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The Foundation for Educational Choice
STATE RESEARCH

Tax-Credit Scholarships in Nebraska

Forecasting the Fiscal Impact

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Authors welcome any and all questions related to methods and findings. They take full responsibility for any unintentional errors or misrepresentations.

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Executive Summary

This study seeks to inform the debate over a proposal in Nebraska to give tax credits for contributions to organizations that provide scholarships to K–12 private schools. The study constructs a model to determine the fiscal impact of tax-credit scholarships on the state and on local school districts. We estimate the impact that tax-credit-funded tuition scholarships will have on the distribution of students between public and private schools in Nebraska by estimating the likely transfer of students from public to private schools depending on the average dollar value of scholarships. We use these estimates to model the impact tax-credit scholarships will have on state education aid to school districts and to calculate the break even rate of "transfer," or the number of public school students that would have to transfer from public to private schools in response to the scholarship program, in order to make the tax credit fiscally neutral from the perspective of Nebraska state government. We use district-level expenditure and enrollment data to estimate the percentage of expenditures that vary with changes in enrollment levels across school districts in Nebraska and compare the revenue and expenditure impacts of tax-credit scholarships on school districts to determine the net impact of tax-credit scholarships on district finances.

In addition to allowing Nebraska to expand educational opportunities to lower- and middle-income families and improving the equity of its education system, a tax-credit-funded scholarship program would generate fiscal benefits for local school districts, increasing the available resources for students who remain in public schools. Because much of their revenue does not vary with enrollment, school districts would retain much of the funding associated with students who use scholarships to transfer from public to private schools. The overall impact on public schools would be to increase the financial resources available per student. Depending on a few key program design elements, it could also result in fiscal savings to the state budget.

Key findings include:

- When students leave Nebraska public schools in significant numbers, local school districts experience reductions in expenses that are greater than the reduction in state aid. In addition, school district revenues from local sources do not decline when enrollments decline. Because expenses decline more than revenues when students leave public schools, there is a net gain of resources available to students who remain in the public schools equal to $7,765 per public school student using a scholarship.

- The total fiscal impact of a tax-credit scholarship program depends on the number and percentage of public school students who receive scholarships in relation to the number of private school students receiving scholarships. This in turn depends on a number of program design factors, including income eligibility levels, the size of the scholarships, and the total amount of available scholarship funding. The study uses data from the U.S. Census Bureau and other sources to estimate how public school families might respond to a tax-credit scholarship program with various design features.
- A scholarship program for current public school students that costs Nebraska $3 million in tax credits at 65 percent of the value of contributions to scholarship granting organizations (SGOs) will generate more than $4.15 million in available scholarship funds.
- In the first year of the program, just 951 public school students will have to participate in the program for it to break even, or have no cost to the state.
- If scholarship eligibility is set at 300 percent or below of federal poverty guidelines, and at least 67 percent of scholarships are awarded to public school students, the program will yield net fiscal benefits to Nebraska of between $2.4 and $37 million (depending on the average value of scholarships) if scholarship values average less than $3,750. At scholarship values averaging $4,250, the program would cost the state $3.9 million over 10 years.
- If 80 percent of private school scholarships are awarded to current public school students, then fiscal benefits to the state peak at $51 million over 10 years at scholarship values of $1,750. With 80 percent of scholarships going to public school students, the program generates fiscal benefits to the state over 10 years at all scholarship values.
- Raising the income eligibility for scholarships always increases the fiscal benefit of the program because more public school students would be eligible for scholarships, to enroll in private schools and eligibility is increased most among income groups that have the highest propensity to transfer from public to private schools.
- A tax-credit scholarship program is a more efficient way to direct dollars to education than increasing state aid. Nebraska data show that every dollar of increased state aid to schools produces only an additional 47 cents of school spending because school districts respond to the state spending increase by reducing local spending on education. By contrast, every dollar spent on a tax-credit scholarship program is a full dollar that goes to education.

Introduction

Proposals to increase educational opportunities and choices for students of different backgrounds, abilities, needs, and economic circumstances are increasing throughout the country. In part, this reflects increasing support among the public for the concept of school choice; a majority of U.S. citizens now support it.[1]

In Nebraska, substantial majorities favor school choice. A 2009 opinion poll found that 55 percent of Nebraska voters support tax-credit scholarships for students to attend private schools, and a similar percentage support school vouchers. Majorities of Democrats, Republicans, and Independent voters support both tax-credit scholarships and vouchers for private schooling, with support increasing to higher levels when scholarships are awarded based on financial need.[2]

Families with children in grades K–12 in Nebraska may exercise constrained school choice:

- About 38,000 school-age children in Nebraska attend private schools.[3]
- About 6,100 Nebraska students are home-schooled.[4]
- Nebraska is one of only 10 states without charter school laws.

Highly constrained school choice exists in Nebraska, and the rest of the country, based on family mobility and choosing a place of residence. Because higher-quality schools often are found in communities with higher housing prices, this form of school choice is unaffordable to many families. Throughout the United States, the more affluent a family the greater is their ability to choose the schools they prefer for their children. Nebraska families in particular tend to sort themselves among schools and school districts largely on the basis of parents' income and education. If tuition assistance is made available directly to parents, we would likely see less residential segregation on the basis of parental income and education.

This study uses empirical methods and the tools of economic analysis to examine school choice in Nebraska. Empirical analyses allow us to find analytical answers to important policy questions outside the hardened positions of support or opposition that come from viewing school choice simply

as a matter of political leanings or ideological principle. Perhaps believing it inappropriate to discuss education in terms of market incentives and pressures, many well-meaning individuals who are deeply concerned about K–12 education ignore, on principle, the educational impacts of market forces and how they influence the behaviors of families and schools. Very limited school choice occurs even in the absence of official or legislatively-enacted school choice policies. Unfortunately, the market for K–12 education without universal school choice contains significant imperfections that prevent many families from being able to send their children to the schools that best meet their needs.

Our analysis begins with a brief discussion of how Nebraska funds elementary and secondary education. We examine the demographics of public and private schools in Nebraska and estimate the impact on public and private school enrollments of a program that provides tax credits for donations to support private school scholarships. We also develop a model that shows how the expenditures of Nebraska school districts vary with changes in student enrollment, and we show the fiscal impacts of a school choice program on Nebraska's state budgets and those of local school districts.

How Nebraska Funds Public Schools

The expense of educating children in Nebraska is a responsibility shared primarily between the state and local governments, with the state providing about 33 percent of the funds used to educate children in local public schools, according to the National Center for Education Statistics. In April 1990, the Nebraska Unicameral Legislature enacted LB 1059, the "Tax Equity and Educational Opportunities Support Act" (TEEOSA). TEEOSA had two primary objectives. First, it sought to equalize property tax burdens in support of public schools. Second, it sought to bring about more equity in educational opportunities for students and among districts. Because property tax relief was a major underlying objective, LB 1059 included both sales and income tax increases to help fund the new equalization formula. Beginning with LB 1059, total state aid to schools increased dramatically in the 1990s in an effort to shift funding away from property taxes. TEEOSA's indicated that it sought to achieve and maintain a state support level of 45 percent of the general fund operating expenditures of school districts, but the goal has not been met.

