AN ANALYSIS OF CURRENT AND PROPOSED FUNDING FORMULAE FOR OKLAHOMA COMMON SCHOOLS

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CHAPTER I

INTRODUCTION

At the heart of the problem of financing local education lies its main source of revenue--the property tax. The use of the property tax as a form of raising revenue for local governments has long been plagued with criticism. In August of 1971, the ruling of the California Supreme court in the case of Serrano vs. Priest stated that the present system of financing elementary and secondary education based on the property tax, "makes the quality of a child's education depend upon the resources of his school district and ultimately upon the pocketbook of his parents."[1] This prompted many people in the field of educational finance to review their programs in anticipation of a supporting decision of the U. S. Supreme Court. In March 1973, the U. S. Supreme Court issued its ruling by overturning a case in Texas similar to Serrano vs. Priest. The Court reserved the rights of each state to act on reforms dealing with the property tax, but added: "The need is apparent for reforms in tax systems which may well have relied too long and too heavily on the local property tax."[2] This interpretation does not rule out the use of the local property tax, but it does encourage each state to reexamine its own educational finance system.

The Property Tax

Recent research has reinforced concerns earlier expressed by the Supreme Court that the property tax has brought about many cases of inequity and inefficiency in funding between local school districts. Janssen and Tweeten have cited five major criticisms of the property tax: (1) It is relatively regressive for individuals--the percentage tax burden decreases as personal income increases, (2) Even when incomes are similar, the property tax hits some groups harder than others--farmers are one such group, (3) Assessment procedures are not equitable in their treatment of different classes of property, and therefore do not give a fair judgment of property value, (4) The property tax is not responsive to changes in economic conditions, and (5) The quality of education of a child depends upon the property tax base of the district where he resides.[3] These criticisms deserve some discussion.

The low income elasticity of housing expenditures and the practice of assessing higher value property at relatively lower rates are the traditional explanations of the regressivity of the property tax.[4] Those who have relatively low incomes or low property values will be paying a higher property tax in relation to their incomes than those in the high income or high property value categories. The property tax appears to be regressive particularly at low income levels.[5]

In 1967, Oklahoma farmers paid over 30 per cent of all private real estate property taxes and approximately 25 per cent of all personal property taxes--due to assessments on public service properties the farmer share of total property taxes was reduced to 17 per cent. Considering that only 11 per cent of the state's population was

comprised of farmers who earned only 10 per cent of Oklahoma's total personal income, it is apparent that they paid more property taxes per capita and as a proportion of their income than did nonfarmers.[6] A University of Illinois study of possible substitutes for the property tax concluded:

> If the local property tax for schools is displaced by increases in other taxes there will be gains in equity and efficiency both in the tax system and in support for schools. The tax system will be made uniform among tax payers in similar income and family situations.[7]

The assessment of property in Oklahoma is directed by the county assessors of each county and therefore properties are not always assessed at the same per cent of market value. Table I gives the assessment-sales ratios of the State of Oklahoma and twelve counties selected at intervals from a listing of the most rural to the most urban counties. It shows the variation between individual counties and also the large discrepancy between rural and urban assessment practices. Since higher value property is usually assessed at a lower assessment-sales ratio than is lower value property, the wealthy urban and rural property owners tend to benefit most from these practices.

The criticism that the property tax is not responsive to economic changes is not strongly supported. During the period 1957-67, the income elasticity coefficient for property tax collections in Oklahoma was estimated at 0.65 and 1.74 between areas of the state and 1.46 for the state as a whole. An elasticity coefficient of 0.93 was estimated for the property tax base over the same period.[8] In contrast to the criticism, these estimates suggest a reasonably responsive tax to changes in personal income.

TABLE I

1970 OKLAHOMA REAL ESTATE ASSESSMENT-SALES RATIOS
(SELECTED COUNTIES)

County	A-S Ratio by Percent	
	Urban	Rural
Adair	14.23	13.97
Grant	17.80	10.39
Delaware	15.23	13.48
Okfuskee	22.65	12.38
Kingfisher	20.08	12.27
Nowata	21.39	13.29
Cotton	14.75	11.22
Tillman	20.01	12.04
Ottawa	22.61	13.25
Harmon	20.87	11.19
Payne	17.55	13.66
Tulsa	24.54	15.99
State of Okla.	19.69	11.75

Source: Oklahoma Tax Commission, Ad Valorem Tax Division, 1971 Progress Report to the Legislature on Property Revaluation

If the relative wealth of each school district in a state were equal, existing inequalities in the allocation of school funds might be justified on the grounds that each district would be expressing its demand for education through its tax effort. But, in fact, the distribution of wealth between districts is not even. For example, in Oklahoma measures of county wealth vary from $272,143.88 to $8,729.12 in market value of property per average daily attendance and from $3,809.00 to $1,572.00 in per capita income. Because of these vast differences in district wealth, inequalities in district expenditure per pupil are virtually assured under the current system due to the wide variation in tax effort needed to equalize per pupil expenditures.

Spillovers

The external benefits of public education and their subsequent spillover resulting from migration have recently been analyzed as to their effects upon funding of local school districts. Originally, local control of school funding was established because decisions regarding the local school in large part affected only the residents of each district. Due to a growth in the population, increased mobility, and growing economic interdependence, district isolation no longer exists. Therefore, local decisions regarding school finance affect the well-being of others outside the district as well. It has been charged that spillover benefits may alter the efficiency of educational resource allocation and also the equity of income distribution.

The concept of efficiency here refers to the ability of school funding formulae to obtain the maximum return for a given level of schooling investment. Assuming that elementary and secondary

education exhibits diminishing marginal productivity and the production functions of each educational unit are approximately equal, a move toward equal funding per student--transferring funds from high investment to low investment districts--will increase the return on overall schooling investment. A school funding formula that yields equal allocations per student is more efficient than a program allowing inter-district differences in allocations per student.

The use of the equity concept throughout this study is synonymous with horizontal equity--equal treatment of those in equal positions. In the particular case of spillovers of educational benefits, those districts experiencing outmigration of students educated with district funds are not receiving the full benefits of their educational investment. Considering that migration is usually from low income to high income areas, in most cases low income districts will have lower actual benefit-cost ratios for education than will the high income districts. Horizontal equity does not exist in this situation where capital and income are transferred from districts with low ability to pay to districts with high ability.

As a maximizer of the well-being of its residents, a community will tend to underinvest if the actual social benefits are greater than the benefits that the community itself expects to receive. Spillouts recognized by the community will reduce their perceived benefits below the actual benefits and will cause a non-socially optimal level of investment in education. Weisbrod tested the relationship between public school expenditures and state net migration rates using regression analysis.[9] The analysis showed a significant negative relationship between net outmigration and expenditures per student and no

relationship between net inmigration and expenditures for education. However, there are several assumptions that weaken the analysis. Net migration rates were used instead of gross rates--possibly gross rates would have been more appropriate. Also, federal aid was included in the dependent variable. The local school district has no control over the level of federal aid received and hence should not have been included in the analysis. Using gross migration estimates and only local expenditures per student, Holland found that after the effects of property and state foundation aid were accounted for, "neither in nor outmigration had a significant impact on education funding."[10] This result suggests that benefit spillovers are not considered very important by local decision makers. The correlation between foundation aid and net outmigration (.73) was high and significant indicating that the present foundation program does to some degree compensate districts for spillovers. Finally, Holland notes that the "decisions about the size of school budgets may well have become so institutionalized that response to spillovers or anything else for that matter may be virtually impossible."[11]

The benefit principle of taxation states that costs should be incurred by those who are expected to reap the benefits. If a particular community benefits from the decisions of another community to finance education without sharing the costs, the concept of equity under this principle will suffer. The costs to districts experiencing spillouts of educational benefits should be shared by those districts that receive those benefits through inmigration. The equity problems in financing local education presented by spillovers of educational benefits are intensified by the fact that migration of spillover

benefits occurs largely from poorer areas to more wealthy ones.

Objectives

Because of the underlying principles of equal opportunity in the American free-enterprise system, John Coons believes that this "renders the distribution of quality of public education according to wealth an incongruity in need of either powerful justification or speedy elimination."[12] The need is apparent for a study of the present system used by the state of Oklahoma to provide state aid to local school districts. The increasing mobility of our population and the interdependence of different levels of government make educational spillovers an important consideration in the funding programs of state and local governments. A comparison of several funding formulae representing different methods of achieving the goals of efficiency and equity should give a basis for revision of the Oklahoma program if the need for revision is justified. Some ideas for "optimal" funding may also result that could aid in further study to bring a more equal distribution of quality educational programs.

The major objective of this study is to analyze and compare several types of school funding formulae using data from the 1973-74 school year for public schools in the State of Oklahoma. Some of the formulae represent the basic funding programs presently used by the states. Other "model" formulae are also presented that attempt to eliminate the influences of local wealth on the quality (or, at least, per pupil expenditures) of education and compensate for the spillovers of educational investment to other areas. The study of these forumlae are based on the principles of efficiency and equity. The author by no

means implies that equal expenditures per pupil for schooling necessarily means equal educational opportunity. Other factors such as the differing costs of providing education between districts and for students with different educational needs will affect the actual quality of education under a system of equal expenditures per pupil. However, equal funding per student is a useful first step in reaching equal quality education for all students in the state.

Thesis Outline

Chapter II presents both the applied and theoretical funding formulae to be used in the analysis. The discussions include the development of the formulae, the general format of each plan, and the specific equations as applied to Oklahoma data.

In Chapter III the data for the State of Oklahoma is described. The Income Spillover formula is presented as the model that best represents the principles of equity and efficiency. State aid allocations resulting from the various formula are examined regarding their relationship to the model and their effectiveness in meeting the goals of optimal school finance. In Chapter IV the important findings of the thesis are summarized.

FOOTNOTES

[1]Serrano v. Priest, 5 Cal. 3d 584, 96 Cal. Rptr. 601, 487 P. 2d; 24; (1971). Cited in The United States Law Week, 40 (Sept. 14, 1971), 2128.

[2]Rodriguez v. San Antonio Independent School District, 337 F. Supp. 280 (D.C. Tex. 1971).

[3]Larry Janssen and Luther Tweeten, "Property Tax in Oklahoma: A Look At Some Criticisms," Oklahoma Business Bulletin, Vol. 41, No. 10 (October, 1973), p. 16.

[4]Dick Netzer, Economics of the Property Tax (Washington, D.C. 1966), pp. 56-57.

[5]Janssen and Tweeten, p. 19.

[6]Ibid., p. 21.

[7]H. G. Halcrow, et al., "School Tax Options Affecting Illinois Agriculture," Agriculture Experiment Station Bull. No. 744 (University of Illinois at Urbana-Champaign, 1973), p. 35.

[8]Janssen and Tweeten, p. 17.

[9]Burton A. Weisbrod, External Benefits of Public Education (Princeton, 1964), pp. 107-116.

[10]David Holland, "The Impact of Benefit Spillovers Upon Economic Efficiency in Public School Finance," American Journal of Agricultural Economics, Vol. 56, No. 2 (May, 1974), p. 304.

[11]Ibid., p. 305.

[12]John E. Coons, William H. Clune, III, and Stephen D. Sugarman, Private Wealth and Public Education (Cambridge, Mass., 1970), p. 11.

CHAPTER II

DESCRIPTION OF FORMULAE

The proper role of the state in the task of financing local education is very complex to define. Some believe that local districts should fully finance common schools to avoid state control, while others believe in full state funding in recognition that benefits (and social costs of inadequate schooling) are no respecter of district boundaries. The present grants-in-aid programs employed by the fifty states represent various compromises of these extremes in state aid to local schools. From 1905 to 1930, five basic state funding programs were developed to aid in financing local education. During this period the provision of elementary and secondary education was viewed as primarily a local responsibility with quantity rather than quality of educational services receiving the highest priority. The population was less mobile at that time and the voice of the disadvantaged was less insistent than it is today. Changing educational and social conditions greatly influenced the development of these school funding systems. The five basic plans--Flat Grants, Minimum Foundation, Percentage Equalizing, Guaranteed Tax Base, and Full State Funding--along with other "model" formulae used in this study are discussed below.

Minimum Foundation Plan

The Strayer-Haig Minimum Foundation Plan, developed in 1923, attempts to make all districts equally able to support a level of education expenditure determined by the state. The state makes up the difference between the minimum amount per pupil that it deems the districts should be spending and the amount of money that it thinks each district ought to raise locally. The amount of local money to be raised depends upon the district's assessed property valuation per pupil. The basis of the plan is represented in equation (2-1).

$$\text{The amount of state aid to any district} = \left\{\begin{array}{l}\text{no. of pupils in any district}\end{array}\right\} \overset{B}{X} \left\{\begin{array}{l}\text{dollar value of the Foundation Program}\end{array}\right\} - \overset{C}{\left\{\begin{array}{l}\text{amount of local revenue that can be raised using a local uniform minimum tax rate set by the state}\end{array}\right\}} \qquad (2\text{-}1)$$

The value B represents the dollar value of the foundation plan for any single district and C is the local share.

