aid in Table 2 for different reasons. Killeen draws many of its students from the Fort Hood Army Base and thus qualifies for substantial amounts of impact aid. Edgewood includes the Mexican barrio of San Antonio and thus qualifies for substantial amounts of Title I (low income) and Title VII (bilingual) aid. It should also be noted that Killeen and Edgewood received the most federal revenue per ADA and had the lowest property values per ADA among the ten districts displayed.

Only Houston and Austin received less federal revenue per ADA than the statewide average. Dallas, Houston, Fort Worth, and Austin all had property values per ADA greater than the statewide average. Of these four districts, Fort Worth received the most federal aid per student and had the highest percentage of federal revenue. Both Fort Worth and Austin operated from almost the same amount of property base per student; yet, Fort Worth received more than twice as much federal money per student as Austin. This difference serves to emphasize the point that the amount of federal aid is unrelated to the local tax base.

Of the ten districts displayed in Table 2, only Dallas, Houston, and Austin had nonfederal and total revenues higher than the state

TABLE 2

RANKING OF TEXAS SCHOOL DISTRICTS RECEIVING THE MOST
FEDERAL AID BY TOTAL DOLLARS FOR 1978-79

School District	Federal Revenue	ADA	Federal Revenue Per ADA	Nonfederal Revenue Per ADA	Total Revenue Per ADA	Federal Revenue As Percentage of Total Revenue	Index Property Value Per ADA
Dallas	21,092,285	117,080	180	1,896	2,076	8.67	107,656
Houston	18,911,516	175,449	107	1,770	1,878	5.74	103,042
San Antonio	14,199,413	56,236	252	1,474	1,726	14.62	43,169
Fort Worth	13,284,024	59,150	224	1,505	1,730	12.90	77,867
El Paso	10,624,566	53,731	197	1,354	1,552	12.74	55,420
Corpus Christi	7,224,111	34,809	207	1,546	1,754	11.83	56,389
Killeen	6,537,991	15,340	426	1,120	1,546	27.56	20,351
Ysleta	6,069,146	39,725	152	1,137	1,290	11.84	25,223
Austin	5,797,923	52,451	110	1,933	2,043	5.41	77,459
Edgewood	5,553,995	16,762	331	1,124	1,455	22.77	12,769
State Average	---	2,406	130	1,647	1,777	7.33	75,421

average. The comparison between Austin and Fort Worth is again very interesting. Although both districts had approximately the same tax base from which to generate revenue, Austin had nonfederal revenues that were \$428 higher per ADA than Fort Worth. This suggests that Fort Worth's tax effort was less than Austin's. This was exactly the case. Fort Worth's total tax rate for 1978-79 was \$1.67 with an assessment ratio of 49 percent. Meanwhile, Austin's total tax rate was \$1.50 with an assessment ratio of 90 percent. These figures equate to a full index value tax rate of \$.82 for Fort Worth and \$1.35 for Austin. Thus, Fort Worth, with the same property wealth per student as Austin, and with a significantly lower local tax effort, received more than twice as much federal aid per ADA.

Table 3 ranks the ten school districts in Texas that received the highest percentage of total revenue from the federal government. All are in South Texas except Palacios which is near Houston and Bynum which is near Dallas. Since all of the school districts in South Texas have a high percentage of Mexican Americans, it is not surprising that eight of them are among the ten school districts in Texas with the highest percentage of total revenue from the federal government. Mexican American students are often eligible for low income Title I money and bilingual Title VII money.

Half of the districts in Table 3 had index property values per ADA above the state average. This again indicates that federal revenue is unrelated to the local tax base. Only two of the districts in Table 3 had more nonfederal revenue per ADA than the state average. For those two districts, Bynum and Palacios, the high amount of

TABLE 3

**RANKING OF TEXAS SCHOOL DISTRICTS RECEIVING THE MOST
FEDERAL AID BY PERCENTAGE OF TOTAL REVENUE FOR 1978-79**

School District	Federal Revenue As Percentage of Total Revenue	ADA	Federal Revenue	Federal Revenue Per ADA	Nonfederal Revenue Per ADA	Total Revenue Per ADA	Index Property Value Per ADA
La Villa	52.97	469	584,951	1,170	1,039	2,209	88,885
Bynum	43.01	106	177,394	1,673	2,217	3,891	110,671
Lasara	41.99	224	192,415	859	1,186	2,045	102,863
Roma	40.66	2,702	1,848,925	684	998	1,683	16,136
Crystal City	39.95	2,289	2,153,249	940	1,414	2,354	35,338
Santa Maria	38.39	277	162,992	588	944	1,532	43,273
La Feria	38.32	1,716	1,045,289	609	980	1,589	23,522
Lyford	37.49	1,381	968,800	701	1,169	1,871	85,503
Palacios	37.17	1,271	2,037,668	1,603	2,709	4,312	132,052
West Osó	36.96	1,921	1,554,121	809	1,379	2,189	42,670
State Average	7.33	2,406	---	130	1,647	1,777	75,421

nonfederal revenue per ADA by itself was more than the state average for total revenue per ADA. Yet, both Bynum and Palacios still received a federal subsidy of more than \$1,600 per student. In these two specific instances, it is clear that federal revenue did not have an equalizing effect. For the eight other districts in Table 3, however, the addition of federal revenue raised five of them above the state average for total revenue per ADA.

Table 4 ranks the ten school districts in Texas that received the most federal revenue per ADA for the 1978-79 school year. Six of the districts also appeared in Table 3. The most surprising statistic found in Table 4 is the fact that eight of the ten districts possessed index property values per ADA above the state average. Only Crystal City and West Oso had property values per ADA below the state average. Once again, specific examples demonstrate that federal revenue is unrelated to the local tax base. An above average local tax base, however, did not always translate into above average nonfederal revenue per ADA, as only half of the districts displayed exceeded the state average for that category. However, the application of federal revenue resulted in all ten districts having a total revenue per ADA well above the state average.