The amount of state funding each Nebraska school system receives is determined by using a

complex set of calculations. The largest source of state aid is determined on the basis of a foundation-type formula with equalization that distributes funds on the basis of school district funding needs (determined using a system of student weights in relation to the local fiscal capacity to generate revenues to pay for schools). The formula contains a stabilization feature that puts collars on the magnitude of change in state aid that a local school system can experience from year to year. This basic state aid accounted for 73 percent of the state funds distributed to school systems. Nebraska also provides funding for special needs students that comprises about 14 percent of the total state funding for local systems. Another 19 categories of state aid provide funds to local systems, with none comprising more than 4 percent of the total of state aid.

The Nebraska legislature has periodically amended the provisions of the state's funding formula, but the emphasis has been to strengthen the equalizing effects for schools that need the state funding most. In May 1997 the Nebraska legislature enacted LB 806 which significantly amended TEEOSA to calculate state aid at the system level. As in many states, the fiscal condition of state government, rather than any formula-determined need, often determines how much state funding is available for distribution to school districts. States determine how much school aid they can afford and then adjust aid formulas to the level of funding available. In 2009, LB 545 was enacted into law, for the purpose of reducing the growth rate of state aid distributed to school districts over the next several years.

Nebraska School Funding Varies with Enrollment

The relationship between enrollment levels and school funding is a question of particular importance for determining the fiscal impact of school choice programs. Funding from different sources responds to changes in enrollment in different ways. While a majority of school funding that comes from the state varies with enrollment, local school funding does not. In 2007–08, at least 73 percent of state support for public schools was calculated on the basis of enrollment. It thus varies as a district adds or loses students and also according to the weights assigned to each student. Categorical aid and other aid (a combined $290 million) do not vary, or only indirectly vary, with enrollment. [5] Because a high percentage of state education funding in Nebraska is distributed without the restric-

tions that accompany categorical or narrow-purpose grants, Nebraska's funding formula provides a good deal of spending flexibility for local districts.

Taxes on real property are the primary source of local revenue for school districts. These revenues are determined by local property values and tax rates. In the short term, enrollment does not affect local revenue. Over time, it is possible that enrollment changes may prompt adjustments to local revenues but more often local revenues do not decline even as enrollments do.

Some revenues from federal sources are affected by enrollment levels, but even they are calculated on the basis of complex formulas that include provisions that result in funding not varying directly with enrollments. Federal funds for special needs students are distributed through the Individuals with Disabilities Education Act (IDEA). This law contains a grant formula that depends on the number of students in a district identified as receiving special needs services and the statewide average spending per student. However, districts are guaranteed to receive at least 85 percent of their prior-year allocation even if the number of eligible students declines. Finally, each state, regardless of size, is guaranteed to receive at least a certain minimum share of the total appropriation. As a result of these hold-harmless and small-state provisions, the amount of money a school district ultimately receives is only very loosely related to the actual number of students in that district identified as having special needs.

For the sake of this analysis, we will assume that 15 percent of a district's per-student IDEA funding will go away when a special needs student leaves a Nebraska public school to attend a private school. This is the most conservative assumption we can make because a district is guaranteed to receive at least 85 percent of its prior year funding even if its number of special needs students declines. Because federal funding for schools is dispersed across a large number of funding streams, it is difficult to determine the exact percentage of federal funding that varies with enrollment.

Table 1 uses 2007–08 funding levels as reported by the Nebraska Department of Education. The table shows that, for each student, the state provides an average $3,639 in education aid. Of the $3,639, about 73 percent, or $2,643, is directly responsive to changes in enrollment levels. The latter amount has risen substantially to $3,155 per student for the 2010 school year, and was scheduled to rise even more over the next few years. Education aid is typically the first or second largest

expense of state governments, and because of the fiscal stress experienced by state governments everywhere, many are looking for ways to curtail growth in education spending.

In 2008, Nebraska's state and local governments combined to budget more than $2.5 billion for K-12 education, and more than $8,500 per student. Table 1

Nebraska public school revenue (2008)

	Amount	Per Student	Percent
State Funding Based on Enrollment	$769,472,001	$2,643	72.6%
State Categorical Aid	$289,932,420	$996	27.4%
Total State Sources	$1,059,404,421	$3,639	38.6%
Local Sources	$1,447,345,132	$4,972	52.7%
Federal Sources	$239,360,488	$822	8.7%
Total	**$2,746,110,041**	**$9,433**	**100.0%**

Note: For the 2010 school year, state funding based on enrollment is equal to $3,155. Categorical aid is determined, at least to a degree, by enrollment. Special needs funding is one example where state aid is both a function of the number of students and the cost of serving them. In order to conservatively estimate the amount of state funding that a tax-credit scholarship program would save the State of Nebraska, we consider only the "basic state aid" as funding that is determined by enrollment.

Source: Author's calculations. Nebraska Department of Education, *Annual Financial Report Statewide Totals* (2007-08).

In Nebraska, concerns about rapidly rising TEEOSA payments (from $769 million in 2007–08 to an expected $1.2 billion in 2012–13[6]) led lawmakers to propose legislation that would limit the formula-based growth in the state basic aid program. Nevertheless, based on the legislative fiscal estimate and forecast changes in enrollments, the per-pupil aid that varies with enrollment is expected to reach $3,787 by 2012–13, even with passage of legislation to curtail growth in state aid.

For the 2007–08 school year, when a new student entered a school district, the district received on average $2,643 in additional state funding (for 2009–10 this amount is $3,155). Conversely, when a student left a district, state per-student funding was reduced by $2,643 on average, with the district retaining $996 in state funds. State law places limitations on the amount of growth in district spending and in local source funding that a district may raise from year to year, but it also protects districts with stagnant or declining enrollments from having to reduce the local source revenue. Thus the entire $4,972 from local sources remains available to local school districts when a student leaves the district.[7] In the long run, all revenue is at least potentially variable with enrollment, with the exact extent dependent upon the decisions of local school boards and those that approve their budgets. However, these figures give an accurate picture of how revenue changes with enrollment in the shorter term.

Table 2 further illustrates how school revenues are affected by enrollment declines. The table shows how Nebraska's total and per-student school district revenues would have been affected if enrollment declined by 10,000 students in the 2007–08 school year and had been 281,099 rather than the actual figure of 291,099 students.

The table shows that, compared to actual revenues for the 2007–08 school year, the decline of 10,000 students would lower total district revenues by $26.4 million, but per-student revenues would actually increase by $242 per student. Even in an unrealistic scenario where all federal and state categorical revenues varied directly with enrollment, per-student revenues would still increase by $177 because local funding does not vary with enrollment.[8]

Despite less overall revenue collection, a 10,000 student enrollment decline would lead to more funding per student—more than $200 in additional funds per student. Table 2

Change in Nebraska school district revenues resulting from a decline in enrollment (from 291,099 students to 281,099 students)

Revenue Source	Amount	Change from Actual 2007-2008 Revenue	Per Student	Change Per Student
State Funding Based on Enrollment	$743,038,657	($26,433,344)	$2,643	$0
State Categorical Aid and Equalization	$289,932,420	$0	$1,031	+$35
Total State Sources	$1,032,971,077	($26,433,344)	$3,675	+$35
Local Sources	$1,447,345,132	$0	$5,149	+$177
Federal Sources	$239,360,488	$0	$852	+$30
Total	**$2,719,676,697**	**($26,433,344)**	**$9,676**	**+$242**

The implications of this analysis are:

- Under the current system of Nebraska public school funding, a decline in local district student enrollments (while resulting in a decline in total revenues) actually produces a slight increase in the resources available for each student who remains in the district.
- Because local school funding does not vary with enrollment in the short term, a loss of students cannot result in lower per-student revenues being available to school districts.
- Smaller public school enrollments can result in large savings for the state without reducing the per-student revenues available to local school districts.
- Nebraska could, as an alternative to realizing savings from enrollment declines, choose to use some or all of the savings in education aid to fund other educational programs or education reform initiatives.