The school funding formula presently used by the State of Oklahoma is a variant of the minimum foundation plan. The foundation program provides $265 per elementary ADA and $318 per secondary ADA as the minimum amount that the state feels the locality should be spending. To be eligible for state aid, each district must tax ad valorem property at a minimum rate of 15 mills and a maximum rate of 35 mills for general fund purposes. Local chargeable income is the sum of property tax revenue--net assessed valuation times 15 mills--and state dedicated revenue. Foundation aid is determined by subtracting the local chargeable income from the base foundation support level. If

the difference is negative, the district will not receive foundation aid. In addition to the minimum foundation program, the Oklahoma formula provides aid for transportation, special education, and vocational education programs to be included in total foundation aid.

The major difference in the Oklahoma formula and the basic Strayer-Haig formula is the addition of incentive aid to total state aid. This grant is intended to encourage those districts with relatively low assessed property values to increase their tax levies above the required 15 mills. It is calculated using the ratio of district net assessed valuation per capita to average state valuation per capita and also the amount of millage levied above the minimum level. Details of the calculation of foundation aid and incentive aid are shown in Appendix A.[2]

Unequal assessment rates among districts create inequities in application of the Oklahoma formula. This study shows the impact of eliminating disparities attributed to unequal assessment practices by calculating state aid from the Oklahoma formula based on market value of property. The value of C in (2-1) for this formula uses market value of property and 0.002635 as the minimum tax rate. The 15 mill minimum rate for assessed value multiplied times a 17.57 per cent state assessment-sales ratio provides the estimated minimum tax rate on market value of property.

Flat Grant

The flat grant was first proposed in 1905 by Ellwood P. Cubberly at Teachers College at Columbia University. Recognizing the disparities of fiscal capacity and tax effort between local school districts

Cubberly regarded the provision of adequate education as both a state and local responsibility. He proposed a system of allocating state funds on the basis of number of students per district and/or number of teachers employed--in essence, the flat grant.

In this study, $238 per ADA is allocated as the flat grant to local districts. It is calculated by dividing the present total state education aid by state ADA. By providing this amount as the state grant-in-aid, the total amount of state expenditures for local education will remain the same as in the base year for comparison purposes. Local revenues received by the districts in addition to the flat grant presently come from two main sources--general fund tax levies on ad valorem property and state dedicated revenues. Since 96 per cent of the 638 school districts in the state utilize a tax rate of 35 mills for general fund revenues, the rate is equalized for all districts in the state, and applied to their respective ad valorem tax bases. Dedicated revenue consists of locally based taxes that are collected on a state level and allocated back to the local districts.[1]

Percentage Equalizing

The percentage equalizing plan is designed to encourage each locality to decide the level of education spending that it deems appropriate. In the 1920's, Harlan Updegraff of the University of Pennsylvania developed this formula that basically requires the state to share a fixed percentage of any level of spending desired by the individual district. The state decides what share of the total educational expenditures in the state that it will assume. The local district then decides what level of spending it desires. The actual

state share of expenditures for the particular locality is determined using average state assessed value per ADA, local assessed value per ADA, and the aggregate local share of expenditures as determined by the state. The following formula shows the concept of percentage equalization:

$$\text{Aid to any district} = \left[100\% - \left\{\begin{array}{l}\text{aggregate local share of total education expenditure in the state expressed as a percentage}\end{array}\right\} \times \left[\frac{\text{assessed value per ADA in the district}}{\text{assessed value per ADA in the state}}\right]\right] \text{total school expenditure in the district} \qquad (2\text{-}2)$$

The specific formula used in this study for the State of Oklahoma is:

$$SA = (1.0 - (0.55 \times \frac{DAV}{\$9,965})) \ (\$712 \times ADA) \qquad (2\text{-}3)$$

where:

SA = State Aid to any District

DAV = District Net Assessed Valuation

Corresponding to the general formula, 55 per cent is the aggregate local share of total education expenditures in the state (excluding federal funds), $9,965 is the assessed valuation per ADA in the state, and $712 times ADA is the total school allocation for each district. Actual application of this plan would allow the total expenditure to

vary among districts. The base year average expenditure per pupil times ADA is implemented as a norm to aid in comparison with the other formulae. The percentage equalizing formula is also applied by substituting the market values for actual district and state assessed property values.

Guaranteed Tax Base Plan

The guaranteed tax base plan, sometimes called the power equalizing formula, seeks to eliminate entirely the influence of wealth on local education spending. Under this formula the state assigns the same tax base per pupil for all districts regardless of their actual tax base. Each district may decide what level of spending per pupil it wants and set its tax rate according to the state guaranteed base. The local tax rate is then applied to the difference between the guaranteed and actual tax bases giving the amount of state aid per pupil. For districts with assessed value per pupil higher than the state guaranteed base per pupil, the state aid value is negative. Some advocates of this plan suggest that these districts should receive no state aid while others propose that this negative amount should be made in the form of payments to the state education fund for use as payment of state grants to less wealthy districts. While the first suggestion may be more politically feasible, the latter proposal seems more equitable. This plan is appealing to some in that it would be the main cause of disparities in education spending instead of varying district wealth. The guaranteed tax base is represented in Equation (2-4).

$$\text{Aid to any district} = \left[\text{local tax rate} \times \left(\text{assessed value per pupil that the state guarantees} - \text{assessed valuation per pupil in the district}\right)\right] \text{Total no. of pupils in the district} \quad (2\text{-}4)$$

The state guaranteed tax base formula using market value of property for the State of Oklahoma is:

$$SA = 0.0177 \times (40{,}142.08 - \frac{DMV}{ADA})\ ADA \quad (2\text{-}5)$$

SA = Total district state aid

DMV = District market value of property

The tax rate, 0.0177 is the rate at which total state property would be taxed to produce total education revenues of $712 per ADA. As noted earlier, actual application of this formula would allow individual districts to tax at different rates. This equalized rate is used for purposes of simplification. The guaranteed base of $40,142.08 is set such that a yield of $712 per pupil will result using the equalized tax base.

The guaranteed tax base formula using assessed value of property is Equation (2-6).

$$SA = 0.035 \times (20{,}034 - \frac{DAV}{ADA})\ ADA \quad (2\text{-}6)$$

SA = Total district state aid

DAV = District assessed value of property

The 35 mill tax rate yields $712 per ADA when applied to the per student assessed valuation of $20,034, the state average in the base year.

Full State Funding

The most recently proposed program for shcool financing is the full state funding plan. Like the flat grant, this plan consists of

payments from the state to local districts based on number of pupils and/or number of teachers employed. However, the difference in the two plans is that full state funding does not allow local districts to spend extra funds for education above the state grant. In this case the grant is set to provide that level of funds per student the state deems adequate for a quality education. This formula does not take into account the relative wealth of each district when determining the level of the state grant. This insures that each district, regardless of its taxpaying ability, will be treated equally according to its number of pupils or teachers.

The state grant per student under the full state funding plan in this study is $712 per ADA. This value is in keeping with the standards set for the previous formulae to allow a meaningful comparison of the results.

Ability to Pay Formulae

Several socio-economic variables have been studied regarding their relationship to expenditures on education and their value as measures of local ability to pay. Variables such as property valuation, income, per cent of owner-occupied housing, rurality, and per cent enrollment in public schools are usually cited as the most important measures explaining variation in local education expenditures. Holland studied the effects of per capita income and property valuation on local revenues per ADA using 1961 data from the Oklahoma State Economic Areas. When tested individually, per capita income explained 51 per cent of the variation in local revenues, and assessed valuation of property per capita explained 75 per cent of the total variation. The

two variables explained 87 per cent when tested jointly, both retaining their significance.[3] In the present analysis, per capita income and property valuation per ADA are employed as variables in developing the local ability to pay formulae.

Equation (2-7) is the Income formula utilizing X_1, total local income, as the measure of ability to pay in estimating local investment per ADA (Y_1). The Property formula is shown in both equations (2-8) and (2-9) using X_2, local assessed value of property, and X_3, local market value of property, as ability measures. In equations (2-10) and (2-11) the Property-Income formula is represented for income and assessed value and income and market value, respectively. The value Y_i in each formula represents the county estimate of local allocation per ADA.

$$Y_1 = (X_1 \times 0.05705) \ / \ ADA \qquad (2\text{-}7)$$

$$Y_2 = (X_2 \times 0.10143) \ / \ ADA \qquad (2\text{-}8)$$

$$Y_3 = (X_3 \times 0.01774) \ / \ ADA \qquad (2\text{-}9)$$

$$Y_4 = (Y_1/2) + (Y_2/2) \qquad (2\text{-}10)$$

$$Y_5 = (Y_1/2) + (Y_3/2) \qquad (2\text{-}11)$$

The tax rates in the first three equations are determined by dividing the total state and local education expenditure (assuming $712 per ADA) by total personal income in the state for (2-7), total state assessed value of property for (2-8), and total state market value of property for (2-9). When applied to the total value of the respective ability measures in each district, these rates will generate on a state level the amount of revenue needed to provide the $712 state average expenditure to each student in the state. The Property-Income formulae are

weighted averages of the Income and Property formulae. The problem in combining income and property in one ability formula is that no objective procedure is available for assigning the "proper" weights to each measure. Income and property are arbitrarily given equal weights in (2-10) and (2-11) allowing the reader to interpolate if he so desires for other weights.

Each of these formulae provide levels of local investment per ADA that accord with the locality's ability to pay. State aid is determined by subtracting the local investment levels (Y_i as given by the ability-equalized formulae) from the average total state and local investment of $712 per ADA. Negative values of state aid denote payments per ADA by the district to the state education fund for use in payment of state aid to less wealthy districts.

Spillover Adjustment

The ability to pay formulae can be adjusted for spillovers of educational benefits. The adjustment is made to correct for inequities (low income districts are likely to experience the greatest net loss of schooling investment through net outmigration) and for inefficiency. The latter can result from local underinvestment caused by low benefit-cost ratios for the district (local benefits in the numerator of the ratio are depressed by net outmigration of human resource investment, reducing economic investment incentives). The spillover adjustment formula attempts to compensate districts for their net loss or gain of locally funded educational benefits due to migration of high school graduates.

Holland, in his study of the benefits and costs of public education in Oklahoma, developed an Ability-Spillover model for the prediction of optimal levels of local schooling revenue based on the locality's ability to pay and spillovers.[4] An analysis of the burdens and benefits from public education by age and income class provided the information for an allocation of those benefits based on the migration patterns of each socio-economic class. The spillover data from the Holland study used in the development of this adjustment equation were collected for State Economic Areas from the 1960 census. The difference in local spending between the ability model and the spillover model represents the appropriate spillover adjustment per student for each area.

Net migration rates for S.E.A.'s in 1960 were regressed on the spillover adjustment per student from the Holland study. Assuming that a zero level of net migration will yield no adjustment for spillovers, the regression procedure was constructed to force a prediction equation with no intercept. Equation (2-12) relates the level of spillover adjustment per student, S_1, to net migration, X_1.

$$S_1 = 40.935\ X_1 \qquad (2\text{-}12)$$
$$(11.3864)$$
$$R^2 = .9089$$

where

the t value in parenthesis is significantly different from zero at .01; and
n = 14

In applying this equation to the present study, we must assume that composition (but not the level) of net migration for 1955-60 is

applicable to those students leaving school during the early 1970's. The equation must also be adjusted to reflect the increase in schooling costs since the 1960-61 school year. There are several possible measures of education costs including average annual teachers' salaries, total annual education expenditure, and annual education expenditure per ADA. Since 1960-61, teachers' salaries and total annual expenditures have increased 64.64 per cent and 164.89 per cent, respectively. The 134.14 per cent increase in annual expenditures per ADA represents a rough average of the other two measures.[5] By inflating the spillover formula by this value, it will yield estimates of spillover benefits based on 1973 education costs. The complete adjustment formula is represented by equation (2-13).

$$S_1 = (40.935\ X_1)\ 1.34 \qquad (2\text{-}13)$$

By adjusting each of the ability formulae for benefit spillovers, a new set of formulae are developed that compensate districts both for their net gain or loss of schooling benefits as well as their ability to pay.

The funding formulae analyzed in this study include those plans that have been applied in state finance programs and those proposed on a theoretical basis. Table II lists all formulae. The next chapter provides a description of the analyses and results.

TABLE II

LIST OF FUNDING FORMULAE CONSIDERED

Basic Plans:
Oklahoma Formula (Strayer-Haig)*
Flat Grant
Percentage Equalizing Plan*
Guaranteed Tax Base Plan*
Full State Funding
Ability to Pay Plans:
Income
Income Spillover
Property*
Property Spillover*
Property-Income*
Property-Income Spillover*

*These formulae are analyzed based on both assessed and market value of property.

FOOTNOTES

[1]These taxes include: 75% of the County 4 Mill Levy, Auto License Tax, School Land Earnings, Gross Production Tax, and Rural Electric Cooperative Tax.