Table 5 lists all of the school districts in Texas that received no federal revenue during the 1978-79 school year. The list is dominated by small schools, as only five of the sixty-eight districts had enrollments greater than 1,000. Only two were in urban areas. Port Neches is part of the Beaumont-Port Arthur industrial area while Highland Park is part of Dallas. Only nine of the districts in Table

TABLE 4

RANKING OF TEXAS SCHOOL DISTRICTS RECEIVING THE MOST
FEDERAL AID BY DOLLARS PER ADA FOR 1978-79

School District	Federal Revenue Per ADA	ADA	Federal Revenue	Federal Revenue As Percentage of Total Revenue	Nonfederal Revenue Per ADA	Total Revenue Per ADA	Index Property Value Per ADA
Bynum	1,673	106	177,394	43.01	2,217	3,891	110,671
Palacios	1,603	1,271	2,037,668	37.17	2,709	4,312	132,052
La Villa	1,170	469	584,951	52.97	1,039	2,209	88,885
Waelder	948	226	214,289	33.34	1,895	2,843	76,431
Crystal City	940	2,289	2,153,249	39.95	1,414	2,354	35,338
Windom	933	81	75,585	34.54	1,768	2,701	82,197
Lasara	859	224	192,415	41.99	1,186	2,045	102,863
West Oso	809	1,921	1,554,121	36.96	1,379	2,189	42,670
Pawnee	769	182	139,960	25.60	2,235	3,004	166,850
Mumford	760	81	61,640	34.01	1,476	2,237	118,022
State Average	130	2,406	---	7.33	1,647	1,777	75,421

TABLE 5

**RANKING BY ADA OF TEXAS SCHOOL DISTRICTS
RECEIVING NO FEDERAL AID FOR 1978-79**

School District	ADA	Total Revenue Per ADA	Index Property Value Per ADA
Port Neches	5,254	2,106	90,430
Highland Park	4,274	2,040	164,904
Denver City	1,300	3,766	1,072,269
Crane	1,031	2,923	760,124
Refugio	1,019	2,972	512,660
Reagan County	838	3,032	200,321
Spring Hill	786	2,523	199,194
Coppell	570	2,001	114,308
Greenwood	431	2,678	126,306
Iraan-Sheffield	407	3,911	1,530,213
Phillips	388	3,167	305,021
Wink-Loving	338	4,581	989,889
Riesel	335	1,161	93,574
Austwell-Trivoli	277	3,760	512,409
Savoy	262	1,592	171,590
High Island	243	2,769	137,711
Gunter	227	1,342	49,401
Fort Davis	221	1,954	84,860
Gary	206	1,698	68,150
Lago Visti	204	5,783	563,460
Buena Vista	192	3,824	443,157
Sabine Pass	190	4,652	554,380
Lefors	187	2,748	353,387
Harts Bluff	178	1,069	28,038
Venus	177	1,334	66,301
Chapel Hill	141	1,105	50,851
McMullen	138	4,841	789,969
Keene	129	1,215	149,208

TABLE 5--Continued

School District	ADA	Total Revenue Per ADA	Index Property Value Per ADA
Ector	117	1,348	61,381
Santa Gertrudis	110	3,970	2,551,529
Liberty Chapel	109	1,245	63,530
Hallsburg	104	2,515	420,804
Hobbs	104	4,512	1,611,621
Westminster	99	1,553	82,471
La Gloria	95	1,828	992,008
Meyersville	92	2,191	185,175
Winfield	90	2,430	153,617
Novice	85	3,288	152,300
Lillian	83	1,270	95,286
Lohn	74	2,129	127,914
Pringle-Morse	70	5,204	1,231,079
Matagorda	62	4,705	605,168
Hunt	61	3,334	317,654
Palo Pinto	55	3,139	219,585
Dew	53	1,947	141,444
Sweet Home	53	1,640	127,135
Kenedy County	47	7,215	2,623,794
Ezzell	46	3,321	1,087,465
Coupland	43	2,432	183,110
Plemons	42	5,792	590,958
Olfen	41	1,602	50,610
South Plains	41	2,299	416,597
Waka	41	5,282	745,925
Sivells Bend	40	2,242	634,714
Laureles	39	4,090	4,002,682
Walcott	36	5,422	1,234,946
Terlingua	35	1,625	50,763
Spring Creek	32	6,878	948,843

TABLE 5--Continued

School District	ADA	Total Revenue Per ADA	Index Property Value Per ADA
Texhoma	31	12,178	1,374,806
Vysehrad	26	2,540	704,510
Grandview-Hopkins	25	8,626	2,038,555
Three Way	21	2,007	249,715
Dougherty	18	4,803	933,303
Alanreed	16	8,165	789,424
Allamoore	11	1,929	706,976
Divide	7	3,535	1,518,150
Juno	5	4,759	2,283,848
Carta Valley	3	3,519	2,016,008

5 had index property values per ADA below the state average. This tends to suggest that property rich districts with small enrollments are the ones most likely to do without federal aid. In the category of total revenue per ADA, only fifteen of the districts in Table 5 were below the state average. However, of these fifteen, which include the nine districts with index values per ADA below the state average, there are some obvious examples of need. Hart's Bluff and Chapel Hill, with total revenues per ADA of \$1,069 and \$1,105 and index property values per ADA of \$28,038 and \$50,851 respectively, could both have benefitted from the receipt of federal revenue.

Relationship Between Federal Aid Per ADA and Tax Base Per ADA

The first null hypothesis presented in this study assumed that there was no relationship between federal aid per ADA and tax base per

ADA in local school districts in Texas. To test this hypothesis, index value per ADA was correlated with federal revenue per ADA using the Pearson Product Moment formula. Index value per ADA and federal revenue per ADA were calculated for every school district except Excesior. These two items of data for every school district in Texas were used in the correlation formula the number of times equal to the district's ADA. This weighting process insured that the larger districts were not correlated equally with the smaller ones. The end result was a number of pairs equal to 2,577,216.

The Pearson Product Moment raw score correlation formula described by Cornett and Beckner is displayed below along with the actual values used in the computation.²

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

N = the number of pairs = 2,577,216
 ΣXY = the sum of cross products = 21,660,188,010,000
 ΣX = the sum of index value per ADA = 194,376,804,600
 ΣY = the sum of federal revenue per ADA = 336,058,704
 ΣX^2 = 32,052,448,550,000,000
 ΣY^2 = 80,818,873,320

When these figures are inserted into the formula, they produce a correlation coefficient of -.1453. The negative value implies that there is an inverse relationship between federal aid per ADA and index value per ADA. In other words, as index value per ADA increases, federal aid per ADA decreases and vice versa.

The next step is to determine if this negative relationship is statistically significant. To answer this question, the correlation coefficient is compared with a table value at the .01 level of significance

while using 2,577,214 degrees of freedom (the statewide ADA minus two). Most statistical tables do not include degrees of freedom that reach into the millions. For this particular study, however, such figures are unnecessary because the null hypothesis can be tested by examining the significant values for far fewer degrees of freedom. For 1,000 degrees of freedom at the .01 level of significance, a correlation coefficient must exceed a value of .081 in order to reject the null hypothesis.³ Since the value needed for statistical significance decreases as the degrees of freedom increase, the value for 2,577,214 degrees of freedom would be less than that for 1,000 degrees of freedom. Furthermore, since the computed correlation coefficient of $-.1453$ is greater than the table value of .081 for 1,000 degrees of freedom, it must be concluded that there was a significant negative relationship between federal revenue per ADA and index property value per ADA in Texas for the 1978-79 school year. The null hypothesis is therefore rejected.