As long as the revenue loss associated with each student who leaves a school district is lower than the amount by which total school district expenditures are reduced when a student leaves, a local school district cannot be made worse off financially by the loss of a student. The loss of $2,643 on average (2007–08) in state funds, along with perhaps a small amount of federal funds, is lower than the expenditures attributed to each child.

School Expenditures Vary with Enrollment

Evaluating the fiscal impact of enrollment changes on Nebraska school districts requires not only an understanding of how state education aid to districts is affected, but also some estimate of how expenditures of school districts change in response to enrollment changes.

When students leave a school district, the district loses state aid associated with those children, but expenditures associated with educating children also decline. One criticism of school choice is that the loss of students is not accompanied by a corresponding decrease in expenses. While that may be true in the very short term (less than one school year) or with very small enrollment changes, the conclusion that expenditures can never decline when enrollments drop produces logically and empirically implausible conclusions. Increasingly, studies have demonstrated that local school district expenditures are sensitive to declines in enrollment.

Using detailed school district data from the Nebraska Department of Education, we employed an econometric approach to estimate the variable expenditures associated with educating each student in Nebraska. We used detailed school district financial data from all districts for the 1997–98 and 2006–07 school years to determine what current expenditures (all expenditures less capital expenditures and debt service) are variable (that is, responsive to the addition or loss of students in a district) and to what extent they are fixed. For this study we considered variable expenditures to be expenditures that are variable over a period of at least a year. This analysis will test the expectation that school districts can and do adjust their expenditures to reflect enrollment levels from one year to the next.

The difficulty in estimating marginal costs

There is no publicly available data for all school districts in Nebraska that allows for a true estimation of the marginal cost of educating each additional student. Research on education finance generally uses expenditures or revenues as synonymous with "costs," but these measures do not reflect costs in a traditional economic sense. However, our procedure for estimating variation in expenditures does provide more of an empirical basis for estimating the expenditure impact related to educating each student in the short run than is typically used in education funding research.

We developed simple linear regression models to estimate the expenditure structure of public schools in Nebraska. After testing several models, we identified the model with the strongest ability to describe how the expenditures of public schools vary according to changes in enrollments, while controlling for other key variables that may influence changes in expenditures. It is expressed by the following equation:

$$ChngExpend = \alpha + ChngEnroll + MedInc + CurrExpend + ChngStRev + PctMinority + \varepsilon$$

Where:

α = constant

ChngExpend = real (inflation-adjusted 2007 dollars) change in district current expenditures 1997–2007

ChngEnroll = change in district enrollment 1997–2007

MedInc = median household income in the school district

ChgStRev = real (inflation-adjusted 2007 dollars) change in state education aid 1997–2007

CurrExpend = current expenditures in 2006–2007 school year

PctMinority = percentage of minority students in the district

ε= error term

This model estimates that the variable expenditures associated with educating each additional public school student in the 2006–07 school year were $7,254, or 73 percent of the $9,969 mean expenditure per student across all districts.[9] There are, however, large differences in esti-

mated variable expenditures depending on the size of school districts. Small school districts have a lower percentage of expenditures that are variable (about 54 percent) and thus would experience smaller reductions in expenditures as students leave the district, while the largest school districts have much higher variable expenses (about 84 percent) associated with each student (lower fixed expenses per student) and would see greater declines in required expenses as students leave a district. This result is expected, as larger school districts have a greater number of students across which to spread fixed expenditures, lowering their average cost per student.

Our model explains 96 percent of the nominal change in school district expenditures between the 1997–98 and 2006–07 school years. The data for this analysis are at the school district level, and, as a result, enrollment changes over the years examined are much larger than those that occurred in individual schools within districts. These results are not meant to imply that an increase or decline in a single or small number of students in a school would necessarily lead to increases or decreases in school expenditures of $7,254 per student in a single year. But in larger numbers and across districts, over time, expenditures are highly responsive to enrollment changes.

Because the change in expenditures associated with each student who enters or leaves Nebraska's public schools is greater than the state education aid per student, the loss of students from a school district would have a net positive impact on local school district finances. In the 2006–07 school year, the loss of a student from a district would mean the loss of about 28 percent of revenues associated with that student (about $2,643 in state education aid), leaving a majority of the remaining $6,790 in per-student revenues in the district. At the same time, the district would see a decrease in expenditures of $7,254. Thus, at least in the short run, school districts are financially better off. Even if enrollment declines resulted in the loss of all categorical state aid (an unrealistic scenario) and all federal aid (similarly unrealistic), each district still would retain $4,972 per student in local revenues.

Each year thousands of school children transfer between school districts; individual districts lose and gain students; and over time, local districts adjust their expenditures to accommodate these changes. Our analysis of U.S. Census Bureau data suggests that about 10 percent of Nebraska school-age children in 2009 live in a different home or apartment than they did in 2008.[10] This implies that about 28,000 public school students change residences each year, and it is likely that

a significant percentage of those who move do so in a way that requires changing school districts. Even if the movement of students out of one school district is partially offset by movement into the district, the net change in enrollment on an annual basis is likely to far exceed the number of students who would participate in any recently proposed tax-credit scholarship program in Nebraska. School districts in Nebraska are subject to annual enrollment changes greater than would occur under a tax-credit scholarship program. Our analysis shows that concerns over the potential fiscal impacts of school choice on local school districts not only are overstated, but they fail to understand the fundamental local district fiscal effect of expanding school choice in Nebraska: an increase in the resources available for each student who remains in the school district.

Changes in enrollment are the strongest predictor of changes in school district expenditures. Table 3

Expenditure model

Variable	Standardized Coefficient	Unstandardized Coefficient	Standard Error
Current Expenditures	.40**	7.880E-02	(.008)
Enrollment Change	.33**	7253.8	(574.8)
State Revenue Change	.29**	.465	(.052)
Median Income	.05**	38.721	(13.6)
Percent Minority	.04*	1464072.6	(6545329.1)
Constant	—	-1075893.2	(596002.9)
N	200	200	200
Adjusted R^2	.96	.96	.96

* Significant at .05 level
** Significant at .01 level

Note: Results reported here are from an ordinary least squares regression on 200 school districts in Nebraska with at least 200 students, and which did not undergo fundamental changes in composition (combining with or splitting from another school district that would dramatically affect enrollments). Coefficients for independent variables represent the change in expenditures for each one unit change in the associated independent variable and standardized coefficients represent the change in the dependent variable (expenditures)—measured in standard deviations—for each one standard deviation change in the associated independent variable. All monetary variables are expressed in real, inflation adjusted, 2007 dollars.