[2]A description of the Oklahoma school funding program may also be found in Title 70, Article 18 of the Oklahoma Statutes.

[3]David Holland, "The Geographic and Income Class Distribution of the Benefits and Costs of Public Education--Implications for Common School Finance" (Unpublished Ph.D. thesis, Oklahoma State University, 1972), pp. 112-114.

[4]Ibid., pp. 60-89.

[5]Oklahoma State Department of Education, "Guide Me to Leave Footprints in the Ever Changing Times," 1972-73 Annual Report (Oklahoma City, 1973), p. 29.

CHAPTER III

ANALYSIS AND RESULTS

Data for each of the school districts in Oklahoma were obtained from the State Department of Education for the 1973-74 school year. The information contains all the necessary values needed for calculation of state aid which include average daily attendance by elementary and secondary levels, total net assessed valuation of property, allocations of all state dedicated revenues, and other values concerning transportation, special education, and vocational education. Assessment-sales ratios and values of per capita income by school district were not available, therefore, the information by school districts is aggregated to a county level. The aggregation of such data may average out some of the variations in income and property assessment between school districts, but it should not greatly affect the validity of this analysis. The reduction of the number of units to be analyzed from 638 districts to 77 counties also provides for an easier and more workable presentation of the results.

Values of state aid per student are determined by applying each formula to county data. Results are reported in Tables X-XXII in Appendix B. The full state funding and flat grant plans both provide equal grants per student, and therefore, tables for these particular formulae are not included in the appendix. Computed values of state allocations are utilized in comparing and analyzing the various

finance plans as to their applicability to the funding of elementary and secondary schools in Oklahoma.

Income Spillover Model

The Income Spillover formula is chosen as a model or ideal formula that, in the author's opinion, best represents the principles of equity and efficiency. Income has traditionally become regarded as the best measure of fiscal capacity in the modern economy (Musgrave and Musgrave, p. 204). In the early part of our history property served as an adequate measure of one's wealth. With the decline of the predominantly agrarian society and the large growth of the industrial sector, capital markets, and service industries, much of the nation's wealth has shifted. A person's wealth is now highly dependent upon his or her skills and ability as a human investment. Consumption has also been offered as a possible measure of economic position. It is argued that investment and savings are acts beneficial to others while consumption is basically antisocial.[1] The idea that saving is for the benefit of others is not defensible. Saving merely represents one's postponement of consumption to a later date. Musgrave and Musgrave state that "A person's capacity is measured by his income, and taxation imposes a sacrifice whether the tax falls on consumption or on saving."[2] Since consumption decreases as a percentage of income increases, a proportional tax on consumption is regressive with respect to income. Assuming that a progressive tax is desirable, an income tax is preferable to a consumption tax.

The efficiency and equity aspects of the spillover adjustment were discussed earlier in Chapter I. According to Holland,[3] educational

spillovers have no significant impact on the allocative efficiency of local school funding, where "allocative efficiency" is defined as a per cent of local income spent on schooling. State and federal governments have relieved some of the costs of local education and therefore have helped correct some of the inefficient funding that could result from lack of local funding effort due to losses of educational benefits through net migration. Various institutional restraints such as state mandatory minimum and maximum spending levels and budgeting activities by local school boards have lessened some of the variation in local spending per student. However, on equity grounds, spillover adjustments seem justified. It may be argued that the areas (or individuals) who benefit from local education should bear the costs. Net migration flows from low to high income areas suggest a definite need to adjust education aid for each locality according to its net loss or gain in education benefits.

The Income Spillover formula is based on income as a measure of ability to pay and attempts to improve the equity of school funding through spillover adjustment. The author does not present this formula as a "cure-all" for the problems of local educational finance, but merely as an arbitrary but useful norm combining previously prescribed goals for funding local schools. It should be considered a guideline and not a solution.

Average Deviations Between Formulae

Tables III-V show the average deviation among counties of state aid per student for all combinations of the formulae.[4] These values are the average absolute deviations per student among counties and give

TABLE III

AVERAGE DEVIATIONS AMONG COUNTIES OF STATE AID PER STUDENT IN AVERAGE DAILY ATTENDANCE
(COMPARISON OF FORMULAE BASED ON MARKET VALUE OF PROPERTY
WHERE THE PROPERTY BASE IS APPLICABLE)

Market Value or Property	Market Value of Property								
	Income	Property or Guaranteed Tax Base	Prop-Inc	Income Spillover	Property Spillover	Prop-Inc Spillover	Percent Equalizing	Oklahoma Formula	Flat Grant
Income	0.0	266.99	133.74	51.33	256.46	132.02	388.95	243.67	256.22
Property or Guaranteed Tax Base	266.99	0.0	133.25	292.49	52.86	161.48	342.96	250.91	274.72
Prop-Inc	133.74	133.25	0.0	160.68	133.51	52.16	342.94	243.17	255.38
Income Spillover	51.33	294.49	160.68	0.0	266.64	133.25	410.39	263.90	271.97
Property Spillover	256.46	52.86	133.51	266.64	0.0	133.38	358.89	265.92	287.59
Prop-Inc Spillover	132.02	161.48	52.16	133.25	133.38	0.0	358.75	257.97	269.86
Percent Equalizing	388.95	342.96	342.94	410.39	358.89	358.75	0.0	164.72	184.13
Oklahoma Formula	243.67	250.91	243.17	263.90	265.92	257.97	164.72	0.0	50.74
Flat Grant	256.22	274.72	255.38	271.97	287.59	184.13	184.13	50.74	0.0

TABLE IV

AVERAGE DEVIATIONS AMONG COUNTIES OF STATE AID PER STUDENT IN AVERAGE DAILY ATTENDANCE (FORMULAE BASED ON ASSESSED VALUE COMPARED TO FORMULAE BASED ON MARKET VALUE OF PROPERTY WHERE THE PROPERTY BASE IS APPLICABLE)

Market Value of Property	Assessed Value of Property					
	Property or Guaranteed Tax Base	Prop-Inc	Property Spillover	Prop-Inc Spillover	Per cent Equalizing	Oklahoma Formula*
Income	164.70	82.33	162.16	89.42	441.39	239.59
Property or Guaranteed Tax Base	151.22	203.49	179.51	228.44	434.24	248.88
Prop-Inc	85.72	75.87	102.43	109.55	434.85	241.25
Income Spillover	184.03	108.25	164.74	82.37	458.51	258.54
Property Spillover	157.68	199.99	150.97	203.16	452.19	263.37
Prop-Inc Spillover	112.54	87.53	85.34	75.42	451.42	256.15
Per cent Equalizing	343.48	349.72	359.10	367.42	99.18	170.66
Oklahoma Formula	258.76	245.92	273.03	260.19	206.46	16.35
Flat Grant	288.97	261.10	300.42	274.93	214.91	61.87

*Formula presently used by the State of Oklahoma.

TABLE V

AVERAGE DEVIATIONS AMONG COUNTIES OF STATE AID PER STUDENT IN AVERAGE DAILY ATTENDANCE
(COMPARISON OF FORMULAE BASED ON ASSESSED VALUE OF PROPERTY)

Assessed Value of Property	Assessed Value of Property					
	Property of Guaranteed Tax Base	Prop-Inc	Property Spillover	Prop-Inc Spillover	Percent Equalizing	Oklahoma Formula*
Property of Guaranteed Tax Base	0.0	82.37	51.29	108.25	436.15	252.17
Prop-Inc	82.37	0.0	89.46	51.29	436.15	241.82
Property Spillover	51.29	89.46	0.0	82.37	451.40	266.73
Prop-Inc Spillover	108.25	51.29	82.37	0.0	451.40	255.89
Percent Equalizing	436.15	436.15	451.40	451.40	0.0	209.30
Oklahoma Formula*	252.17	241.82	266.73	255.89	209.30	0.0

*Formula presently used by the State of Oklahoma.

no indication whether the formula compared constitutes an increase or decrease in average spending per student for any given county. Total public funds for common schools for the entire state is constant for each formula (an average of $712 per student). Levels of state aid per student represent the difference in the amount of local revenue per student determined by each of the formulae and the desired total level of $712 per student. State aid for the Income Spillover formula represent the appropriate level of state allocations per student for each county when income is taken as the best measure of ability to pay. Therefore, deviations from the state allocations of the Income Spillover model represent a divergence from the appropriate level of state funding that results from the application of the various formulae. The Income Spillover allocations represent minimum levels of state spending when all counties provide the same per cent of their incomes for education. This indicates another advantage of the model in that it allows local control over schooling.

Deviations From Income Spillover Model

The third row of Tables III and IV show the average deviations of the various formula from the Income Spillover or "model" formula. As expected, the smallest deviation is from the Income formula, the only difference in the two formulae being the spillover adjustment. The next best-fitting formulae are the Property-Income Spillover and Property-Income formulae based on assessed value followed by the same two formulae using market value of property. The fact that these formulae have relatively small deviations from the Income Spillover plan can partially be attributed to elements of Income and Spillover common

to each formula. However, the use of a mixed tax base may also have some merit. Employing both tax bases in one system may allow each base to compensate for deficiencies in the other: some may view this compromise as a more equitable system.

The Property and Property Spillover formulae average deviations ($184.03 and $164.74 for assessed value and $292.49 and $266.64 for market value) also represent the deviations for the Guaranteed Tax Base plan and the same plan adjusted for spillovers. The Guaranteed Tax Base formula using assessed value of property yields the lowest deviation from the Income Spillover model of the four basic plans represented here. By adjusting this formula for spillovers, the deviation is decreased by approximately twenty dollars. The Oklahoma formula based on assessed value (the formula presently used by the state of Oklahoma) deviates from the model on the average by $258.54, nearly one hundred dollars per student higher than the Guaranteed Tax Base formula using assessed value and adjusted for spillovers. The Flat Grant plan follows with an average deviation of $271.97 per student, and finally the Percentage Equalizing formula based on market value varies from the model by $410.39 per student. By comparing each of the finance plans to this theoretical model, we have obtained some measure of their adherence to concepts of efficiency and equity.

Deviations From Oklahoma Formula

The deviations from the present Oklahoma formula are listed in column six of Tables IV and V. The Flat Grant exhibits the least variance from Oklahoma funding plan, deviating by only $61.87 per student among counties. Each district's ability to provide local

education is not a factor in allocating the Flat Grant. Because it correlates highly with the Oklahoma formula funding, the latter apparently also fails to compensate well for a locality's ability to pay. The Percentage Equalizing plan yields deviations from the Oklahoma Plan of $170.66 and $209.30 for assessed and market value, respectively. This formula deviates sharply from the model Income Spillover formula but deviates little from the Oklahoma formula, again emphasizing the variance of the present Oklahoma plan from the proposed model. The formulae developed in this study utilizing various combinations of income, property, and spillovers as bases for allocations, yield average deviations from 239.59 to 266.73 dollars per student. The highest deviation is from the assessed value Property Spillover formula (or the assessed value Guaranteed Tax Base formula adjusted for spillovers) which corresponds fairly well to the Income Spillover model. Another interesting observation of the Oklahoma plan is that the deviation increases in each case a formula is adjusted for spillovers. This fact suggests that the present Oklahoma formula does not compensate districts for the spillover of educational benefits, thus affecting the equity if not efficiency of educational funding in the state.

Assessed Value Versus Market Value

The tables of average deviations indicate the effects of utilizing assessed value of property versus market value as a tax base for financing local education. For each of the formulae that uses property as an ability measure, except the Percentage Equalizing Plan, the average deviation from the Income Spillover model is smaller for the assessed value base than for the market value base. It is of interest

to note this evidence of "use-value" assessment. That is, differential assessment rates bring property closer to ability to pay for public services as measured by income. For example, many farmers and ranchers have much higher ratios of property value to income than does the average urban citizen. They currently pay much higher property taxes in relation to income than urban residents. Equalized assessment rates across the state would only increase the divergence of the property tax-income ratio between farm and nonfarm residents. This does not rule out the need for an equal assessment rate for similar types of property throughout the state.

Average State Allocations by County Characteristics

Some of the important economic and physical characteristics of each county provide good bases for further analysis of the differences among funding plans. Per capita income, property value per ADA, and per cent rurality are each used to rank the 77 counties into quintiles. The average state allocations per student for each quintile of counties by funding formula are presented in Tables VI-VIII for the three characteristics. Table IX lists the average allocation per student by area of the state. The values of these characteristics by county and the counties of each area division may be obtained in Table XXIII and Figure 1 of Appendix C. Again, the Income Spillover formula serves as a norm for comparison.