Table 6 and 7 further examine index property value per ADA by displaying those Texas school districts with the highest and lowest values respectively. The ten property rich districts in Table 6 all had index values of more than \$1.5 million per student or more than twenty times the state average. As might be expected, all had non-federal and total revenues per ADA that were at least twice the state average. Only two of the ten districts received any federal revenue at all, but in both instances the amount per student was greater than the state average. The McFaddin Independent School District had a percentage of federal aid that exceeded the state average even though

TABLE 6

TEXAS SCHOOL DISTRICTS WITH THE HIGHEST INDEX
PROPERTY VALUE PER ADA FOR 1978-79

School District	Index Property Value Per ADA	Federal Revenue Per ADA	Nonfederal Revenue Per ADA	Total Revenue Per ADA	Federal Revenue As Percentage of Total Revenue	ADA
Laureles	4,002,682	0	4,090	4,090	0.00	39
Kennedy County	2,623,794	0	7,215	7,215	0.00	47
Santa Gertrudis	2,551,529	0	3,970	3,970	0.00	110
Juno	2,283,848	0	4,759	4,759	0.00	5
Grandview-Hopkins	2,038,555	0	8,626	8,626	0.00	25
Carta Valley	2,016,008	0	3,519	3,519	0.00	3
Jayton-Girard	1,687,374	149	5,279	5,426	2.72	215
McFaddin	1,676,892	687	5,306	5,994	11.47	15
Hobbs	1,611,621	0	4,512	4,512	0.00	104
Iraan-Sheffield	1,530,213	0	3,911	3,911	0.00	407
State Average	75,421	130	1,647	1,777	7.33	2,406

its nonfederal revenue per pupil was three and a half times the state average. This apparent waste of federal money is mitigated by the fact that McFaddin's enrollment was fifteen students. In fact, the total ADA for all ten of the school districts displayed in Table 6 was only 970, thus reinforcing the suggestion drawn from Table 5 that property rich districts with small enrollments are the ones most likely to do without federal aid.

On the other extreme are the ten most property poor districts in Texas displayed in Table 7. All had index values per student that were far below the state average for 1978-79. As might be expected, all had nonfederal revenues per ADA that were well below the state average. All of them also had federal revenues per ADA and percentages of federal revenue that were well above the state average. In fact, in two of the districts, Presidio and Boles Homes, the application of federal revenue raised the district's total revenue per ADA above the state average. The figures suggest that federal revenue is serving as an equalizer for the ten most property poor districts in the state. This suggestion is further supported by the fact that the total ADA for all ten of the school districts displayed in Table 7 was 40,765, more than forty times the total ADA of the ten property rich districts displayed in Table 6. Hence, the increased level of federal support in the poorest school districts is affecting significantly more students than seemingly wasteful federal support which goes to two of the richest school districts described in the preceding paragraph.

TABLE 7

TEXAS SCHOOL DISTRICTS WITH THE LOWEST INDEX
PROPERTY VALUE PER ADA FOR 1978-79

School District	Index Property Value Per ADA	Federal Revenue Per ADA	Nonfederal Revenue Per ADA	Total Revenue Per ADA	Federal Revenue As Percentage of Total Revenue	ADA
Edgewood	12,769	331	1,124	1,455	22.77	16,762
Edcouch-Elsa	12,885	590	1,114	1,704	34.63	2,929
San Elizario	15,249	261	1,428	1,689	15.45	473
Presidio	15,785	693	1,241	1,935	35.85	658
Roma	16,136	684	998	1,683	40.66	2,702
Mercedes	16,247	483	1,199	1,682	28.72	3,825
Mission	16,671	448	1,220	1,668	26.86	6,322
Boles Home	17,248	249	1,615	1,865	13.37	130
San Benito	18,786	301	1,112	1,413	21.30	6,088
Santa Rosa	19,744	407	1,134	1,542	26.43	876
State Average	75,421	130	1,647	1,777	7.33	2,406

Equalization Based on Disparity Index Comparisons

The second null hypothesis assumed that federal aid to local school districts in Texas was neither more nor less equalizing in terms of per pupil revenues. The first of four procedures for testing this hypothesis is based on a comparison of disparity indexes. The ratio of revenues at the 95th percentile of students to revenues at the 5th percentile of students was used as an index of revenue disparity at the extremes. Two disparity indexes were computed for this study: one for total revenue per student and one for nonfederal revenue per student.

The first index was produced by sorting and then listing by total revenue per ADA all of the school districts in Texas. The 95th and 5th percentiles of students were then located in the sorted list in order to compute the index value. With a statewide ADA of 2,577,216, the 95th percentile falls 128,861 students from the top of the sorted listing while the 5th percentile falls 128,861 students from the bottom of the listing. Based on this approach, the 95th percentile falls within Perryton I. S. D. which had total revenues per ADA of \$2,422.41 for the 1978-79 school year. The top 5 percent of the students based on total revenue per ADA attended 214 different school districts. At the other extreme, the 5th percentile falls within the Laredo I. S. D. which had total revenues per ADA of \$1,330.10 for the 1978-79 school year. The bottom 5 percent of the students based on total revenue per ADA attended ninety-one different school districts. It is worth noting that more than twice as many school districts were attended by the top 5 percent of the statewide enrollment based on total revenue per ADA

than were attended by the bottom 5 percent. Using the total revenues per pupil in Perryton and Laredo, a disparity index is computed of 1.82 (2422.41/1,330.10).

The second index was produced by sorting and then listing by nonfederal revenue per ADA all of the school districts in Texas. The 95th and 5th percentiles of statewide ADA were then located in the listing just as was done earlier for total revenue. This time the 95th percentile falls within Calhoun County I. S. D. which had non-federal revenues per ADA of \$2,273.86 for the 1978-79 school year. The top 5 percent of the students based on nonfederal revenue per ADA attended 213 different school districts. At the other extreme, the 5th percentile falls within Ysleta I. S. D. which had nonfederal revenues per ADA of \$1,137.62 for the 1978-79 school year. The bottom 5 percent of the students based on nonfederal revenue per ADA attended only forty-two different school districts. Thus, more than five times as many school districts were attended by the top 5 percent of the statewide enrollment based on nonfederal revenue per ADA than were attended by the bottom 5 percent. Using the nonfederal revenues per pupil in Calhoun County and Ysleta, a disparity index is computed of 1.99 (2,273.86/1,137.62).