State Education Aid Affects Local Education Expenditures

Developing a time-series database of state and local education finance variables allows us to examine and understand the impacts of enrollment changes and other important issues regarding education finance. There are at least three important and related education finance questions that may influence an evaluation of any program to expand the education options available to Nebraska families:

- How does state education aid affect the aggregate level of local expenditures?
- How does state education aid affect different expenditure categories?

- How does state education aid affect the equitable provision of education services across local districts and among children across and within districts?

Each dollar of additional state aid increases school expenditures by only 47 cents

Increases in state education aid do not necessarily result in corresponding increases in educational expenditures by school districts. Local school districts can respond to an increase in state aid by reducing the local tax burden for education or by shifting local expenditures from education to non-educational categories without either reducing tax collections or increasing education expenditures.[11]

We included a variable measuring the real, inflation-adjusted change in state education aid to each school district in our analysis of Nebraska spending data. As the model in Table 3 shows, results indicate that changes in state education aid are strong and significant predictors of real changes in district education expenditures, but between 1998 and 2007 each additional dollar of state education aid is associated with only 47 cents of additional education spending in public schools. This figure is close to national estimates and is well above the 40 cents found in a recent study of New Hampshire education finance.[12] These results are also not surprising given that a primary objective of TEEOSA was to reduce reliance on property taxes (suggesting more state aid could translate into lower local revenue collections rather than more education spending). Nevertheless, increasingly, advocates for school finance reforms have based their arguments in state courts on a desire for increased spending on education (adequacy arguments) rather than on equity in funding among districts (equalizing resources without necessarily increasing overall spending). Our results offer a cautionary note regarding the inefficiencies associated with efforts to increase local education spending by increasing state aid to local school districts.

The legal requirement that state education aid be used for education spending is easy to meet without actually increasing local education budgets. Districts can simply move the same number of local tax dollars out of the school budget as the number of state dollars that come into the school budget. A district that reduces education expenditures by $1 million when it accepts an additional $1 million in state education aid has complied with the legal requirement to spend state education aid on education. The district could spend the $1 million in new state funding on education while spending $1 million in

local tax revenue—which it would have raised for education in the absence of the state aid—for other local services, in which case education spending would not increase and taxes would not be lowered, but spending on other local services would increase. Or it could simply reduce local taxes by $1 million, in which case taxes would be lowered, while spending on both education and other local services would not increase. As our results and those of other researchers indicate, the most likely outcome of additional state education aid is a combination of increases in education and non-education spending, and tax relief.

These findings and those in prior sections of this study support at least three important conclusions that are relevant to an evaluation of a tax-credit scholarship program:

- Because each dollar of additional state education aid, on average, translates into about 47 cents of additional local spending on education services, the current system of education finance is a relatively inefficient method of increasing educational services and opportunities for Nebraska students.
- By contrast, education funding that provides scholarships for students to attend schools would result in $1 of educational expenditures for each $1 of funding (if administrative expenses for the program are counted as educational expenditures, as are administrative expenses in the public school system). Moreover, when a tax credit is awarded for just 65 percent of an individual's or business's contributions to SGOs, Nebraska gets $1 of educational services at a cost of only 65 cents. Thus Nebraska is able to purchase twice as much in educational services for its children ($1 in a tax-credit scholarship program compared to 47 cents when state aid to schools is increased) at two-thirds the cost (65 cents for each $1 under a scholarship program compared to $1 for only 47 cents of education services under school aid). For those most concerned with creating equitable educational opportunities across schools and districts, tax-credit scholarships are thus a more efficient mechanism for directing expenditures for education and for providing increased educational opportunities than is increased state education aid.
- Because the reduction in school district revenue associated with declines in enrollment is less than the variable cost of educating students, school districts cannot be made financially worse (over periods of more than one year) by the loss of students to a scholarship program. This point will be discussed in greater detail later in this study.

Demographics of Nebraska's School-Age Children

Nearly three out of five students (58.9 percent) in Nebraska's public schools reside in families at or below 300 percent of federal poverty guidelines. Poverty guidelines are based on income in rela-

tion to family size, and as Table 4 shows, a family of four could earn up to $66,150 in 2009 and still be at 300 percent of federal poverty guidelines.

The federal poverty level for a family of four is about $22,000. Table 4

Federal poverty income guidelines (2009)

Family Size	Federal Poverty Level, Income	300% x Federal Poverty Level
1	$10,830	$32,490
2	$14,570	$43,710
3	$18,310	$54,930
4	$22,050	$66,150
5	$25,790	$77,370
6	$29,530	$88,590
7	$33,270	$99,810
8	$37,010	$111,030

We used Nebraska data from the U.S. Census Bureau's *American Community Survey* (2006–08) to estimate the number of school children in Nebraska in families at or below 300 percent of federal poverty guidelines. Our results indicate that over 165,000 students ages 5–17 in K–12 public schools live in families at or below 300 percent of federal poverty guidelines and another 17,000 students qualify in private schools (see Figure 1).

Characteristics of public and private school children in Nebraska

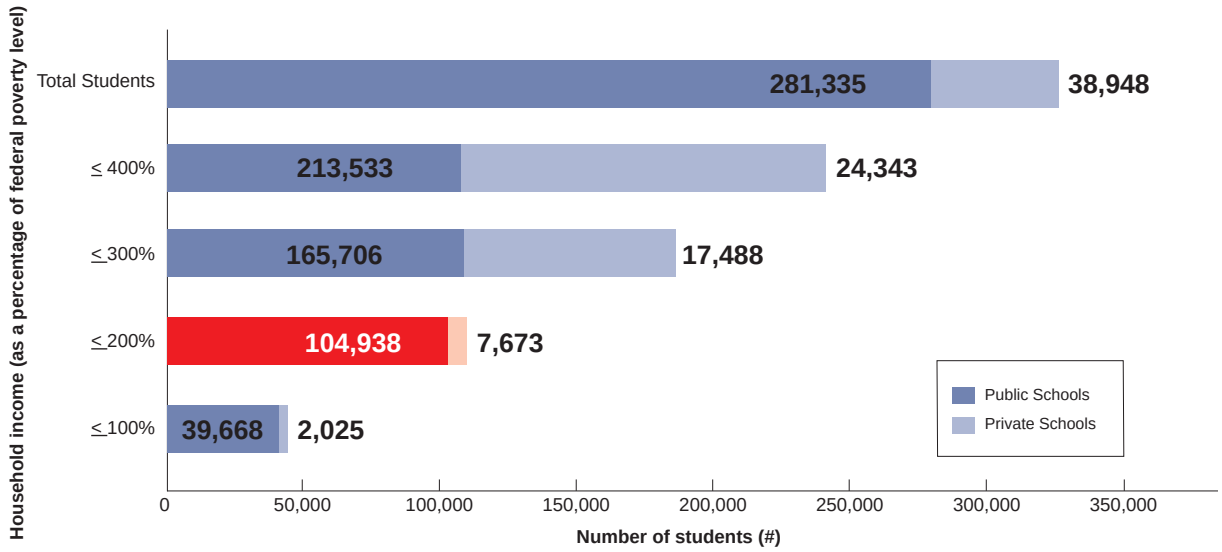
According to the Nebraska Department of Education, about 11 percent of Nebraska K–12 school-age students attend private schools or about 13 percent when children who are home-schooled are included. In the absence of a universal school choice program, parents will largely exercise school choice by choosing to live in communities that best match their preferences for educational services or by paying to have their children attend private schools. One result of the absence of a universal choice program is that families and school children segregate themselves along lines of income, parental education, and race and ethnicity.