TABLE VI

AVERAGE STATE ALLOCATIONS BY QUINTILES RANKED ACCORDING TO PER CAPITA INCOME
(DOLLARS/ADA)

Formula	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Oklahoma (market)	183.40	219.66	255.13	228.68	317.66
Oklahoma (assessed)*	181.69	223.08	259.59	224.24	340.17
Percentage Equalizing (market)	-60.11	44.17	221.64	229.63	464.88
Percentage Equalizing (assessed)	224.78	325.62	422.20	425.73	556.26
Income	-138.11	27.87	97.67	135.44	299.16
Income Spillover	-139.45	44.17	127.51	174.13	282.91
Property (market) or Guaranteed Tax Base	-724.69	-581.75	-235.45	-220.00	234.52
Property (assessed) or Guaranteed Tax Base	-545.55	-285.28	-36.00	-26.88	310.02
Property Spillover (market)	-781.16	-566.64	-205.61	-185.31	218.28
Property Spillover (assessed)	-546.89	-270.18	-6.16	11.81	293.77
Property-Income (market)	-424.55	-276.34	-68.89	-42.28	266.84
Property-Income (assessed)	-341.83	-128.11	30.83	54.29	304.59
Property-Income Spillover (market)	-460.30	-261.24	-39.05	-3.59	250.59
Property-Income Spillover (assessed)	-343.17	-113.00	60.68	92.97	288.34

*Present formula used by the state of Oklahoma.

TABLE VII

AVERAGE STATE ALLOCATIONS BY QUINTILES RANKED ACCORDING TO MARKET VALUE OF PROPERTY PER ADA (DOLLARS/ADA)

Formula	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Oklahoma (market)	158.54	198.71	232.47	290.45	325.49
Oklahoma (assessed)*	161.58	216.33	239.63	302.13	331.05
Percentage Equalizing (market)	-508.40	166.78	333.17	420.92	512.66
Percentage Equalizing (assessed)	46.43	390.34	444.06	518.21	566.73
Income	-66.56	65.47	30.24	210.67	185.04
Income Spillover	-21.31	123.72	19.37	237.29	132.35
Property (market) or Guaranteed Tax Base	-1645.98	-282.63	-19.95	149.60	326.86
Property (assessed) or Guaranteed Tax Base	-1005.90	-118.22	20.44	211.83	337.06
Property Spillover (market)	-1605.61	-283.18	-30.81	176.23	274.16
Property Spillover (assessed)	-961.78	-59.97	9.58	238.45	284.37
Property-Income (market)	-855.71	-101.28	5.14	180.13	255.95
Property-Income (assessed)	-535.66	-26.38	25.34	211.25	261.05
Property-Income Spillover (market)	-811.58	-79.73	-5.72	206.76	203.26
Property-Income Spillover (assessed)	-491.54	31.87	14.48	237.87	208.36

*Present formula used by the State of Oklahoma.

TABLE VIII

AVERAGE STATE ALLOCATIONS BY QUINTILES RANKED ON PERCENT OF COUNTY POPULATION THAT IS RURAL (DOLLARS/ADA)

Formula	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Oklahoma (market)	226.96	264.10	251.73	236.88	227.93
Oklahoma (assessed)*	234.29	284.43	262.70	240.46	230.69
Percentage Equalizing (market)	-243.12	291.54	260.34	283.23	327.79
Percentage Equalizing (assessed)	197.89	464.62	441.75	422.35	437.67
Income	62.26	183.51	115.24	81.11	-12.67
Income Spillover	81.10	199.67	119.67	102.29	-8.73
Property (market) or Guaranteed Tax Base	-1133.43	-100.38	-101.87	-116.43	-30.35
Property (assessed) or Guaranteed Tax Base	-614.96	73.49	14.48	-35.59	3.94
Property Spillover (market)	-1115.70	-84.21	-156.25	-99.26	-26.41
Property Spillover (assessed)	-597.24	89.66	18.90	-14.42	7.88
Property-Income (market)	-535.03	41.57	13.99	-17.66	-21.51
Property-Income (assessed)	-275.79	128.50	64.86	22.76	-4.36
Property-Income Spillover (market)	-517.30	57.73	-18.29	3.51	-17.57
Property-Income Spillover (assessed)	-258.07	144.67	69.28	43.93	-0.42

*Present Formula used by the State of Oklahoma.

TABLE IX

AVERAGE STATE ALLOCATIONS FOR AREAS OF THE STATE
(DOLLARS/ADA)

Formula	Northwest	Northeast	Southwest	Southeast	Oklahoma County	Tulsa County
Oklahoma (market)	163.33	270.16	226.98	301.64	203.90	204.21
Oklahoma (assessed)*	167.26	278.22	238.03	318.09	188.87	170.16
Percentage Equalizing (market)	448.03	384.45	268.17	424.60	362.59	363.88
Percentage Equalizing (assessed)	71.17	487.04	438.85	533.99	406.87	352.26
Income	-63.91	97.84	100.55	228.67	-210.74	-161.86
Income Spillover	-37.87	77.62	149.57	235.25	-238.72	-183.81
Property (market) or Guaranteed Tax Base	-1529.34	79.13	-99.11	156.70	36.90	39.39
Property (assessed) or Guaranteed Tax Base	-924.04	131.37	6.98	252.55	-75.56	-216.51
Property Spillover (market)	-1504.36	58.91	-99.67	163.28	8.93	17.45
Property Spillover (assessed)	-917.07	111.15	56.00	259.13	-103.54	-238.45
Property-Income (market)	-796.09	88.49	6.49	192.68	-86.92	-61.24
Property-Income (assessed)	-502.44	114.60	53.77	240.61	-143.15	-83.18
Property-Income Spl. (market)	-771.11	68.27	26.53	199.26	-114.90	-83.18
Property-Income Spl. (assessed)	-477.47	94.38	102.79	247.19	-171.13	-211.13

*Present formula used by the State of Oklahoma.

Per Capita Income and Property Per ADA

Ranking of counties in quintiles according to their per capita income and property value per ADA provides comparisons among groups of counties based on two different measures of their ability to pay for local education. Quintile 1 contains counties having the greatest ability to pay, and quintile 5 having the lowest. The average state allocations in row six for the Income Spillover formula represent the desired average levels of state spending for each ability to pay group.

In Table VI the value -139.45 indicates that districts falling in quintile 1 should on the average be paying $139.45 per student to the state education fund from their local revenues. The positive values for quintiles 2 through 5 represent state payments per student to the districts in those groups. The Property Spillover and Property-Income Spillover formulae both tend to over-penalize the high and middle income counties but provide fairly representative values of state aid for the 5th quintile. Based on the property measure in Table VII these two formulae again over penalize the top two quintiles while providing relatively appropriate values for the third and fourth quintiles. In this case, however, the fifth quintile containing counties with the lowest property values per ADA shows a much higher average state allocation for these two formulae than for the Income Spillover model. Introducing property in education funding formulae seems to discriminate against high and middle income districts as well as districts with high property values. The use of property as an ability measure also overcompensates those districts with very low property values if per capita income is taken as the "best" measure of ability to pay for local education.

For both per capita income and property rankings, the present Oklahoma formula yields higher average allocations per student than the Income Spillover model for all quintiles. The per capita income ranking in Table VI indicates that the counties in quintile 1 receive on the average $321.14 more than the average allocation of the Income Spillover model, while the counties in the 5th quintile receive only $57.26 more than the model allocation. Even though the present funding program provides more average funds per student, the distribution of those funds is most unequitable on an ability-to-pay basis. Table VII supports this statement, showing wide differences in average allocations for quintiles one, three, and five and relatively smaller differences for the second and fourth quintiles. The distribution of funds to districts according to their property values per ADA also proves to be unequitable under the present funding system.

Per cent Rurality and Area of the State

Present and proposed school funding for rural versus urban areas is presented in Tables VIII and IX. The Property Spillover and Property Income Spillover formulae based on assessed value both over penalize the highly rural areas when compared to the Income Spillover model. Rural areas are characterized by high property values per ADA and relatively low per capita incomes (half of the counties in the most rural quintile are ranked in the top quintile of property per ADA and also the two bottom quintiles of per capita income). Formulae using property instead of the income as an ability measure discriminate against a large portion of the rural school districts by overestimating their actual ability to pay. The implementation of an equal assessment

ratio for all types of property would cause even greater inequities in property-based formulae as shown by using market versus assessed value of property as a formula base. In Table IX, the Northwestern quarter of the state has average deviations for the property formulae that are far below the Income Spillover model's -37.87 allocation for that area. This particular area of the state has very high property values (14 of the area's 17 counties rank in the top quintile of property per ADA). Despite the area's relatively high per capita income as indicated by the negative allocation of the Income Spillover model, a property-based formula would heavily over estimate the area's ability to pay for education.

The Oklahoma formula in line two of Tables VIII and IX again over-compensates all areas according to the income ability to pay measure. The difference in average allocation between the Oklahoma and Income Spillover formulae for the most rural quintile is $153.19 whereas the difference for the most urban quintile is $239.42. The highly rural northwestern quarter of the state shown in Table IX is presently over paid by $205.13, but Oklahoma and Tulsa counties are over paid by $427.59 and $353.97, respectively. These particular values of average state allocations again show that the present Oklahoma school finance program greatly over-compensates the state's urban areas when examined in relation to the allocations to rural areas. The state's reliance on property as an educational tax base and the provision of flat grants to districts that provide additional vocational and special education programs are two probable causes of the inequities of the present funding system.

Full State Funding

The finance plan heretofore unmentioned in the analysis of the various school funding formulae is the Full State Funding plan. Because this formulae distributes equal grants to all students with no input of local revenues, there is no variation in the state grant or total revenue per student between district boundaries. Implementation of this formula would yield no inter-district disparities in revenues per student due to local taxation of unequal tax bases.

In its 1972 Fourth Annual Report, the Oklahoma Commission on Education recommended that,

> Oklahoma gradually phase out local revenue sources for schools, with a concurrent increase in state revenues for elementary and secondary education. It is recommended that ad valorem taxes be retained by counties, cities, and towns and that all revenue collected by the state be retained by the state for allocation to the general fund.[5]

A system of this type would shift the entire burden of financing local education to the state. Additional sources of revenue would be required other than the state collected taxes on automobile licenses, school land earnings, gross production, and R.E.C. utilities. Correcting problems of inequity and inefficiency that persist in the present Oklahoma program by a plan of full state funding would raise other issues such as possible encroachment of state control over local schools.

Possible Formula Variations

The Per cent Equalizing and Guaranteed Tax Base formulae are designed to be fairly flexible in their implementation. Several limitations have necessarily been placed on these two formulae to allow for

a meaningful comparison of the differences in formula allocations. However, the possible variations that could result from actual implementation of these two formulae deserve brief discussion.

Property as the Tax Base

The description of the Percentage Equalizing plan in Chapter II notes that it is especially designed to encourage localities to decide what total level of education expenditure they desire. The present analysis determines the education expenditure per district by allocating the state average, $712, for each unit of ADA. If no limitations on expenditure per ADA are set, each district remains free to determine the level that it feels it can finance according to its percentage share of the total. The lower the property value per pupil, the smaller the percentage share of total expenditures that the district must provide. For any given increase in expenditures, districts with unequal tax bases must provide equal percentage increases in local funds. Districts with widely different tax bases may acquire the same level of expenditure with equal tax effort. Actual application of the Guaranteed Bax Base formula also allows freedom for local decision makers to set their own levels of education expenditure per student. The tax base per pupil for school expenditures is the same for all districts. Equal tax effort by districts with unequal actual tax bases still results in equal allocations per student because the respective tax rates are applied to the same state guaranteed base. The problem with these two formulae utilizing property as the tax base is that districts with more property per ADA would spend more per ADA even with

the same effort, and inequities that grow out of income-property disparities would persist.

Income as the Tax Base

An alternative to the property base for both the Percentage Equalizing and Guaranteed Tax Base plans is an income base. Schultz cites several estimates of the income elasticity of demand for education expenditures ranging from .73 to 1.09, indicating an elasticity of approximately 1.0.[6] A unitary income elasticity of demand implies that the same percentage of income will be spent for schooling at all income levels. If this relationship holds, each district under the Percentage Equalizing program would choose to spend the same amount per ADA whatever its income level since equal percentage sacrifices in income are obtained by equal expenditures per pupil. Equal expenditures per ADA would also result under the Guaranteed Tax Base plan since equal percentage sacrifices in income only result from the use of uniform tax rates for all districts. Because each district tends to spend the same per cent of its income on education regardless of its total level of income, the equitability of these two formulae is improved by using income instead of property as the tax base. Even with freedom of local choice, expenditures per pupil would not be expected to vary widely among districts.

FOOTNOTES

[1]John Hobbes, Leviathan, Part 2, 1924, quoted in Richard A. Musgrave and Peggy B. Musgrave, Public Finance in Theory and Practice (New York, 1973), p. 205.

[2]Richard A. Musgrave and Peggy B. Musgrave, Public Finance in Theory and Practice (New York, 1973), p. 205.

[3]David Holland, "The Impact of Benefit Spillovers Upon Economic Efficiency in Public School Finance," American Journal of Agricultural Economics Vol. 56, No. 2 (May, 1974), p. 304.