In summary, the 95th to 5th percentile disparity index for total revenue per ADA was 1.82 for the 1978-79 school year. Meanwhile, the same index for nonfederal revenue was 1.99. Thus, it can be concluded that the application of federal revenue had an equalizing effect by reducing the disparity index from 1.99 to 1.82. Although statistical significance calculations are not appropriate, the figures

tend to reject the null hypothesis and support the contention that federal funds are indeed equalizing.

Equalization Based on Quartile Comparisons of Revenue
Per Pupil With and Without Federal Aid

The next of the four procedures for testing the second null hypothesis is based on comparisons of total revenue per ADA and non-federal revenue per ADA among property rich school districts, property poor school districts, and school districts from neither extreme. In order to establish three separate groups of school districts, all of the districts in Texas were sorted from highest to lowest by index value per ADA. The sorted districts were then broken into three groups: the wealthiest districts with 25 percent of the state ADA, the poorest districts with 25 percent of the state ADA, and the remaining districts (neither extremely wealthy nor poor) with 50 percent of the state ADA. Average figures were then produced for each of these three groups and are displayed in Table 8 along with average statewide figures.

Analysis of Table 8 reveals that the wealthiest districts with 25 percent of the state ADA received on the average more federal revenue per ADA than those districts in the middle with 50 percent of the ADA. This is clearly a case of the rich getting richer. It should also be noted that both the middle and high groups had more nonfederal revenue per ADA than the low group had in total revenue per ADA. Yet, they still received federal money to raise the disparity even more. On a percentage basis, it should be noted that the percentage of federal revenue was lowest for the wealthiest districts, highest for the poorest

TABLE 8

FINANCIAL FIGURES FOR TEXAS SCHOOL DISTRICTS
GROUPED BY INDEX PROPERTY VALUE PER ADA FOR
1978-1979

	Districts with Highest Index Property Value Per ADA & 25% of Statewide Enrollment	Districts Between the Highest & Lowest in Index Property Value Per ADA & 50% of Statewide Enrollment	Districts with Lowest Index Property Value Per ADA & 25% of Statewide Enrollment	Overall State Figures
Average Property Value Per ADA	143,688.56	63,379.52	31,240.42	75,421.88
Total Number of Districts	424.70	463.70	182.60	1,071.00
Total ADA	644,304.00	1,288,608.00	644,304.00	2,577,216.00
Average Federal Revenue Per ADA	117.17	113.48	177.45	130.39
Average Nonfederal Revenue Per ADA	2,016.66	1,601.64	1,367.97	1,647.00
Average Total Revenue Per ADA	2,133.84	1,715.14	1,545.93	1,777.39
Federal Revenue As Percentage of Total Revenue	5.49	6.62	11.48	7.33

districts, and in between for the districts with neither extreme wealth nor poverty. This would tend to suggest a sense of equalization that is misleading. The federal percentage of the wealthiest districts is the lowest of all three groups because the property rich districts generate such a high amount of nonfederal revenue. Thus, the federal percentage is reduced while the average federal dollars per ADA are greater than those received by the middle group of districts.

Statistically, the figures produced by the three groups of school districts can be subjected to an analysis of variance. Average revenues per ADA without federal aid can be compared for variance with average revenues with federal aid. To make this computation, the middle group figures are taken twice because they represent 50 percent of the ADA while the high and low groups represent only 25 percent each. Thus, the four figures of \$2,016, \$1,601, \$1,601, and \$1,367 produce a variance of 72,930 for average revenue per ADA without federal aid. Meanwhile, the four figures of \$2,133, \$1,715, \$1,715, and \$1,545 produce a variance of 62,749 for average revenue per ADA with federal aid.⁴ Therefore, it is clear that the application of federal aid actually reduced the variance which can be interpreted as promoting equalization of revenues. However, the difference between the two variances is statistically insignificant when subjected to an analysis of variance as described by Cornett and Beckner.⁵ The resultant F value is .501 which is statistically insignificant because it is less than the required table value of 234.⁶

In carrying out the analysis of variance described above, it must be remembered that the input data were averages for nonfederal or total revenue and not true raw scores. Thus, a great deal of variance was lost in producing average figures as an intermediate step before carrying out the actual variance calculation. The true variances for nonfederal and total revenue per ADA are generated and analyzed later in this chapter when the difference in standard deviations is presented. Nevertheless, it can be descriptively and clearly seen that the application of federal revenue had a shrinking or equalizing effect on variance.

Tables 9, 10, 11, and 12 examine revenue per ADA by high and low extremes rather than by average figures for the three categories of property wealth discussed earlier in this chapter. Table 9 displays the ten Texas school districts with the highest nonfederal revenue per ADA for the 1978-79 school year. Table 10 displays the ten Texas school districts with the highest total revenue per ADA for the same year. A quick comparison of the two tables reveals exactly the same ten school districts in each. Thus, the application of federal revenue had no effect on the composition or order of the ten school districts with the highest revenues per ADA. An examination of the ADA figures reveals that all of the districts had small enrollments. All of them also had index property values per ADA which were several times greater than the state average. This, of course, is no surprise. It is only logical that property rich districts would tend to generate substantial amounts of revenue per pupil. In the case of both nonfederal and total revenue per ADA for the districts in Tables 9 and 10, the amount of

TABLE 9

TEXAS SCHOOL DISTRICTS WITH THE HIGHEST NONFEDERAL REVENUE (STATE PLUS LOCAL) PER ADA FOR 1978-79

School District	Nonfederal Revenue Per ADA	Federal Revenue Per ADA	Total Revenue Per ADA	Federal Revenue As Percentage of Total Revenue	ADA	Index Property Value Per ADA
Texhoma	12,178	0	12,178	0.00	31	1,374,806
Grandview-Hopkins	8,626	0	8,626	0.00	25	2,038,555
Sundown	8,282	89	8,372	1.07	394	1,391,590
Alanreed	8,165	0	8,165	0.00	16	789,424
Kelton	7,831	31	7,863	0.41	52	981,389
Guthrie	7,536	142	7,678	1.85	82	784,638
Kenedy County	7,215	0	7,215	0.00	47	2,623,794
Borden County	6,920	4	6,924	0.07	195	1,310,761
Spring Creek	6,878	0	6,878	0.00	32	948,843
Darrrouzett	6,310	115	6,426	1.80	104	368,715
State Average	1,647	130	1,777	7.33	2,406	75,421