- The percentage of children in private schools in Nebraska is at about the U.S. average, but among white and Hispanic students, the rate is slightly higher than the U.S. average. Compared to the U.S. average, a smaller percentage of African-American children in Nebraska attend private schools (see Figure 2).

- About 18 percent of students in Nebraska public schools come from families with an annual income below $25,000, compared to just 8 percent of students in private schools. Figure 3 shows the income distribution of both public and private school students in Nebraska.

About 60% of public school students and nearly half of private school students meet scholarship eligibility at 300% of federal poverty level. Figure 1

Household income (as percentage of federal poverty level) by number of students (#)



Source: Author's analysis. U.S. Census Bureau, *American Community Survey* (2006-2008), data for Nebraska.

The demand for private schooling in Nebraska increases significantly as family income increases (see Figure 4), suggesting an income elasticity of demand for private schooling of approximately 0.5 at lower income levels and more than 1.0 at high income levels. Income elasticity refers to the change in demand for private schooling that occurs with each percentage-point change in family income. An elasticity of 0.5 indicates that if family income doubled (an increase of 100 percent), there would be a corresponding increase in private school attendance of 50 percent.

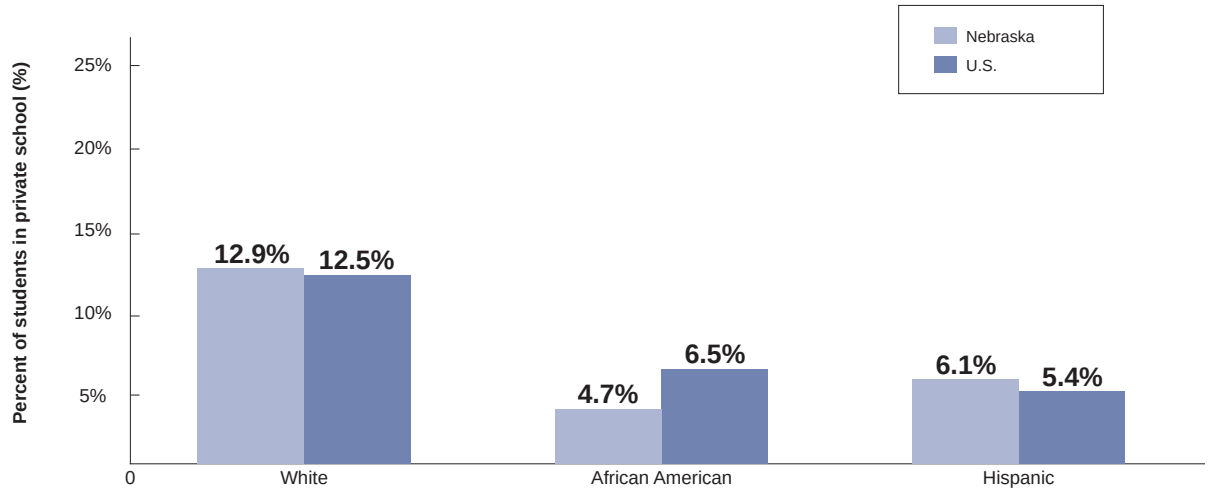
Together, these data suggest that:

- There are substantial economic and racial differences in the composition of public versus private schools in Nebraska, indicating a difference in the ability of parents to choose private schools for their children.
- The rate of private school enrollment among Nebraska middle- to higher-income families compared to enrollment among lower-income families suggests that a large percentage of Nebraskans view the public schools as a less attractive option for educating their children and that family income strongly influences the ability of families to exercise their preference for educational services.

Nebraska's minority students are currently less likely to attend private schools.

Figure 2

Percent of students in private school (%) by race/ethnicity

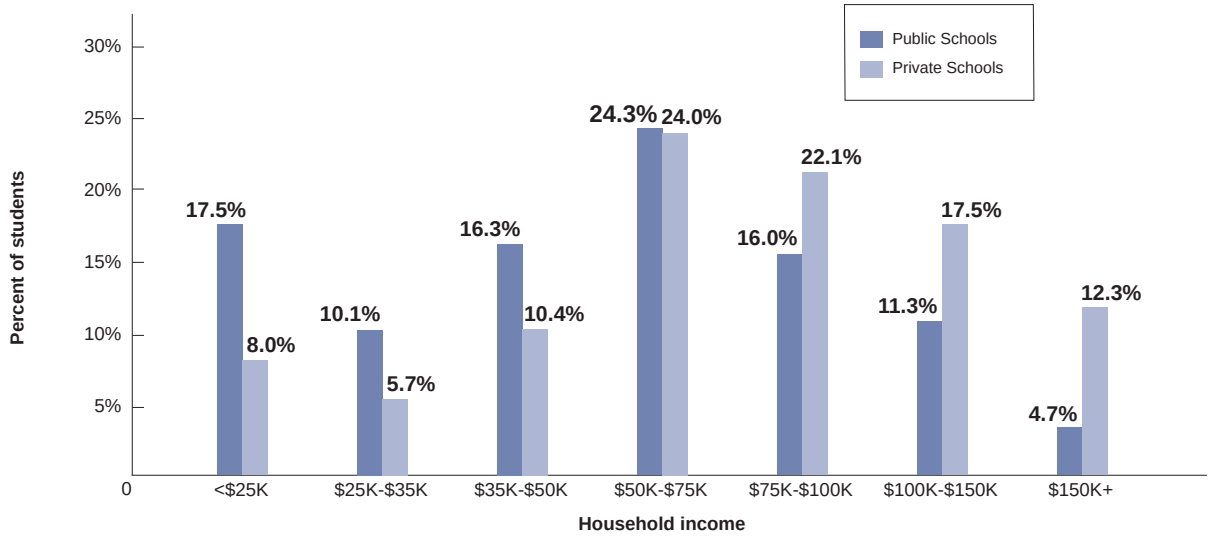


Source: Author's analysis. U.S. Census Bureau, *American Community Survey* (2006-2008), data for Nebraska.

In Nebraska, type of school attendance household correlates with income.