[4]The Guaranteed Tax Base formula and the Property formula yield the same grants per student and therefore are treated as one in the analysis.

[5]Oklahoma Commission on Education, Fourth Annual Report (Oklahoma City, December, 1972), p. 17.

[6]Theodore W. Schultz, The Economic Value of Education (New York, 1963), p. 9.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Introduction

In light of the recent court decisions and public concern regarding the financing of public shcools, an evaluation of the present system of funding elementary and secondary schools in the State of Oklahoma can prove beneficial in determining if that system does provide equitable and efficient funding for common schools. What are the possible alternatives that would apply to the state's school system and how do they compare in meeting the proposed standards? What system of school funding would best provide equal opportunity with regards to schooling expenditures for each child in the State of Oklahoma? The answers to these questions are crucial to the future well-being of students, and the remainder of this chapter will be dedicated to defining those answers based on the previous analysis.

The Oklahoma Formula

In Chapter III, the results of the analysis showed that the Oklahoma formula heavily favors high income areas if income is the appropriate measure of ability to pay. The most urban counties also received higher levels of state aid in relation to their actual ability to pay than did the most rural areas. Additional aid under the Oklahoma formula was nearly 43 per cent higher than under the Income

Spillover model for urban Oklahoma County compared to the economically depressed southeastern section of the state. These findings suggest neither equity nor efficiency in financing common schools. The high income and/or urban areas possess a definite advantage over other areas under the present system of school funding.

The Oklahoma formula has as its base the Strayer-Haig minimum foundation plan which guarantees a minimum level of expenditure per student. Local revenues consist of ad valorem tax collections (15 mills minimum and 35 mills maximum for general fund purposes), and funds from state collected local taxes. State grants are issued to those districts whose local revenues do not reach the foundation level. In addition to the basic foundation program, the districts that can provide vocational and special education programs receive state grants for each program. Those districts that are already financially capable of providing these programs receive the grants, while districts that are unable to initiate such programs cannot receive the state grants. Also, there is no maximum level of total local revenues, thus permitting a very large variation in local expenditures per student ranging from the minimum state foundation level to the highest local collections plus state aid for special programs. These are some of the causes for the failure of the Oklahoma formula to adhere to the equity and efficiency principles of educational funding. The program merely provides a minimum expenditure level per student rather than encouraging equal opportunity as measured by the level of spending for each student in the state.

Alternative Funding Formulae

The proposed formulae developed in this study were used primarily as examples of different combinations of measures of ability to pay, spillover adjustments, and market and assessed valued tax bases. They are not especially constructed for easy application on a district basis, but nevertheless they have provided some information that is valuable to the overall study of school finance. First, the Income Spillover formula served as a model for comparing the other formulae. Because it utilized per capita income as the measure of ability to pay and makes adjustments for spillover benefits, it exhibits most of the desired qualities needed to provide optimal school funding. However, the need for data on student migration rates and per capita incomes for each district makes the formula difficult but not impossible to apply in a finance program. One solution would be to obtain migration data by followup of students or by periodic sample surveys. Another alternative that would improve allocations would be to drop the spillover adjustment and rely on income alone.

Secondly, the analysis has shown that the use of property as a tax base for funding local schools very imperfectly represents each district's actual ability to pay for schooling. It especially discriminates against rural districts where incomes are a smaller percentage of property values than in the urban areas.[1] The property tax has received much criticism as the major cause of inter-district disparities in schooling revenue. The analysis supports the critics of the property tax on the grounds that the amount of property a person owns is not an adequate measure of his actual ability to pay for public services.

The concern of many for equal assessment rates for all types of property is not justified considering the results of this analysis. For all formulae, except the Percentage Equalizing plan, estimates of state allocations based on assessed value of property came closer to the allocations of the Income Spillover formula than did the estimates using market value. The practice of assessing different types of properties at different rates brings property values closer to an actual measure of ability to pay. The analysis suggests that equal rates be applied to like properties (based, for example, on use value) instead of assigning one assessment rate to all types of property.

Of the four basic formulae appearing in the analysis, the Guaranteed Tax Base plan using assessed value of property best approximates the distributional impact of the Income Spillover model. Even though its average deviation from the model formula is $184.03, which seems fairly large, the deviation for the Oklahoma formula is 40 per cent larger. A Guaranteed Tax Base formula will result in inter-district differences in expenditures per student; however, those differences will be caused only by the various levels of demand for education expenditures that exist between districts. Expenditures per student will not depend on the property wealth of each district because the tax base guaranteed by the state is the same for all districts under this formula--equal tax effort will yield equal revenues for schooling.

The basic criticism of this plan is that property is used as the tax base. The areas with high property values and also the very rural areas will be overtaxed when property is employed as the measure of ability to pay. A solution to the problems of using the property tax base is to implement an income based Guaranteed Tax Base program. As

noted in Chapter III, the unitary income elasticity of demand for education expenditures implies that each district will spend the same per cent of its income on school expenditures. Therefore, under the income based formula, equal percentage spending will result from equal tax rates yielding uniform levels of school funding per student for all districts. If local control of school funding is considered an important criterion for a total educational finance program, the income based Guaranteed Tax Base plan would provide equal expenditures per pupil with substantial freedom of local choice.

Implications of the Study for Changes in the Oklahoma School Finance System

President Nixon's Commission on School Finance concludes:

> If the less important problem of inter-district differences in fiscal capacity and tax effort is not first eliminated, then the more important problem of meeting differential human needs can never be successfully dealt with.[2]

A school finance program that would ensure no inter-district differences in total allocations per student would require the state to assume total responsibility in distributing funds for local education. A complete Full State Funding program utilizing a flat grant per student with no local revenues included would give each student in the state the financial potential to receive an equal education. This concept supports the decision of the Oklahoma Commission on Education report concluding that a gradual state takeover of financing the common schools would best achieve the goal of providing equal educational opportunity through equal educational spending for all the school children in the state.

The cost of providing the state average total allocation of $712 per ADA for the 1974 school year would be $397,563,712, which is $264,278,512 more than the state is presently paying in aid to local districts. The need for additional revenues to finance this type of program could be met by a change to a statewide property tax. This change would probably require a shift to state control of the assessment function. If local assessors are eliminated completely, economies of scale could conceivably be realized that would save money.[3] Revenues from the auto license tax, school land earnings, gross production tax, and R.E.C. tax that are presently collected by the state and reallocated to local school districts could be retained for use in the state funding program. By eliminating the reallocation procedure, extra administration costs could be saved.

By using a mix of revenues from different tax sources--the income tax, sales tax, property tax, and taxes from public utilities--the weaknesses of each tax may be compromised and a more equitable school funding program would result.

The political feasibility of a full state funding program is threatened by the fact that localities fear state funding means state control of local schools. Total distribution of funds by the state does not necessarily imply state control over the way in which the funds are spent on the local level, it only attempts to provide equitable funding for all school districts. The decision must be made between equality of educational opportunity and freedom of local choice.

FOOTNOTES

[1]See Chapter I, "The Property Tax."

[2]President's Commission on School Finance, "Review of Existing School Finance Programs," Vol. 1 (1972), p. 39.

[3]Thomas F. Hady, "Alternatives to the Local Property Tax for Educational Finance," The Southern Journal of Agricultural Economics, Vol. 5, No. 1 (July, 1973), p. 89.

SELECTED BIBLIOGRAPHY

Barlow, Robin.

1970 "Efficiency Aspects of Local School Finance." Journal of Political Economy, Vol. 78 (September), 1028-1040.

Coons, John E., William H. Clune, III, and Stephen D. Sugarman.

1970 Private Wealth and Public Education. Cambridge: Harvard University Press.

Hady, Thomas F.

1973 "Alternatives to the Local Property Tax for Educational Finance." Southern Journal of Agricultural Economics, Vol. 5, No. 1 (July), 85-90.

Halcrow, H. G. et al.

1973 "School Tax Options Affecting Illinois Agriculture." Agriculture Experiment Station, Bull. No. 744. University of Illinois at Urbana-Champaign.

Hines, Fred, and Luther Tweeten

1972 "Optimal Regional Funding of Elementary and Secondary Schooling." Agricultural Experiment Station, P-669. Stillwater: Oklahoma State University, September.

Holland, David W.

1972 "The Geographic and Income Class Distribution of the Benefits and Costs of Public Education--Implications for Common School Finance." (Unpub. Ph.D. thesis, Oklahoma State University.)

1973 "The Distribution of Costs and Benefits of Public Schooling." Southern Journal of Agricultural Economics, Vol. 5, No. 1 (July), 71-79.

1974 "The Impact of Benefit Spillovers Upon Economic Efficiency in Public School Finance." American Journal of Agricultural Economics, Vol. 56, No. 2 (May), 300-305.

Holland, David W., and Luther G. Tweeten.

1974 "Common Schooling in Oklahoma: An Estimate of Distributive Impact." Oklahoma Business Bulletin, Vol. 42, No. 4 (April), 10-14.

1973 "The Geographic Distribution of Schooling Benefits: Implications for Public School Finance." Educational Administration Quarterly, Vol. 9, No. 2 (Spring), 63-74.

Janssen, Larry, and Luther Tweeten.

1973 "Property Tax in Oklahoma: A Look at Some Criticisms." Oklahoma Business Bulletin, Vol. 41, No. 10 (October), 16-23.

Morgan, Daniel C.

1970 Elementary and Secondary Education Aid: Toward an Optimal Program for the State of Texas. Austin: University of Texas.

Musgrave, Richard A., and Peggy B. Musgrave.

1973 Public Finance in Theory and Practice. New York: McGraw-Hill, Inc.

National Educational Finance Project.

1971 Alternative Programs for Financing Education, Vol. 5. Gainesville: University of Florida.

Netzer, Dick.

1966 Economics of the Property Tax. Washington, D. C.: Brookings Institution.

Oklahoma Commission on Education.

1972 Fourth Annual Report. Oklahoma City, Oklahoma.

1973 Assessing Change in the Finance Public Education. Oklahoma City, Oklahoma.

Oklahoma State Department of Education.

1973 1972-1973 Annual Report. Oklahoma City, Oklahoma.

Oklahoma Tax Commission.

1971 1971 Progress Report to the State Legislature on Property Revaluation. Oklahoma City, Oklahoma.

1973 1973 Progress Report to the State Legislature on Property Revaluation. Oklahoma City, Oklahoma.

President's Commission on School Finance.

1972 Final Report--Schools, People, and Money. Washington, D. C.: U. S. Government Printing Office.

1972 Review of Existing School Finance Programs, Vol. 1. Washington, D. C.: U. S. Government Printing Office.

Schultz, Theodore W.

1963 The Economic Value of Education. New York: Columbia University Press.

Schultze, Charles L. et al.

1972 Setting National Priorities--The 1973 Budget. Washington, D. C.: Brookings Institute, 339-355.

Tweeten, Luther et al.

1974 The Economics of Elementary and Secondary Schooling in Oklahoma. Agricultural Experiment Station, B-714. Stillwater, Oklahoma: Oklahoma State University.

Weisbrod, Burton A.

1964 External Benefits of Public Education. Princeton: Princeton University Press.

White, Freddie Cad.

1972 "A Quantitative Analysis of Factors Affecting Elementary and Secondary Schooling Quality in Oklahoma, with Economic Application for Rural Areas." (Unpub. Ph.D. thesis, Oklahoma State University.)

White, Fred, and Luther Tweeten.

1973 "Internal Economics of Rural Elementary and Secondary Schooling." Socio-Economic Planning Science, Vol. 7, 353-369.