TABLE 10

TEXAS SCHOOL DISTRICTS WITH THE HIGHEST TOTAL REVENUE
(FEDERAL PLUS STATE PLUS LOCAL) PER ADA FOR 1978-79

School District	Total Revenue Per ADA	Nonfederal Revenue Per ADA	Federal Revenue Per ADA	Federal Revenue As Percentage of Total Revenue	ADA	Index Property Value Per ADA
Texhoma	12,178	12,178	0	0.00	31	1,374,806
Grandview-Hopkins	8,626	8,626	0	0.00	25	2,038,555
Sundown	8,372	8,282	89	1.07	394	1,391,590
Alanreed	8,165	8,165	0	0.00	16	789,424
Kelton	7,863	7,831	31	0.41	52	981,389
Guthrie	7,678	7,536	142	1.85	82	784,638
Kenedy County	7,215	7,215	0	0.00	47	2,623,794
Borden County	6,924	6,920	4	0.07	195	1,310,761
Spring Creek	6,878	6,878	0	0.00	32	948,843
Darrouzett	6,426	6,310	115	1.80	104	368,715
State Average	1,777	1,647	130	7.33	2,406	75,421

TABLE 11

TEXAS SCHOOL DISTRICTS WITH THE LOWEST NONFEDERAL
REVENUE (STATE PLUS LOCAL) PER ADA FOR 1978-79

School District	Nonfederal Revenue Per ADA	Federal Revenue Per ADA	Total Revenue Per ADA	Federal Revenue As Percentage of Total Revenue	ADA	Index Property Value Per ADA
Santa Maria	944	588	1,532	38.39	277	43,273
La Feria	980	609	1,589	38.32	1,716	23,522
Valley View	989	23	1,012	2.30	225	41,902
Roma	998	684	1,683	40.66	2,702	16,136
Moody	1,022	97	1,120	8.69	513	53,457
Leary	1,025	234	1,259	18.59	142	21,889
La Villa	1,039	1,170	2,209	52.97	469	88,885
Stockdale	1,056	110	1,166	9.46	514	55,238
Harts Bluff	1,069	0	1,069	0.00	178	28,038
Whitney	1,070	11	1,081	1.04	736	74,060
State Average	1,647	130	1,777	7.33	2,406	75,421

TABLE 12

TEXAS SCHOOL DISTRICTS WITH THE LOWEST TOTAL REVENUE
(FEDERAL PLUS STATE PLUS LOCAL) PER ADA FOR 1978-79

School District	Total Revenue Per ADA	Nonfederal Revenue Per ADA	Federal Revenue Per ADA	Federal Revenue As Percentage of Total Revenue	ADA	Index Property Value Per ADA
Valley View	1,012	989	23	2.30	225	41,902
Harts Bluff	1,069	1,069	0	0.00	178	28,038
Whitney	1,081	1,070	11	1.04	736	74,060
Chapel Hill	1,105	1,105	0	0.00	141	50,851
Clyde	1,109	1,096	13	1.18	1,003	40,579
Tom Bean	1,112	1,104	7	0.71	455	42,829
Moody	1,120	1,022	97	8.69	513	53,457
Dawson	1,128	1,119	9	0.85	323	74,559
Hudson	1,130	1,090	39	3.51	1,357	28,866
Riesel	1,161	1,161	0	0.00	335	93,574
State Average	1,777	1,647	130	7.33	2,406	75,421

revenue per pupil was at least three times the state average. This combination of high revenue figures per ADA and small enrollments supports the earlier observation that the wealthiest school districts tend to have small enrollments. Despite the high property values and revenues per ADA for the districts in Tables 9 and 10, it should be noted that five of the ten still received federal aid during the 1978-79 school year. Guthrie's amount of federal revenue per ADA even exceeded the state average. With such small enrollments, the five districts that received federal aid had only a slight negative influence on the statewide equalization effect of federal revenue. Nevertheless, it is impossible to justify, for example, the \$89 per student that Sundown receives in federal aid. With a tax base of almost \$1.4 million per student and nonfederal revenues of over \$8,000 per student, it would seem that any amount of federal revenue allocated to Sundown could be better spent elsewhere.

Table 11 displays the ten Texas school districts with the lowest nonfederal revenue per ADA for the 1978-79 school year. Table 12 displays the ten Texas school districts with the lowest total revenue per ADA for the same year. A comparison of the two tables reveals that four school districts appear in both tables. For those four, the addition of federal revenue did little to improve their relative position among all the districts in terms of total revenue per ADA. However, for the six districts that appear in Table 11 but not Table 12, the addition of federal revenue had the minimum effect of removing them from the lowest ten in terms of total revenue per pupil. All of the districts in Table 12, and all but one in Table 11, had enrollments

below the state average. Nevertheless, the total enrollment of the ten districts with the lowest total revenue per ADA is more than five times the total enrollment of the ten districts with the highest total revenue per ADA (5,266 to 978). Only one district in Table 11, La Villa, and one in Table 12, Riesel, had index property values per ADA greater than the state average. This is no surprise. It is only logical that property poor districts would tend to generate meager amounts of revenue per pupil. In the case of the districts in Table 12, it can be easily seen that, in every instance, the amount of federal revenue per ADA was below the state average. Thus, the addition of federal aid was so small that low nonfederal revenues were only slightly supplemented. Three of the districts in Table 12 received no federal aid whatsoever. In the case of Riesel, the absence of federal revenue is somewhat understandable when its above average property value per ADA is considered. In the case of Harts Bluff, however, the absence of federal revenue seems unjust when its low property value per ADA is considered. Table 11, on the other hand, displays five districts that received federal revenue per ADA in excess of the state average. In the case of La Villa, the federal revenue was greater than the local and state revenue combined and resulted in total revenues per ADA well above the state average. In fact, the application of federal aid raised La Villa from 1,065 to 279 out of 1,071 districts in terms of revenue per student.

Equalization Based on Quartile Comparisons of Equalized Property Value and Federal Aid

The third procedure for testing the equalization effect of federal aid is based on comparisons of index property values per ADA and federal revenue per ADA. The data for making these comparisons are displayed in Table 8 which was explained and discussed earlier in this chapter. Briefly, the data were produced by dividing all of the school districts into three groups: the wealthiest districts with 25 percent of the state ADA, the poorest districts with 25 percent of the state ADA, and the remaining districts with 50 percent of the state ADA. Average figures were then computed for each of these three groups.

It should first be noted that the districts with the lowest property values per ADA received the most federal aid of the three groups displayed. Taken in isolation, this fact supports the theory that federal aid has an equalizing effect. However, those districts with the highest property values did not receive the least federal aid. The districts in the middle received the least. This fact, in turn, supports the theory that federal aid has a disequalizing effect. It can easily be seen that the wealthiest school districts have average property values per ADA that are twice as high as the middle districts. Yet they still receive on the average more federal money per ADA.