Figure 3

Percent of students (%) by household income and school type

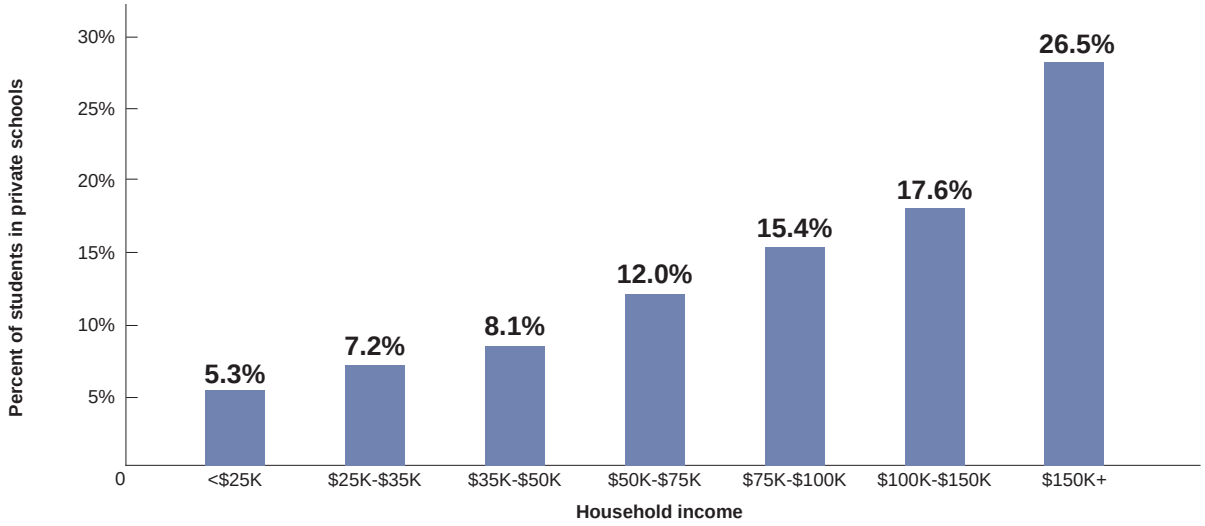


Source: Author's analysis. U.S. Census Bureau, *American Community Survey* (2006-2008), data for Nebraska.

- Without increased efforts to introduce more school choice programs, the significant segregation along income and other lines that is apparent in Nebraska schools will likely continue.

Household income affects educational choices. Figure 4

Percent of students in private schools (%) by household income



Source: Author's analysis. U.S. Census Bureau, *American Community Survey* (2006-2008), data for Nebraska.

Proposals to Increase Educational Options and Opportunities

Along with economic, demographic, and other factors, the perceived quality of public schools influences the demand for private schooling in a state and a community. Our review of the demographics of Nebraska's public and private schools suggests that, like most states, there is dramatic separation of students along income and racial lines in Nebraska. At the same time, the demand for private schooling by lower-income and minority students likely is not satisfied, largely because of the income constraints these families are more likely to face.

Nebraska could achieve a number of important fiscal and educational objectives by increasing the options parents have for educating their children. Tax-credit scholarships are one method of increasing the options parents have for educating their children. Proposals for such scholarships have risen, in part, in response to concerns about the quality of public schooling and the rising demand for private schooling created by those concerns.

Nebraska is considering proposals to allow a tax credit to individuals and businesses for contributions made to organizations that provide tax-credit scholarships to students who want to attend private school. Under one recent proposal, tax credits would be given to individual and corporate

taxpayers equal to 65 percent of the dollar amount of their contribution, with caps on credits of $2,500 for individual taxpayers, $5,000 for married couples filling joint tax returns, and credits for business taxpayers capped at $5,000 for non-corporate businesses (partnerships, limited liability companies, and Sub-Chapter S corporations) and $10,000 for corporations. Total tax credits available to corporate and individual contributors to SGOs under this proposal would be limited to $3 million. For this amount of tax credits to be claimed, a total of $4.6 million in contributions to SGOs would have to be made.[13] The proposal allows up to 10 percent of contributions to SGOs to be used for administration of the organizations, meaning that the net amount of contributions available for scholarships that will result from issuing $3 million in tax credits will be about $4.15 million.[14]

Another way to describe the proposed tax-credit scholarship program is that it will allow Nebraska to leverage the interest and desire of individuals and businesses to improve educational opportunities and to pay only 72 cents for every one dollar of educational services that the tax credits provide for Nebraska's school children.

Our analysis of tax-credit scholarships considers the extent to which the program will induce children currently in (or planning to attend) Nebraska's public schools to transfer to private schools. During the 2007–08 school year, the state paid about $3,639, or about $2,643 in basic formula-based state aid, for each pupil in the public schools. For 2010 basic state aid is expected to be about $3,155. For tax-credit-funded scholarships to be fiscally neutral or better for the state budget, they must induce enough students to transfer from public to private schools so that savings in state per-student education aid equals or exceeds the tax revenue foregone because of tax credits.

Forecasting the impact of Nebraska's proposed tax-credit scholarship program requires that we predict how parents will respond to the availability of scholarships. To estimate the number of students who would receive scholarships and attend private schools, we examined the size of the school-age population in public and private schools, the characteristics and differences of the populations, and how those differences likely would affect the demand for scholarships. We analyzed the interactive effects between the volume of scholarship funds available, the average dollar value of individual scholarship awards, the total number of scholarship awards, the percentage of scholarships that are awarded to public school students and those currently in private schools, and the impact

the transfer of public school students to private schools would have on public school enrollments and finances in Nebraska.

Estimating Program Participation Levels

With the proposed tax credit, businesses and individuals can choose to pay taxes to be used for general state services or they can contribute to a scholarship granting organization (SGO) to provide scholarships for students enrolling in private schools. When businesses or individuals make a contribution to the tax-credit program, they directly target the use of their tax dollars to support education. Given this choice, many businesses and individuals can be expected to contribute to the program. With the proposed tax credit, Nebraska increases educational expenditures in a way that does not occur when state education aid is increased. As we noted earlier, each additional dollar of state education aid increases school expenditures, on average, by only 47 cents. With a tax-credit scholarship program, scholarships funded by tax credits would result in $1 of educational expenditures at a cost to state government (in the form of foregone tax revenue) of just 73 cents. For many businesses and individuals, the ability to target their funding to educational expenditures would be an attractive option.

Several states offer some type of tuition tax credit or deduction to assist families who want to send their children to private schools. Minnesota, Iowa, and Illinois offer a direct tax credit or deduction to parents sending their children to private schools. Arizona, Florida, Pennsylvania, Iowa, Rhode Island, and, most recently, Georgia offer credits to individuals or corporations that contribute to organizations that provide private school scholarships. The experience of these states is directly relevant to the Nebraska proposal.

By donating to SGOs and receiving a tax credit in return, individuals and businesses contribute to Nebraska's public good in an amount equal to what they would have paid had they not contributed to the scholarship organization. Thus, total payment to the public good of Nebraska by individuals and businesses is not lowered by the tax credit program; rather, contributors to scholarship organizations ensure that their payments go directly to support the education of Nebraska students. In addition, the funds contributed to scholarship organizations purchase a larger overall increase

per dollar in educational services compared to increased expenditures on state education aid.

In states such as Florida and Pennsylvania, the opportunity to direct tax payments to scholarship programs proved to be a powerful incentive for businesses to contribute, and in each state the initial caps placed on the total amount of business tax credits were reached in the first year of the program. Each state subsequently increased the total allowable tax credits.

The experience of other states clearly indicates that we can reasonably expect businesses to contribute up to the maximum amount allowed by the cap, $3 million, in the first year. There are many reasons Nebraska may want to provide a tax credit for businesses that contribute directly to educating Nebraska's children. Doing so would:

- Establish a convenient and consistent mechanism and incentive for businesses to contribute directly to educating Nebraska's children.
- Target educational expenditures directly to families and children rather than institutions that may reduce the amount of resources that go directly to students.
- Direct resources to students most in need of educational options and least likely to benefit from general increases in school district budgets.
- Give businesses a meaningful and easy way to address their concerns about the quality of public education and its impact on business and the Nebraska economy.