APPENDIX A

FORM FOR CALCULATING STATE AID

FORM FOR CALCULATING STATE AID

1. Elem. A.D.A. _____ X $265 = $_____

2. Sec. A.D.A. _____ X $318 = $_____

3. Line 3 Total $_____

SUBTRACT CHARGEABLE INCOME

4. 1972 Net Assessed Val. X 15 Mills
   _____ X .015 = $_____

   1971-1972 Collections of:

5. 75% of County 4 Mill $_____

6. Auto License $_____

7. School Land $_____

8. Gross Production $_____

9. R.E.C. Tax $_____

10. Line 10 Total $_____

11. Line 11 (Line 3 Total Minus Line 10 Total) = $_____

ADD THE FOLLOWING

12. Transportation:
    (75% X A.D.H. X PER CAPITA)
    75% X _____ X _____ = $_____

13. Special Education:
    _____ programs X $4000 = $_____

    _____ programs X $4500 = $_____

    _____ programs X $5000 = $_____

14. Vocation Programs
    _____ Vo. Ag. X $3700 = $_____

    _____ Other X $2500 = $_____

15. Line 15 Total $_____

Foundation Aid - Line 11 Plus Line 15 = $_____

Incentive Aid

1. District Valuation divided by District A.D.A. = Dist. Val. per A.D.A.

2. District Val. per A.D.A. divided by 7,020 = District Wealth Ratio

3. District Wealth Ratio X .585 = Local Support Ratio

4. 1.0000 - Local Support Ratio = State Support Ratio (Min. .4150 Max. .6000)

5. State Average Support per Mill ($6.880) divided by .585 - Support Level (11.76)

6. 12.00 X State Support Ratio = State Support per Mill

7. State Support per Mill X Mills Levied above 15 = Matching Grant

8. Matching Grant X Dist. A.D.A. = Incentive Aid $_____

Total State Aid $_____

*Q Factor (1970-71)
Incentive Aid (1970-71)

APPENDIX B

TABLES

TABLE X

STATE AID BY COUNTIES FOR THE OKLAHOMA FORMULA
BASED ON MARKET VALUE OF PROPERTY
(DOLLARS/ADA)

Adair	386.89	Grant	148.91	Nowata	268.46
Alfalfa	161.09	Greer	206.14	Okfuskee	296.78
Atoka	335.99	Harmon	206.14	Oklahoma	203.90
Beaver	146.14	Harper	150.65	Okmulgee	309.06
Beckham	212.22	Haskell	299.47	Osage	166.50
Blaine	169.53	Hughes	293.94	Ottawa	271.82
Bryan	286.70	Jackson	292.54	Pawnee	210.78
Caddo	252.18	Jefferson	158.62	Payne	203.78
Canadian	237.72	Johnston	363.37	Pittsburg	304.13
Carter	257.24	Kay	156.27	Ponotoc	233.36
Cherokee	347.67	Kingfisher	152.21	Pottawatomie	466.84
Choctaw	336.36	Kiowa	177.12	Pushmataha	485.09
Cimmarron	152.66	Latimer	292.24	Roger Mills	784.07
Cleveland	289.25	Leflore	340.41	Rogers	274.70
Coal	268.40	Lincoln	266.42	Seminole	275.30
Comanche	319.04	Logan	237.31	Sequoyah	390.76
Cotton	267.79	Love	231.65	Stephens	194.67
Craig	288.10	Major	155.78	Texas	131.64
Creek	293.89	Marshall	245.10	Tillman	218.88
Custer	163.81	Mayes	297.77	Tulsa	204.21
Delaware	329.43	McClain	273.47	Wagoner	330.11
Dewey	177.91	McCurtain	363.07	Washington	214.60
Ellis	157.15	McIntosh	310.57	Washita	189.17
Garfield	162.31	Murray	187.40	Woods	149.54
Garvin	189.08	Muskogee	283.59	Woodward	180.16
Grady	293.11	Noble	178.92		

TABLE XI

STATE AID BY COUNTIES FOR THE OKLAHOMA FORMULA
BASED ON ASSESSED VALUE OF PROPERTY
(DOLLARS/ADA)

Adair	394.36	Grant	148.91	Nowata	273.51
Alfalfa	161.09	Greer	163.05	Okfuskee	302.50
Atoka	368.83	Harmon	227.73	Oklahoma	188.87
Beaver	146.14	Harper	150.65	Okmulgee	310.37
Beckham	215.99	Haskell	314.31	Osage	170.05
Blaine	181.58	Hughes	295.80	Ottawa	264.52
Bryan	315.44	Jackson	304.67	Pawnee	234.71
Caddo	275.67	Jefferson	176.82	Payne	209.39
Canadian	248.62	Johnston	319.78	Pittsburg	323.65
Carter	264.31	Kay	166.16	Ponotoc	251.84
Cherokee	353.98	Kingfisher	152.21	Pottawatomie	308.31
Choctaw	365.22	Kiowa	183.19	Pushmataha	343.70
Cimarron	152.66	Latimer	300.09	Roger Mills	179.46
Cleveland	294.26	Leflore	360.12	Rogers	296.42
Coal	287.86	Lincoln	298.77	Seminole	279.93
Comanche	328.74	Logan	248.01	Sequoyah	391.77
Cotton	207.79	Love	265.48	Stephens	189.65
Craig	251.79	Major	155.78	Texas	131.64
Creek	291.51	Marshall	256.32	Tillman	235.34
Custer	194.92	Mayes	321.80	Tulsa	170.16
Delaware	343.92	McClain	307.88	Wagoner	340.79
Dewey	177.91	McCurtain	380.07	Washington	193.67
Ellis	157.15	McIntosh	336.32	Washita	232.27
Garfield	175.65	Murray	211.47	Woods	149.54
Garvin	193.03	Muskogee	274.83	Woodward	180.16
Grady	245.28	Noble	187.92		

TABLE XII

STATE AID BY COUNTIES FOR THE PERCENTAGE EQUALIZING FORMULA BASED ON MARKET VALUE OF PROPERTY (DOLLARS/ADA)

Adair	582.78	Grant	-1096.20	Nowata	381.06
Alfalfa	-711.98	Greer	56.96	Okfuskee	415.03
Atoka	448.37	Harmon	172.27	Oklahoma	362.59
Beaver	-1786.27	Harper	-1042.95	Okmulgee	473.37
Beckham	205.50	Haskell	414.57	Osage	296.59
Blaine	15.85	Hughes	415.70	Ottawa	460.90
Bryan	389.36	Jackson	431.70	Pawnee	156.53
Caddo	188.41	Jefferson	57.49	Payne	332.03
Canadian	298.01	Johnston	397.71	Pittsburg	471.69
Carter	435.16	Kay	162.47	Ponotoc	343.71
Cherokee	539.30	Kingfisher	-227.70	Pottawatomie	482.52
Choctaw	471.97	Kiowa	51.87	Pushmataha	459.23
Cimmarron	-490.27	Latimer	410.49	Roger Mills	-318.34
Cleveland	478.64	Leflore	506.94	Rogers	277.79
Coal	334.11	Lincoln	354.89	Seminole	406.21
Comanche	502.77	Logan	279.41	Sequoyah	631.87
Cotton	115.25	Love	184.09	Stephens	407.41
Craig	276.07	Major	-168.26	Texas	-427.06
Creek	484.20	Marshall	325.47	Tillman	217.76
Custer	37.13	Mayes	411.01	Tulsa	363.88
Delaware	479.36	McClain	338.85	Wagoner	520.87
Dewey	-853.70	McCurtain	526.16	Washington	370.20
Ellis	-685.04	McIntosh	413.93	Washita	68.07
Garfield	179.50	Murray	254.83	Woods	-488.49
Garvin	337.99	Muskogee	457.98	Woodward	149.25
Grady	589.30	Noble	114.25		

TABLE XIII

STATE AID BY COUNTIES FOR THE PERCENTAGE EQUALIZING FORMULA BASED ON ASSESSED VALUE OF PROPERTY (DOLLARS/ADA)

Adair	634.39	Grant	-175.83	Nowata	477.82
Alfalfa	-117.02	Greer	341.58	Okfuskee	492.83
Atoka	583.23	Harmon	387.61	Oklahoma	406.87
Beaver	-629.10	Harper	-125.65	Okmulgee	534.05
Beckham	363.35	Haskell	520.76	Osage	350.12
Blaine	296.28	Hughes	494.22	Ottawa	499.71
Bryan	541.01	Jackson	545.69	Pawnee	438.07
Caddo	420.84	Jefferson	347.21	Payne	440.69
Canadian	423.84	Johnston	500.23	Pittsburg	567.77
Carter	516.58	Kay	356.55	Ponotoc	473.62
Cherokee	589.13	Kingfisher	124.29	Pottawatomie	543.92
Choctaw	603.39	Kiowa	308.18	Pushmataha	534.44
Cimarron	-155.21	Latimer	502.26	Roger Mills	236.97
Cleveland	530.18	Leflore	593.93	Rogers	464.78
Coal	485.36	Lincoln	526.26	Siminole	491.04
Comanche	576.66	Logan	419.41	Sequoyah	634.92
Cotton	405.20	Love	467.93	Stephens	463.74
Craig	442.35	Major	208.57	Texas	92.74
Creek	525.65	Marshall	479.03	Tillman	402.68
Custer	355.79	Mayes	543.47	Tulsa	352.26
Delaware	570.59	McClain	520.67	Wagoner	575.69
Dewey	14.95	McCurtain	612.16	Washington	396.24
Ellis	-46.32	McIntosh	551.48	Washita	381.22
Garfield	367.11	Murray	439.19	Woods	12.58
Garvin	443.98	Muskogee	492.24	Woodward	325.83
Grady	475.63	Noble	310.01		

TABLE XIV

STATE AID BY COUNTIES FOR THE INCOME FORMULA
(DOLLARS/ADA)

Adair	380.31	Grant	-62.52	Nowata	70.39
Alfalfa	-120.86	Greer	-47.08	Okfuskee	355.65
Atoka	262.57	Harmon	89.97	Oklahoma	-210.74
Beaver	1.51	Harper	43.21	Okmulgee	152.85
Beckham	39.46	Haskell	262.12	Osage	-321.97
Blaine	158.48	Hughes	145.29	Ottawa	37.37
Bryan	120.27	Jackson	164.61	Pawnee	24.52
Caddo	265.51	Jefferson	131.17	Payne	-202.03
Canadian	158.42	Johnston	325.17	Pittsburg	132.96
Carter	140.21	Kay	-96.36	Ponotoc	62.64
Cherokee	196.06	Kingfisher	58.77	Pottawatomie	134.37
Choctaw	269.04	Kiowa	156.73	Pushmataha	351.99
Cimarron	28.10	Latimer	214.13	Roger Mills	-1148.54
Cleveland	86.81	Leflore	302.30	Rogers	217.38
Coal	313.94	Lincoln	182.97	Seminole	234.97
Comanche	11.15	Logan	121.59	Sequoyah	367.90
Cotton	-109.61	Love	238.97	Stephens	22.00
Craig	126.06	Major	70.62	Texas	-25.41
Creek	101.22	Marshall	95.06	Tillman	130.95
Custer	-51.68	Mayes	159.48	Tulsa	-161.86
Delaware	289.85	McClain	257.40	Wagoner	-14.53
Dewey	78.05	McCurtain	382.80	Washington	-215.76
Ellis	-21.35	McIntosh	277.71	Washita	34.50
Garfield	-94.87	Murray	81.40	Woods	-182.95
Garvin	86.10	Muskogee	123.85	Woodward	24.63
Grady	130.26	Noble	95.68		

TABLE XV

STATE AID BY COUNTIES FOR THE PROPERTY FORMULA AND GUARANTEED TAX BASE FORMULA BASED ON MARKET VALUE OF PROPERTY (DOLLARS/ADA)

Adair	462.33	Grant	-2781.68	Nowata	72.59
Alfalfa	-2039.33	Greer	-553.63	Okfuskee	138.21
Atoka	202.62	Harmon	-330.84	Oklahoma	36.90
Beaver	-4115.00	Harper	-2678.81	Okmulgee	250.93
Beckham	-266.62	Haskell	137.32	Osage	-90.63
Blaine	-633.06	Hughes	139.51	Ottawa	226.84
Bryan	88.62	Jackson	170.42	Pawnee	-361.25
Caddo	-299.64	Jefferson	-552.59	Payne	-22.16
Canadian	-87.88	Johnston	104.74	Pittsburgh	247.69
Carter	177.11	Kay	-349.77	Ponotoc	.42
Cherokee	378.32	Kingfisher	-1103.63	Pottawatomie	268.62
Choctaw	248.22	Kiowa	-563.47	Pushmataha	223.62
Cimarron	-1610.94	Latimer	129.44	Roger Mills	-1278.76
Cleveland	261.11	Leflore	315.80	Rogers	-126.96
Coal	-18.14	Lincoln	22.02	Seminole	121.18
Comanche	307.74	Logan	-123.82	Sequoyah	557.17
Cotton	441.01	Love	-308.00	Stephens	123.49
Craig	-130.27	Major	-988.79	Texas	-1488.83
Creek	271.86	Marshall	-34.83	Tillman	-242.94
Custer	-591.93	Mayes	130.44	Tulsa	39.39
Delaware	262.52	McClain	-7.04	Wagoner	342.72
Dewey	-2313.14	McCurtain	352.94	Washington	51.59
Ellis	-1987.27	McIntosh	136.09	Washita	-532.16
Garfield	-316.87	Murray	-171.31	Woods	-1607.50
Garvin	-10.65	Muskogee	221.20	Woodward	-375.31
Grady	474.92	Noble	-442.94		

TABLE XVI

STATE AID BY COUNTIES FOR THE PROPERTY FORMULA AND GUARANTEED TAX BASE FORMULA BASED ON ASSESSED VALUE OF PROPERTY (DOLLARS/ADA)