There are no standardized methods for statistically testing the significance of the equalization effect of federal aid related directly to property wealth. Nevertheless, a proportional system of

comparison provides some insight. For example, if the wealthy district figures of \$117 per ADA in federal revenue and \$143,688 per ADA in property value are used as a base, the middle districts with an average property value of \$63,379 per ADA or 44 percent as much, should receive \$266 per ADA or 2.27 times as much ($\$143,688/\$63,379 = 2.27$). Since they received an average of only \$113 per ADA instead of \$266, it could be concluded that federal aid was less equalizing. This proportional comparison can be applied to the poorest districts as well. Using the same base figures, the poorest districts with an average property value of \$31,240 per ADA or only 22 percent as much, should receive \$537 per ADA or 4.59 times as much ($\$143,688/\$31,240 = 4.59$). Since they received an average of only \$177 per ADA instead of \$537, it could be concluded again that federal aid was less equalizing. Thus, when federal aid is inversely related to the local tax base, it is seen as having a disequalizing effect and the second null hypothesis is rejected. With the property rich districts receiving on the average more federal revenue than the middle tax base districts, it would be difficult to conclude otherwise.

Equalization Based on Comparison of Standard Deviations With and Without Federal Aid

The final procedure for testing the equalization effect of federal aid is based on a difference in standard deviations. In this study, the standard deviations were computed by factoring in every school district and every student in Texas. Hence, it is truly representative of the variability in revenue per ADA throughout the state.

The first step in this procedure was to compute a statewide average in total revenue per pupil. This was done by adding every school district's total revenue figure and then dividing the sum by the statewide ADA. As shown in every table except 1 and 5, the statewide average in total revenue per pupil for 1978-79 amounted to \$1,777. Next, each district's average total revenue per pupil was computed and subtracted from 1,777 to yield a deviation score. Negative figures were considered as positive since only distance, not direction, from the state average is important. It should be remembered, as explained in the Assumptions section of Chapter I, that intradistrict variances in revenue per pupil are not considered. The deviation score was then multiplied by the district's ADA. Finally, the weighted deviations were summed and then divided by the statewide ADA to produce a standard or average deviation in total revenue per pupil.

The entire process was then repeated using the district deviation in nonfederal revenue per ADA in place of total revenue. The statewide average in nonfederal revenue per ADA was \$1,647. The end result was a standard or average deviation in nonfederal revenue per pupil.

The standard deviation in total revenue per pupil for 1978-79 amounted to \$262.58. Meanwhile, the standard deviation in nonfederal revenue per pupil was \$277.71. It can be easily seen that the addition of federal revenue lowered the standard deviation by \$15.13 and thus had an equalizing effect. This difference between the two standard deviations was also tested for statistical significance by employing

the correlated data t test described by Cornett and Beckner.⁷

The formula for this process requires the inclusion of a correlation coefficient which was computed by using the Pearson Product Moment raw score formula described by Cornett and Beckner.⁸ The formula is displayed below along with the actual values used in the computation.

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

N = the number of pairs = 2,577,216
 ΣXY = the sum of cross products = 386,837,809,400
 ΣX = the sum of the deviations from the average total revenue per ADA = 676,732,786
 ΣY = the sum of the deviations from the average non-federal revenue per ADA = 715,712,668
 ΣX^2 = 387,563,154,800
 ΣY^2 = 415,913,389,700

When these figures were inserted into the formula, they produced a correlation coefficient of +.931728 which was then used in the t test to determine the statistical significance of the difference between the two standard deviations. The t test formula is displayed below along with the actual values used in the computation.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2} - 2r \left(\frac{S_1}{\sqrt{n_1}} \right) \left(\frac{S_2}{\sqrt{n_2}} \right)}}$$

\bar{X}_1 = standard deviation in total revenue per ADA = 262.58

\bar{X}_2 = standard deviation in nonfederal revenue per ADA = 277.71

$n_1 = n_2$ = statewide ADA = 2,577,216

S_1^2 = variance of the deviations from \bar{X}_1 = 81,430.81

S_2^2 = variance of the deviations from \bar{X}_2 = 84,259.36

r = correlation between the deviations in total revenue per ADA and the deviations in nonfederal revenue per ADA = +0.931728

When these figures were inserted into the t formula, they produced a t value of -228.068. The t value needed to establish statistical significance at the .01 level of probability for 1,000 degrees of freedom is 2.58.⁹ Since the degrees of freedom used in computing the value of -228.068 were 2,577,215 (statewide ADA minus one) and since the significant t value for an infinite number of degrees of freedom is still 2.58, it is concluded that the t value of -228.068 is indeed statistically significant.¹⁰ Hence the null hypothesis is rejected. The negative t is then interpreted to conclude that federal aid in Texas is more, rather than less, equalizing in terms of revenue per pupil.

Summary of Chapter

Chapter VI has presented, discussed, and analyzed the data produced in studying the overall equalization effect of federal revenue on Texas public school finance during the 1978-79 school year. Numerous tables were displayed and examined in order to create an awareness of the range of federal aid and to facilitate the testing of the two null hypotheses.

The first null hypothesis assumed that there was no relationship between federal revenue per ADA and index property value per ADA. This hypothesis was rejected when a negative correlation coefficient was computed and found to be statistically significant. The negative coefficient was interpreted to mean that federal revenue had a slight

but significant tendency to increase as property value decreased and vice versa.

The second null hypothesis assumed that federal revenue was neither more nor less equalizing in terms of dollars per pupil. Four different methodologies were used to test this hypothesis. The first technique was based on a comparison of disparity index values produced by establishing the ratio of revenues per pupil at the 95th percentile of ADA to revenues per pupil at the 5th percentile of ADA. Such an index value was computed for total revenue and then again for nonfederal revenue. Results showed a smaller index value for total than for nonfederal, thus indicating that the addition of federal revenue had an equalizing effect by narrowing the gap between revenues per pupil at the 95th and 5th percentiles.

The second technique was based on a comparison of total and nonfederal revenues per ADA for three groups of school districts: those with the greatest property wealth and 25 percent of the statewide ADA; those with the least property wealth and 25 percent of the statewide ADA; and those in the middle of the property wealth distribution with 50 percent of the statewide ADA. Results showed that the poorest school districts had less in total revenue per ADA than the other two groups had in nonfederal revenue per ADA. Nevertheless, these other two groups still received federal aid to widen the gap in revenues per ADA. This result, although not statistically analyzed, indicated that federal revenues were disequalizing. On the other hand, when average total and nonfederal revenues per pupil were subjected to an analysis of variance, results showed that the application of

federal aid had a shrinking or equalizing effect on variance. Hence, the second technique produced two different and seemingly contradictory conclusions.

The third method used the same three groups of school districts as the second to compare the amount of federal aid per ADA with the amount of property value per ADA. Results showed that the poorest school districts received the most federal aid per ADA, but that the wealthiest districts received more than those in the middle. When the amount of federal revenue was related on a proportional basis to the average property value, it was found that the increase in federal revenue lagged far behind the decrease in property value. Based on this comparison, it was concluded that federal revenue was disequalizing.