Tuition prices strongly influence demand for private schools

The impact that a tax-credit scholarship program would have on public and private school demographics in Nebraska, as well as on state and local finances, depends on the dollar amount of contributions, the decisions of scholarship organizations, and the response of families of children in public and private schools to the availability of scholarships. These are difficult to forecast. Program design elements and eligibility criteria will combine to influence the participation of Nebraska families.

To estimate the response of Nebraska families to the availability of tax-credit scholarships, we developed a model of the demand for private schooling that allows the manipulation of key policy variables and program design elements. Some of the variables are:

- Income-eligibility requirements for program participation.

- Average dollar value of tax-credit scholarships.
- Expected price elasticity of demand for private schooling according to income level.
- Percentage of scholarships that go to public school students versus students currently enrolled in private schools.

Tax-credit scholarships lower the price of private schools for students who receive them. A number of studies have estimated the increase in demand for private schooling as a result of changes in the price of the schools. The most widely cited studies of the impact of changes in the price of private schools on demand (the price elasticity of demand) indicate that the demand for private schools increases as the price to families declines (and the demand decreases as the price rises), a so-called negative price elasticity. The range of estimates between these studies is large, however. Chiswick and Koutroumanes (1996) estimate a price elasticity of about –0.5, suggesting that a 10 percent decline in the price of private schools would lead to a 5 percent increase in demand, while Gwarntey and Stroup (1997) estimate a price elasticity of –1.1, suggesting that a 10 percent decline in the price of private schools would lead to an increase in demand of 11 percent.[15] In Georgia, a 1994 study estimated the elasticity of demand for private schooling in rural school districts to be –1.07.[16] Most recently, Gruber, Dynarski, and Li (2009) use a detailed methodology that employed strong controls for non-price factors that influence the demand for private schooling along with information on multi-child discounts offered by Catholic schools to estimate the price elasticity of demand for private schooling. Their results suggest that the price elasticity of demand for private schooling increases among middle- and lower-income families, with the price elasticity of demand among lower-income households at –.59, compared to just –.09 for high-income households, indicating that private school scholarships are most likely to induce lower-income households to switch to private schools:

> "The results . . . indicate that families with the *highest* predicted probability of private school attendance are the *least* sensitive to price. . . . These elasticities are statistically distinguishable from each other. These results suggest that a voucher program would disproportionately induce into private schools those who, along observable dimensions such as race, ethnicity, income and parental education, are *dissimilar* from those who currently attend private school. This is in marked contrast to the assumption made in previous studies (e.g., Figlio and Stone; Lankford and Wyckoff) that the new students that vouchers would induce into private school would look demographically *similar* to current private school students."[17]

Both the participation rate and fiscal impact of a scholarship program would be strongly influenced by the dollar value of the scholarships. To demonstrate the effect of changing the dollar value of scholarships, we consider a range of scholarship values from $1,250 to $4,250.

The number of scenarios and program design combinations is nearly infinite. Our purpose is to create an understanding of how design elements would affect program participation and ultimately the fiscal impact of the program, not to recommend one particular design. For Nebraska families, a scholarship with a value of $1,500 would represent a 28 percent reduction in the estimated average 2010 private school tuition of $5,270.[18] To estimate program participation, we calculated the reduction in price that scholarships of various dollar values would have on the average price of tuition and applied different price elasticities of demand to the distribution of school-age children in public and private schools according to their family income and demonstrated pattern of private and public school attendance in Nebraska.

Figure 5 presents our estimate of participation in a scholarship program in Nebraska at different scholarship values if the income eligibility for scholarships was set at family income at or below three times the federal poverty guidelines (300 percent of poverty) and if the dollar value of scholarships did not vary according to family income. Using a conservative estimate of the price elasticity of demand for private schooling (–.50), the chart shows that as many as 7,700 public school students, or about 3 percent of K–12 students, would seek to participate in a scholarship program. Using less conservative estimates of price elasticity (–1.0), similar to those found in other studies, demand would increase to over 14,000, or about 6 percent of K–12 public school students. In addition to demand from public school students, it is assumed that all eligible private school students would likely seek to take advantage of the program. Without a solid empirical basis for estimating the percentage of eligible private school students that will seek scholarships, we assume all who are eligible will apply and will compete with public school students for available scholarships. In reality, a significant number of eligible private school students already receive some level of scholarship or subsidy, and these students will be less likely to seek scholarships.

Figure 5 assumes that eligibility for scholarships is available to children in families at or below 300 percent of federal poverty guidelines. However, a scholarship program in Nebraska might choose not

to restrict eligibility, or it might place different restrictions for students currently enrolled in private schools—by means testing or in some other manner. For fiscal reasons that will be highlighted later in this study, it is beneficial for the state to make as many public school children eligible for scholarships as possible to encourage maximum transfer from public to private schools. Depending on the dollar value of scholarships, means testing or a reduction in the value of scholarships as income rises can have a negative effect on the fiscal impact of a tax-credit scholarship program.