Adair	511.68	Grant	-1579.57	Nowata	107.58
Alfalfa	-1427.77	Greer	-244.09	Okfuskee	146.31
Atoka	379.64	Harmon	-125.28	Oklahoma	-75.56
Beaver	-2749.48	Harper	-1450.04	Okmulgee	252.70
Beckham	-187.89	Haskell	218.39	Osage	-222.05
Blaine	-361.01	Hughes	149.88	Ottawa	164.06
Bryan	270.67	Jackson	282.75	Pawnee	4.97
Caddo	-39.49	Jefferson	-229.56	Payne	11.72
Canadian	-31.76	Johnston	165.41	Pittsburg	339.74
Carter	207.60	Kay	-205.45	Ponotoc	96.73
Cherokee	394.86	Kingfisher	-804.92	Pottawatomie	278.18
Choctaw	431.67	Kiowa	-330.29	Pushmataha	253.70
Cimarron	-1526.33	Latimer	170.65	Roger Mills	-514.09
Cleveland	242.72	Leflore	407.26	Rogers	73.92
Coal	127.04	Lincoln	232.60	Seminole	141.69
Comanche	362.69	Logan	-43.19	Sequoyah	513.05
Cotton	-79.88	Love	82.04	Stephens	71.22
Craig	16.01	Major	-587.40	Texas	-886.37
Creek	231.01	Marshall	110.68	Tillman	-86.38
Custer	-207.40	Mayes	277.00	Tulsa	-216.51
Delaware	347.00	McClain	218.17	Wagoner	360.18
Dewey	-1087.14	McCurtain	454.31	Washington	-102.99
Ellis	-1245.27	McIntosh	297.70	Washita	-141.78
Garfield	-178.19	Murray	7.85	Woods	-1093.26
Garvin	20.22	Muskogee	144.78	Woodward	-284.72
Grady	101.92	Noble	-325.58		

TABLE XVII

STATE AID BY COUNTIES FOR THE PROPERTY-INCOME FORMULA
BASED ON MARKET VALUE OF PROPERTY
(DOLLARS/ADA)

Adair	421.32	Grant	-1422.10	Nowata	71.49
Alfalfa	-1071.10	Greer	-300.36	Okfuskee	246.93
Atoka	232.59	Harmon	-120.43	Oklahoma	-86.92
Beaver	-2056.75	Harper	-1317.80	Okmulgee	201.89
Beckham	-113.58	Haskell	199.72	Osage	-206.30
Blaine	-237.29	Hughes	142.40	Ottawa	132.11
Bryan	104.44	Jackson	167.52	Pawnee	-168.37
Caddo	-17.07	Jefferson	-210.71	Payne	-112.10
Canadian	35.27	Johnston	214.96	Pittsburg	190.33
Carter	158.66	Kay	-223.07	Ponotoc	31.53
Cherokee	287.19	Kingfisher	-522.43	Pottawatomie	201.50
Choctaw	258.63	Kiowa	-203.37	Pushmataha	287.80
Cimarron	-791.42	Latimer	171.78	Roger Mills	-1213.65
Cleveland	173.96	Leflore	309.05	Rogers	45.21
Coal	147.90	Lincoln	102.50	Seminole	178.08
Comanche	159.44	Logan	-1.12	Sequoyah	462.54
Cotton	275.31	Love	-34.52	Stephens	72.75
Craig	-2.10	Major	-459.09	Texas	-757.12
Creek	186.54	Marshall	30.12	Tillman	-55.99
Custer	-321.81	Mayes	144.96	Tulsa	-61.24
Delaware	276.18	McClain	125.18	Wagoner	164.09
Dewey	-1117.54	McCurtain	367.87	Washington	-82.08
Ellis	-1004.31	McIntosh	206.90	Washita	-248.83
Garfield	-205.87	Murray	-44.96	Woods	-895.22
Garvin	37.72	Muskogee	172.53	Woodward	-175.34
Grady	302.59	Noble	-173.63		

TABLE XVIII

STATE AID BY COUNTIES FOR THE PROPERTY-INCOME FORMULA
BASED ON ASSESSED VALUE OF PROPERTY
(DOLLARS/ADA)

Adair	446.00	Grant	-821.05	Nowata	88.98
Alfalfa	-765.32	Greer	-145.58	Okfuskee	250.98
Atoka	321.10	Harmon	-17.65	Oklahoma	-143.15
Beaver	-1373.98	Harper	-703.41	Okmulgee	202.77
Beckham	-74.21	Haskell	240.26	Osage	-272.01
Blaine	-101.26	Hughes	147.59	Ottawa	100.71
Bryan	195.47	Jackson	223.68	Pawnee	14.74
Caddo	113.01	Jefferson	-49.20	Payne	-95.16
Canadian	63.33	Johnston	245.29	Pittsburg	236.35
Carter	173.91	Kay	-150.91	Ponotoc	79.69
Cherokee	295.46	Kingfisher	-373.08	Pottawatomie	206.28
Choctaw	350.35	Kiowa	-86.78	Pushmataha	302.84
Cimarron	-749.11	Latimer	192.39	Roger Mills	-831.31
Cleveland	164.77	Leflore	354.78	Rogers	145.65
Coal	220.49	Lincoln	207.78	Seminole	188.33
Comanche	186.92	Logan	39.20	Sequoyah	440.48
Cotton	-94.75	Love	160.51	Stephens	46.61
Craig	71.04	Major	-258.39	Texas	-455.89
Creek	166.12	Marshall	102.87	Tillman	22.29
Custer	-129.54	Mayes	218.24	Tulsa	-189.19
Delaware	318.43	McClain	237.78	Wagoner	172.82
Dewey	-504.54	McCurtain	418.55	Washington	-159.37
Ellis	-633.31	McIntosh	287.70	Washita	-53.64
Garfield	-136.53	Murray	44.63	Woods	-638.10
Garvin	53.16	Muskogee	134.31	Woodward	-130.05
Grady	116.09	Noble	-114.95		

TABLE XIX

STATE AID BY COUNTIES FOR THE INCOME SPILLOVER FORMULA
(DOLLARS/ADA)

Adair	346.85	Grant	-5.47	Nowata	133.47
Alfalfa	-37.59	Greer	3.93	Okfuskee	419.28
Atoka	252.14	Harmon	180.48	Oklahoma	-238.72
Beaver	67.88	Harper	138.66	Okmulgee	202.21
Beckham	121.74	Haskell	264.32	Osage	-255.60
Blaine	189.20	Hughes	212.21	Ottawa	23.11
Bryan	105.46	Jackson	255.67	Pawnee	3.12
Caddo	301.71	Jefferson	187.67	Payne	-225.60
Canadian	34.45	Johnston	373.44	Pittsburg	111.57
Carter	189.03	Kay	-42.06	Ponotoc	87.33
Cherokee	81.97	Kingfisher	-10.89	Pottawatomie	137.66
Choctaw	292.63	Kiowa	264.24	Pushmataha	352.54
Cimarron	120.80	Latimer	169.15	Roger Mills	-1061.32
Cleveland	-205.01	Leflore	275.42	Rogers	55.02
Coal	306.26	Lincoln	175.29	Seminole	315.60
Comanche	39.67	Logan	94.16	Sequoyah	274.65
Cotton	-15.81	Love	273.53	Stephens	78.50
Craig	179.27	Major	101.88	Texas	-41.86
Creek	68.86	Marshall	66.54	Tillman	238.46
Custer	-33.03	Mayes	102.43	Tulsa	-183.81
Delaware	125.29	McClain	226.13	Wagoner	-195.00
Dewey	120.29	McCurtain	381.71	Washington	-165.84
Ellis	6.63	McIntosh	295.26	Washita	287.38
Garfield	-68.00	Murray	77.01	Woods	-164.30
Garvin	181.54	Muskogee	174.32	Woodward	-1.15
Grady	156.04	Noble	132.43		

TABLE XX

STATE AID BY COUNTIES FOR THE PROPERTY SPILLOVER FORMULA BASED ON MARKET VALUE OF PROPERTY (DOLLARS/ADA)

Adair	428.87	Grant	-2724.64	Nowata	135.67
Alfalfa	1974.06	Greer	-562.62	Okfuskee	201.84
Atoka	192.20	Harmon	-240.33	Oklahoma	8.93
Beaver	4048.63	Harper	-2583.36	Okmulgee	300.30
Beckham	-184.34	Haskell	139.52	Osage	-24.26
Blaine	-602.34	Hughes	206.43	Ottawa	212.58
Bryan	73.81	Jackson	261.47	Pawnee	-382.64
Caddo	-263.44	Jefferson	-496.10	Payne	-45.75
Canadian	-211.85	Johnston	153.02	Pittsburg	226.30
Carter	225.93	Kay	-295.46	Ponotoc	25.10
Cherokee	264.23	Kingfisher	-1173.29	Pottawatomie	271.91
Choctaw	271.81	Kiowa	-455.96	Pushmataha	224.17
Cimarron	-1518.24	Latimer	84.46	Roger Mills	-1191.55
Cleveland	-30.71	Leflore	288.92	Rogers	-289.32
Coal	-25.82	Lincoln	14.34	Seminole	201.82
Comanche	336.26	Logan	-151.25	Sequoyah	463.92
Cotton	-347.21	Love	-273.44	Stephens	179.99
Craig	-77.06	Major	-957.52	Texas	-1505.28
Creek	239.50	Marshall	-63.35	Tillman	-135.42
Custer	-573.28	Mayes	73.40	Tulsa	17.45
Delaware	97.96	McClain	-38.30	Wagoner	162.25
Dewey	-2270.90	McCurtain	351.84	Washington	101.51
Ellis	-1959.29	McIntosh	153.65	Washita	-279.29
Garfield	-289.99	Murray	-175.70	Woods	-1588.85
Garvin	84.80	Muskogee	271.67	Woodward	-401.09
Grady	500.70	Noble	-406.19		

TABLE XXI

STATE AID BY COUNTIES FOR THE PROPERTY SPILLOVER FORMULA BASED ON ASSESSED VALUE OF PROPERTY (DOLLARS/ADA)

Adair	478.22	Grant	-1522.52	Nowata	170.66
Alfalfa	362.50	Greer	-193.07	Okfuskee	209.94
Atoka	369.22	Harmon	-34.77	Oklahoma	-103.54
Beaver	-2683.11	Harper	-1354.60	Okmulgee	302.06
Beckham	-105.61	Haskell	220.59	Osage	-155.67
Blaine	-330.29	Hughes	216.80	Ottawa	149.79
Bryan	255.86	Jackson	373.80	Pawnee	-16.43
Caddo	-3.29	Jefferson	-173.06	Payne	-11.87
Canadian	-155.72	Johnston	2.3.68	Pittsburg	318.35
Carter	256.42	Kay	-151.14	Ponotoc	121.42
Cherokee	280.77	Kingfisher	-874.59	Pottawatomie	281.47
Choctaw	455.26	Kiowa	-222.78	Pushmataha	254.25
Cimarron	-1433.63	Latimer	125.67	Roger Mills	-426.87
Cleveland	-49.10	Leflore	380.38	Rogers	-88.45
Coal	119.36	Lincoln	224.92	Seminole	222.32
Comanche	391.21	Logan	-70.62	Sequoyah	419.80
Cotton	13.91	Love	116.60	Stephens	127.72
Craig	69.22	Major	-556.14	Texas	-902.82
Creek	198.65	Marshall	82.15	Tillman	21.14
Custer	-188.75	Mayes	219.96	Tulsa	-238.45
Delaware	182.44	McClain	186.90	Wagoner	179.71
Dewey	-1044.90	McCurtain	453.21	Washington	-53.07
Ellis	-1217.30	McIntosh	315.25	Washita	111.10
Garfield	-151.32	Murray	3.46	Woods	-1074.61
Garvin	115.66	Muskogee	195.24	Woodward	-310.50
Grady	127.70	Noble	-288.83		

TABLE XXII

STATE AID BY COUNTIES FOR THE PROPERTY-INCOME SPILLOVER FORMULA BASED ON MARKET VALUE OF PROPERTY (DOLLARS/ADA)

Adair	387.86	Grant	-1365.06	Nowata	134.57
Alfalfa	-1005.82	Greer	-249.34	Okfuskee	310.56
Atoka	222.17	Harmon	-29.93	Oklahoma	-114.90
Beaver	-1990.37	Harper	-1222.35	Okmulgee	251.26
Beckham	-31.30	Haskell	201.92	Osage	-139.93
Blaine	-206.57	Hughes	209.32	Ottawa	117.84
Bryan	89.63	Jackson	258.57	Pawnee	-189.76
Caddo	19.13	Jefferson	-154.21	Payne	-135.68
Canadian	-88.70	Johnston	263.23	Pittsburg	168.93
Carter	207.48	Kay	-168.76	Ponotoc	56.21
Cherokee	173.10	Kingfisher	-592.09	Pottawatomie	204.79
Choctaw	282.22	Kiowa	-95.86	Pushmataha	288.35
Cimarron	-698.72	Latimer	126.80	Roger Mills	-1126.43
Cleveland	-117.86	Leflore	282.17	Rogers	-117.15
Coal	140.22	Lincoln	94.82	Seminole	258.71
Comanche	187.97	Logan	-28.54	Sequoyah	369.29
Cotton	-181.51	Love	.04	Stephens	129.24
Craig	51.10	Major	-427.82	Texas	-773.57
Creek	154.18	Marshall	1.59	Tillman	51.52
Custer	-303.16	Mayes	87.91	Tulsa	-83.18
Delaware	111.62	McClain	93.91	Wagoner	-16.37
Dewey	-1075.31	McCurtain	366.77	Washington	-32.17
Ellis	-976.33	McIntosh	224.45	Washita	4.04
Garfield	-178.99	Murray	-49.34	Woods	-876.57
Garvin	133.17	Muskogee	222.99	Woodward	-201.12
Grady	328.17	Noble	-136.88		