The final process for testing the second null hypothesis compared the statewide standard deviation for per pupil revenue with federal aid and without federal aid. The t test used to make this comparison produced a negative value that proved to be statistically significant. This was interpreted to mean that federal revenue was more, rather than less, equalizing.

Taken together, the four methods used to test the second null hypothesis yielded mixed results. All rejected the null hypothesis. The first produced a smaller disparity index with rather than without federal aid, thus indicating an equalizing effect. The second produced conflicting results by showing that federal aid had a shrinking or equalizing effect on variance even though it was added to state and local revenues of the property rich districts which were by

themselves greater than the total revenues of the poorest school districts. The third showed that federal aid was disequalizing because it flowed in greater amounts per pupil to the property rich districts than to the middle tax base districts even though the property poor districts received the most of all. Finally, the fourth method produced a smaller standard deviation in per pupil revenue with rather than without federal aid, thus indicating an equalizing effect. Hence, the overall conclusion was drawn that federal aid had an equalizing effect when the state was statistically analyzed as a whole, although many instances of inequality are observable when individual or small groups of districts are studied separately. This suggests that federal aid can and should be more of an equalizing factor than it is.

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3. Herbert Arkin and Raymond R. Colton, Tables for Statisticians (New York, N.Y.: Barnes and Noble, Inc., 1969): 155.

4. Variance is defined by Cornett and Beckner, p. 25, as the mean of the squared deviations from the mean. It may be calculated by using the following raw score formula:

$$\text{variance} = \frac{\sum X^2 - \frac{(\sum X)^2}{n}}{n - 1}$$

5. Cornett and Beckner, Introductory Statistics, p. 138.

6. Ibid., p. 269.

7. Ibid., p. 137.

8. Ibid., p. 91.

9. Arkin and Colton, Tables, p. 121.

10. Ibid.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary and Restatement of Problem

This study has measured and evaluated the impact of federal aid on public elementary and secondary education in Texas. Two null hypotheses formed the core of this study. The first assumed that there was no relationship between federal aid and local tax base. The second assumed that federal aid was neither equalizing nor dis-equalizing in terms of per pupil revenues.

Chapter I introduced the study by presenting background information which emphasized the fact that federal funds are not coordinated with the distribution of state and local revenues. The purpose of the study was therefore established to examine the flow of federal funds into Texas, with the intent of determining the extent of their equalizing effect. Assumptions, limitations, and delimitations were outlined to clarify and specify certain considerations. Definitions and abbreviations were presented to promote simplification and consistency.

Chapter II presented the history of federal aid in three distinct segments: the Early Period from 1776 to the Civil War, the Middle Period from the Civil War to World War II, and the Contemporary Period from World War II to the present. The amount of federal aid over the years and the reasons for it were discussed along with this history. Chapter II also considered the politics of federal aid

by examining different political factors which often have a greater impact on the provision of federal revenue than the actual need for assistance.

Chapter III discussed and explained in detail the Texas Public School Finance Plan. It consisted of three parts, with each examining a different source of public school revenue: the federal, state, and local governments. It was noted that the Texas Public School Finance Plan represented an effort to coordinate state and local revenue in order to promote equalization of expenditures among more than 1,000 school districts.

Despite this effort, a tremendous disparity still existed in expenditures per pupil between the property rich and property poor districts. It was in this already unequalized setting that federal funds were applied.

Chapter IV reviewed the literature and research associated with federal aid to public education. The literature reflects a variety of opinions ranging from those who consider federal aid to be the solution to many educational problems to those who consider it to be the source of such problems. The research contains numerous studies on the equalization effect of federal aid. From a national, regional, and state perspective, federal aid has been related to property wealth, income level, and degree of urbanization.

Chapter V described the design of the study to be conducted. It was explained how the data were acquired, organized, coded, prepared, and manipulated in order to test the two null hypotheses.

The relationship between federal aid and property value was examined by computing a correlation coefficient. Four different methods were presented for studying the equalization effect of federal aid. One method computed and compared disparity indexes with and without federal revenue. Two other techniques divided all of the school districts into one of three property value groups and then examined average figures for federal revenue, nonfederal revenue, and total revenue for each group. The final approach computed and studied the standard deviation for per pupil revenues with and without federal aid.

Chapter VI presented, discussed, and analyzed the data produced for testing the two null hypotheses. The first null hypothesis was rejected because the correlation coefficient was found to be statistically significant, thus indicating a tendency for federal aid to increase as property value amounts decreased. The second null hypothesis was also rejected because two of the four techniques for testing it indicated that federal aid had an equalizing effect on revenues per pupil even though many available examples contradicted the general trend.

Description of Procedures

All of the procedures utilized in this study were based on the availability of computer assistance in the organization, manipulation, analysis, and interpretation of data. School finance data for every school district in Texas for the 1978-79 school year were

acquired from the Texas Education Agency. Total revenue, federal revenue, ADA, and index property value were then coded and key-punched for every district. The next step involved editing the key-punched data to ensure accuracy before transferring it from card to core storage where it was readily available for computer processing. Additionally, a computer program was designed, written, tested, and debugged in order to process the data.

In order to test the first null hypothesis, federal revenue per ADA was correlated with index property value per ADA using the Pearson Product Moment Correlation formula. The figures for each district were used in the actual calculations a number of times equal to its ADA. This weighting of the district by its ADA resulted in a number of pairs equal to the statewide ADA which was 2,577,216. After the correlation coefficient was computed, it was tested for statistical significance at the .01 level of probability.

Four procedures were used to test the second null hypothesis. First, all of the school districts were sorted and listed from high to low by total revenue per ADA and then again by nonfederal revenue per ADA. The districts containing the 95th and 5th percentiles in ADA in both listings were identified and a disparity index was computed. This index value was produced by dividing revenues per ADA at the 5th percentile into revenues per ADA at the 95th percentile. The result was two index values: one for total revenue and one for nonfederal revenue. These two indexes were then descriptively compared to evaluate the effect of federal revenue.

The second procedure for testing the second null hypothesis began with sorting all of the school districts from high to low by index property value per ADA. The districts were then divided into three separate groups: those with the highest property values per ADA and 25 percent of the statewide enrollment; those with the lowest property values per ADA and 25 percent of the statewide enrollment; and those remaining at neither extreme of the property value range containing 50 percent of the statewide enrollment. The next step was to compute average index property value, total revenue, federal revenue, and nonfederal revenue for each of the three groups of school districts. Average nonfederal and total revenues per ADA were then descriptively analyzed to assess the differences in revenues among the three groups. An analysis of variance was also conducted to study the difference in variance between the average group figures for total revenue per ADA and nonfederal revenue per ADA.

The third procedure continued using the three groups of school districts already described. Average federal revenue per ADA and average index property value per ADA were compared among the three groups. Using the average figures for the wealthiest group as a base standard, a proportional system was presented to project what federal revenues should have been if the relationship between federal revenue and property value were inverse. This projected amount of federal revenue was then compared with the actual amount in order to draw conclusions on equalization effect.

The final procedure for testing the second null hypothesis compared the statewide standard deviations for per pupil revenue with federal aid and without federal aid. Statewide averages for total revenue and nonfederal revenue per pupil were computed by dividing the statewide ADA into the state total for each category. Each district's deviation from the state average was then computed by subtraction and weighted by the district's ADA through multiplication. All of the weighted deviations were added and the sum divided by the statewide ADA. The results were an average or standard deviation for total revenues and an average or standard deviation for nonfederal revenues. The comparative sizes of the two standard deviations were noted since a larger figure for total revenue would suggest less equalization while a larger figure for nonfederal revenue would suggest more equalization as the effect of federal aid. Finally, the two average or standard deviations were subjected to a correlated data t test to determine the statistical significance of their difference at the .01 level of probability.

Findings and Conclusions

The analysis of data resulted in the production of six conclusions. First, it was concluded that there was a slight, but statistically significant, negative correlation between federal revenue per ADA and index property value per ADA in the Texas public school districts for 1978-79. This conclusion constituted a rejection of the first null hypothesis and supported the theory

that federal revenue to school districts increases as property value per ADA decreases. However, it must be mentioned that the small size of the correlation coefficient weakens the inverse relationship between federal revenue and property value. In other words, and in this particular instance, statistical significance does not translate into a strong practical significance.

Second, it was concluded that federal revenue did indeed have a statistically significant equalization effect on revenue per student in the Texas public school districts for 1978-79. This conclusion constituted a rejection of the second null hypothesis and supported the theory that federal revenue narrows the gap in total revenues among the 1,072 Texas school districts. Supporting this conclusion are several facts: federal revenue narrowed the range in revenues per pupil between the 5th and 95th percentiles; it produced a smaller variance when added to nonfederal revenues; it flowed, on the average, in greater amounts to property poor rather than property rich districts; and it generated a significantly smaller standard deviation when added to nonfederal revenues.

Third, it was concluded that there is enormous potential for federal revenue to be much more equalizing, if certain restrictions were implemented to prevent extreme exceptions to the equalization trend. For example, if regulations were initiated to eliminate the flow of federal aid into districts that do not need it because of an immense local tax base, the federal money now being

spent in such districts could be put to more effective use where the tax base is meager.

Fourth, it was concluded that the school districts with 50 percent of the state enrollment and neither extremely high nor extremely low property values per ADA received the least federal aid. This suggested that the "middle class" districts do not qualify for many of the targeted federal funds that the poorer districts obtain and that they do not have the resources to mount the effort needed to acquire discretionary federal aid. Thus, in a sense, the "middle class" districts are too rich for one type of federal aid and too poor for another.

Fifth, it was concluded that those districts doing without any federal aid whatsoever tended to be very small and very wealthy. Table 5 showed that only five of the sixty-eight such districts had enrollments of over 1,000, while only nine had property values per ADA below the state average. Thus, most of these districts had little need for federal assistance, especially when any effort to obtain it would bring only a minimal return.

Concluding Recommendation

Based on the findings and conclusions of this study, it is strongly recommended that all forms of federal aid be related to the local district's tax base. Federal revenue of all types--

targeted, impact, and discretionary--should be determined and allocated in two stages. In the first stage, an amount of federal aid would be determined, as it is presently, by application and incidence of targeted populations. This amount would then be matched with and multiplied by a factor that is related to property wealth. The resulting figure would constitute the actual amount of federal aid to be provided. As property value per ADA increased, the federal revenue factor would decrease proportionally. However, no district would receive more federal aid than determined in the initial step. The following example should clarify this point. After completion of the first stage, districts A, B, and C qualify for \$100,000 each in federal revenue. District A has a tax base of \$25,000 per ADA. District B has a tax base of \$75,000 per ADA. District C has a tax base of \$750,000 per ADA. If the statewide average tax base is \$75,000 per ADA, districts A and B would have a federal factor of 1.0 because their tax bases are equal to or less than the state average. District C would have a federal factor of 0.1 ($75,000/750,000$). After multiplying the initial \$100,000 by the matching factor, districts A, B, and C would receive \$100,000, \$100,000, and \$10,000, respectively, in federal aid.

The amount of federal aid not allocated because of a district's above average property wealth would be given to the state as a

block grant with the stipulation that it be spent to promote educational equalization. Thus, the \$90,000 (\$100,000 - \$10,000) not awarded to district C would become part of that block grant. It would then be the state's responsibility to define and determine equalization in terms of educational opportunity, revenues per pupil, or both.

Recommendations for Further Research

It is strongly recommended that further research on the equalization effect of federal aid in Texas be repetitions of this study with the substitution of input data from subsequent years. A comparative analysis could then be conducted to identify any trends in the equalization effect of federal aid. Does the correlation coefficient between property wealth and federal revenue increase or decrease from 1978-79 school years to 1979-80 and 1980-81? Does the disparity index for total and nonfederal revenue expand or shrink from year to year? Do the same districts continue to receive the most and the least federal aid? These and many other questions could be answered by repeating this study every year when the data become available. Since the computer program that produced this study has been catalogued and stored at Texas Tech University and is readily available to any student of school finance, the repetition of this

study would simply involve the coding and keypunching of new and more recent input data. Hopefully, this can be done annually by graduate students enrolled in the research or individual study class.

The significance of repeating this study on a yearly basis stems from the widespread expansion in oil explorations throughout Texas. As oil prices continue to rise, the incentive to drill increases. Areas of the state that have been previously ignored as sources of mineral wealth are rapidly becoming hotbeds of exploration and new production. Such activity has the effect of dramatically raising the local tax base. This, of course, could have a strong impact on the equalization effect of federal aid. Consequently, it is again recommended that this study be repeated annually by using the same program and changing only to the latest finance data as input.

It is also recommended that further research be conducted to study the relationship between federal aid and educational achievement in Texas. In 1979, the Texas Legislature authorized the Texas Assessment of Basic Skills Test (TABS) in order to gauge achievement throughout the state at specified grade levels. What is the relationship, if any, between amounts of federal revenue and TABS results? Does federal aid flow in greater amounts to those districts with relatively low test results? These are but two of

the questions that could be explored by correlating federal revenue per ADA with achievement scores per ADA in each Texas school district.

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