TABLE XXIII

STATE AID BY COUNTIES FOR THE PROPERTY-INCOME SPILLOVER FORMULA BASED ON ASSESSED VALUE OF PROPERTY (DOLLARS/ADA)

Adair	412.54	Grant	-764.00	Nowata	152.06
Alfalfa	-700.04	Greer	-94.57	Okfuskee	314.61
Atoka	310.68	Harmon	72.85	Oklahoma	-171.13
Beaver	-1307.61	Harper	-607.97	Okmulgee	252.14
Beckham	8.07	Haskell	242.45	Osage	-205.64
Blaine	-70.55	Hughes	214.51	Ottawa	86.45
Bryan	180.66	Jackson	314.74	Pawnee	-6.65
Caddo	149.21	Jefferson	7.30	Payne	-118.74
Canadian	-60.64	Johnston	293.56	Pittsburg	214.96
Carter	222.73	Kay	-96.60	Ponotoc	104.37
Cherokee	181.37	Kingfisher	-442.74	Pottawatomie	209.57
Choctaw	373.94	Kiowa	20.73	Pushmataha	303.39
Cimarron	-656.41	Latimer	147.41	Roger Mills	-744.10
Cleveland	-127.05	Leflore	327.90	Rogers	-16.71
Coal	212.81	Lincoln	200.11	Seminole	268.96
Comanche	215.44	Logan	11.77	Sequoyah	347.23
Cotton	-0.95	Love	195.06	Stephens	103.11
Craig	124.24	Major	-227.13	Texas	-472.34
Creek	133.75	Marshall	74.35	Tillman	129.80
Custer	-110.89	Mayes	161.19	Tulsa	-211.13
Delaware	153.87	McClain	206.52	Wagoner	-7.64
Dewey	-462.31	McCurtain	417.46	Washington	-109.46
Ellis	-605.33	McIntosh	305.25	Washita	199.24
Garfield	-109.66	Murray	40.24	Woods	-619.45
Garvin	148.60	Muskogee	184.78	Woodward	-155.83
Grady	141.87	Noble	-78.20		

APPENDIX C

PER CAPITA INCOME, PROPERTY PER ADA, AND PER CENT RURAL BY COUNTIES

TABLE XXIV

PER CAPITA INCOME, PROPERTY PER ADA, AND PER CENT RURAL BY COUNTIES
(NUMBERS IN PARENTHESES INDICATE QUINTILE
RANKING FOR EACH MEASURE)

County	Per Capita Income	Property Per ADA	% Rural
Adair	1572.00 (5)	14076.34 (5)	100.0 (1)
Alfalfa	2592.00 (2)	155118.25 (1)	100.0 (1)
Atoka	1810.00 (5)	28718.36 (4)	68.4 (2)
Beaver	2698.00 (1)	272143.38 (1)	100.0 (1)
Beckham	2360.00 (3)	55174.10 (2)	36.1 (5)
Blaine	2175.00 (4)	75833.63 (1)	70.1 (2)
Bryan	2144.00 (4)	35145.99 (4)	56.5 (3)
Caddo	1959.00 (4)	57035.82 (2)	77.3 (2)
Canadian	2664.00 (1)	45096.66 (3)	18.9 (5)
Carter	2345.00 (3)	30156.84 (4)	44.1 (4)
Cherokee	1845.00 (5)	18812.60 (5)	60.1 (3)
Choctaw	1845.00 (5)	26147.42 (5)	56.0 (3)
Cimarron	2730.00 (1)	130965.94 (1)	100.0 (1)
Cleveland	2859.00 (1)	25421.02 (5)	16.6 (5)
Coal	1701.00 (5)	41164.63 (3)	100.0 (1)
Comanche	2569.00 (2)	22992.16 (5)	11.3 (5)
Cotton	2814.00 (1)	65005.91 (2)	59.9 (3)
Craig	2157.00 (4)	47486.41 (2)	60.3 (3)
Creek	2485.00 (2)	24814.63 (5)	48.2 (4)
Custer	2572.00 (2)	73514.94 (1)	28.3 (5)
Delaware	1867.00 (5)	25341.66 (5)	100.0 (1)
Dewey	2440.00 (2)	170555.25 (1)	100.0 (1)
Ellis	2456.00 (2)	152182.88 (1)	100.0 (1)
Garfield	2886.00 (1)	58006.84 (2)	19.4 (5)
Garvin	2540.00 (2)	40742.33 (3)	62.4 (3)
Grady	2434.00 (2)	13366.21 (5)	51.8 (4)
Grant	2268.00 (3)	196971.50 (1)	100.0 (1)

TABLE XXIV (Continued)

County	Per Capita Income	Property Per ADA	% Rural
Greer	1996.00 (4)	71355.44 (1)	49.1 (4)
Harmon	2178.00 (4)	58794.54 (2)	36.5 (5)
Harper	2476.00 (2)	191171.38 (1)	100.0 (1)
Haskell	1719.00 (5)	32400.04 (4)	100.0 (1)
Hughes	2062.00 (4)	32276.78 (4)	61.4 (3)
Jackson	2237.00 (3)	30534.06 (4)	25.0 (5)
Jefferson	2109.00 (4)	71297.00 (2)	100.0 (1)
Johnston	1655.00 (5)	24236.67 (4)	67.6 (3)
Kay	2888.00 (1)	59861.83 (2)	22.4 (5)
Kingfisher	2831.00 (1)	102364.00 (1)	68.6 (2)
Kiowa	2020.00 (4)	71910.19 (1)	62.6 (2)
Latimer	1737.00 (5)	32844.20 (4)	100.0 (1)
Leflore	1793.00 (5)	22337.69 (5)	68.4 (2)
Lincoln	2277.00 (3)	38900.54 (3)	73.6 (2)
Logan	2154.00 (4)	47123.00 (3)	51.3 (4)
Love	2018.00 (4)	57506.91 (2)	100.0 (1)
Major	2266.00 (3)	95889.44 (1)	62.2 (3)
Marshall	1745.00 (5)	42105.59 (3)	63.8 (3)
Mayes	1759.00 (5)	37787.79 (4)	69.7 (2)
McClain	2401.00 (3)	40538.84 (3)	70.6 (2)
McCurtain	2248.00 (3)	20243.84 (5)	68.9 (2)
McIntosh	2184.00 (4)	32469.20 (4)	75.8 (2)
Murray	2188.00 (4)	49800.71 (2)	51.7 (4)
Muskogee	2306.00 (3)	27670.81 (4)	37.3 (5)
Noble	2389.00 (3)	65114.66 (2)	43.9 (4)
Nowata	2405.00 (3)	36049.77 (3)	63.2 (3)
Okfuskee	1609.00 (5)	32350.14 (4)	73.0 (2)
Oklahoma	3288.00 (1)	38061.66 (3)	2.7 (5)
Okmulgee	2075.00 (4)	25994.77 (5)	39.3 (4)
Osage	2720.00 (1)	45252.01 (3)	69.7 (2)

TABLE XXIV (Continued)

County	Per Capita Income	Property Per ADA	% Rural
Ottawa	2482.00 (2)	27352.90 (5)	44.7 (4)
Pawnee	2454.00 (2)	60509.11 (2)	77.3 (2)
Payne	2473.00 (2)	41391.49 (3)	23.8 (5)
Pittsburg	2234.00 (3)	26177.53 (5)	49.9 (4)
Ponotoc	2500.00 (2)	40118.58 (3)	46.7 (4)
Pottawatomie	2366.00 (3)	24997.34 (5)	31.3 (5)
Pushmataha	1572.00 (5)	27534.48 (4)	71.4 (2)
Roger Mills	3809.00 (1)	112237.75 (1)	100.0 (1)
Rogers	2461.00 (2)	47299.75 (3)	68.1 (3)
Seminole	1939.00 (5)	33309.95 (4)	47.5 (4)
Sequoyah	1710.00 (5)	8729.12 (5)	78.7 (1)
Stephens	2609.00 (2)	33179.98 (4)	33.1 (5)
Texas	2840.00 (1)	124081.25 (1)	53.3 (3)
Tillman	2092.00 (4)	53838.66 (2)	50.2 (4)
Tulsa	3358.00 (1)	37921.34 (3)	6.1 (5)
Wagoner	2292.00 (3)	20820.02 (5)	67.4 (3)
Washington	3466.00 (1)	37233.46 (3)	20.8 (5)
Washita	2321.00 (3)	70144.94 (2)	73.1 (2)
Woods	2751.00 (1)	130772.00 (1)	37.7 (4)
Woodward	2728.00 (1)	61301.87 (2)	43.9 (4)

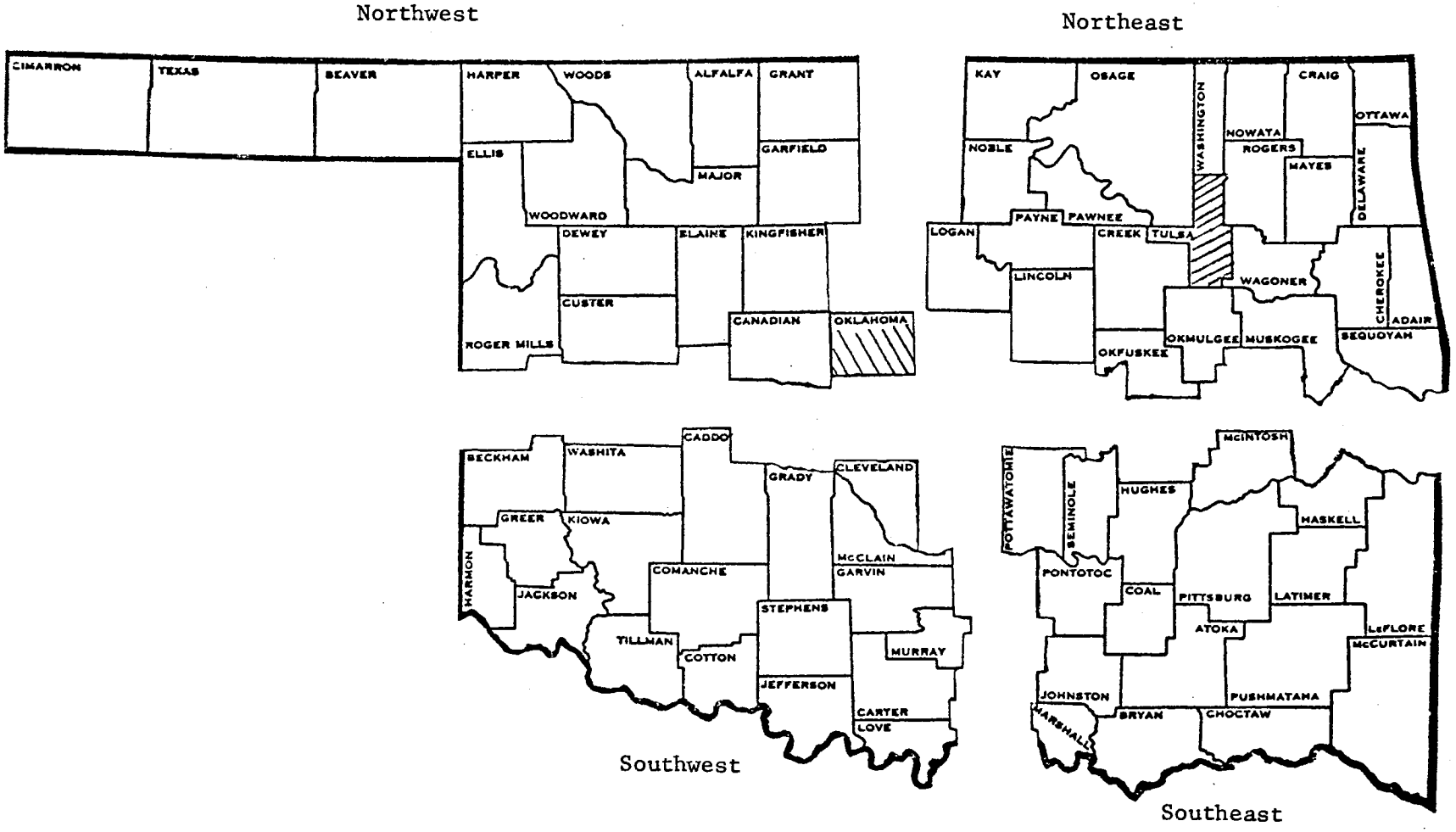

Figure 1. Division of the State By Area
(Oklahoma and Tulsa
counties are shaded areas)

VITA

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Master of Science

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