Demand for scholarships increases with scholarship value. Figure 5

Estimated demand for scholarships by average scholarship value

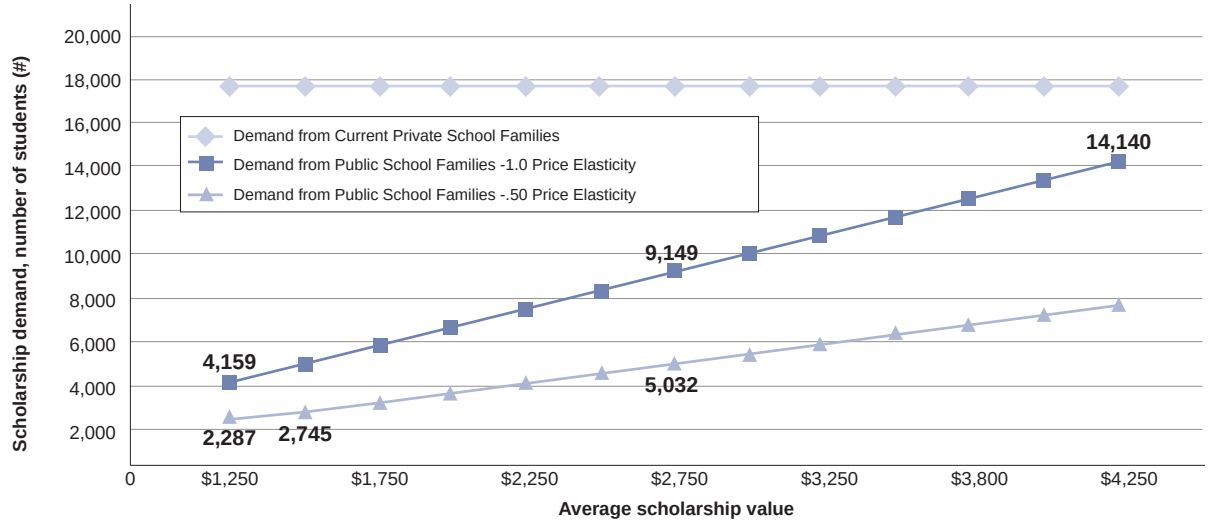


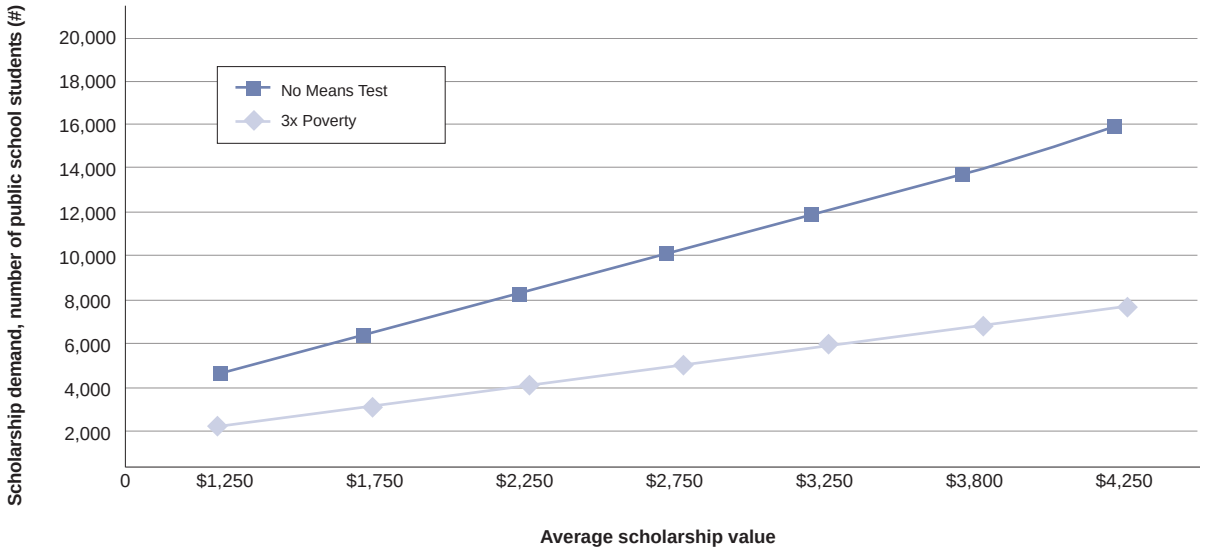
Figure 6 shows the impact on estimated demand for scholarships among public school students if eligibility is not means tested. The chart shows that demand for scholarships among public school families is doubled if scholarships are made available without means testing for eligibility.

A restrictive means test (say setting eligibility at income levels at or below poverty) can dramatically reduce program participation because fewer public school families are eligible. As we document in subsequent sections of this study, reducing eligibility among public school families can result in lower fiscal benefits (or even fiscal losses) for the program. Thus, more restrictive means testing does not improve the fiscal impact of a program. On the other hand, restricting eligibility for participation among students currently attending private schools would yield more fiscal benefits to the state than if restrictions were applied to public school families. Because the decision to attend private schools already has been made by those stu-

dents, Nebraska would receive no fiscal benefit (in the form of reduced state education aid payments) from increasing their eligibility. The primary effect of restricting the eligibility of current private school students would be to reduce the competition for scholarships and increase the fiscal benefits to the state.

Means testing for scholarship eligibility dramatically impacts the eligibility and demand for scholarships. Figure 6

Public school student scholarship demand by dollar level of eligibility average scholarship value

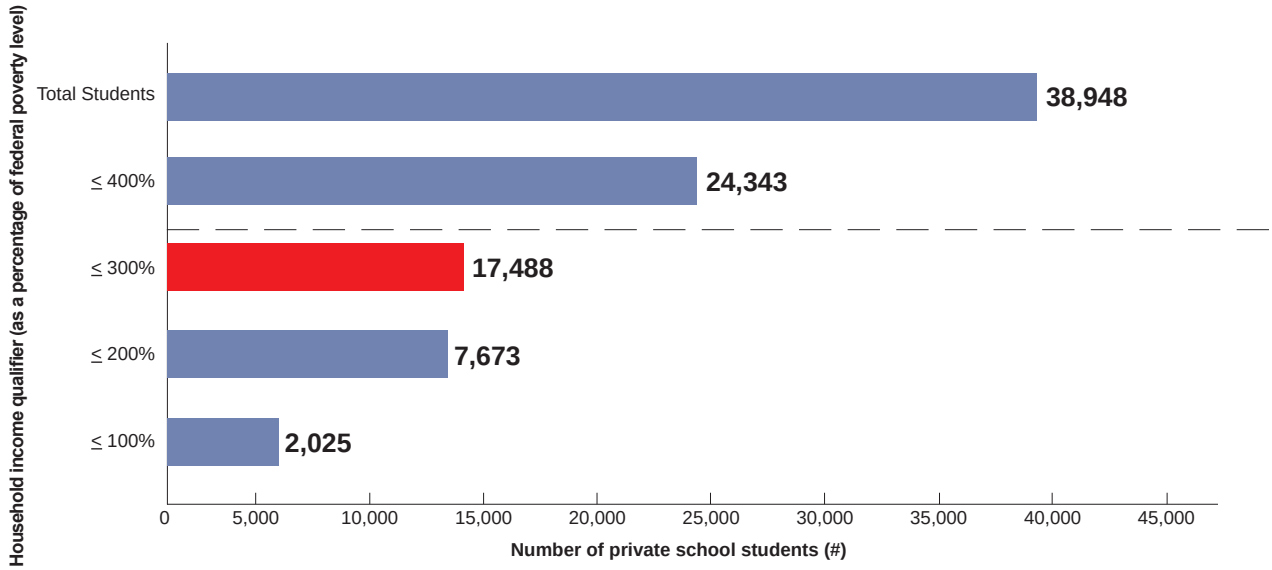


That said, there is no justification for reducing or denying one group of citizens a benefit that is available to others simply because of where they chose to educate their children. This is especially true for lower-income families who may have made tremendous sacrifices by enrolling their children in private schools to obtain the educational services they believe are best for their children. Nevertheless, restricting eligibility via means testing is an option in program design.

Figure 7 shows how eligibility for scholarships among private school students is affected by means testing based on multiples of eligibility for the federal free or reduced-price lunch program. For example, if private school students' participation is limited to students from families with incomes less than three times the federal poverty level, more than half of private school students are eliminated from eligibility, while low-income families are not discriminated against simply because they made sacrifices to have their children educated in a school of their choosing prior to enactment of a scholarship program.

Less than half of private school students (45%) will qualify for scholarships if eligibility requires household income to be less than 300% federal poverty level. Figure 7

Household income qualifier (as a percentage of federal poverty level) by number of private school students



Source: Author's analysis. U.S. Census Bureau, *American Community Survey* (2006-2008), data for Nebraska.

Combining supply and demand models to estimate the number of scholarships

Current proposals in Nebraska call for a small tax-credit scholarship program that would make $3 million in tax credits available to fund scholarships. The experience of other states suggests that the number of scholarship applicants (i.e., demand) would be greater than the available number of scholarships. Although demand may not exceed the supply of scholarships in the first year, as it may take some time to develop full public awareness of the program, the small scale of the proposed Nebraska program virtually assures that demand will exceed the supply of scholarships soon after adoption.

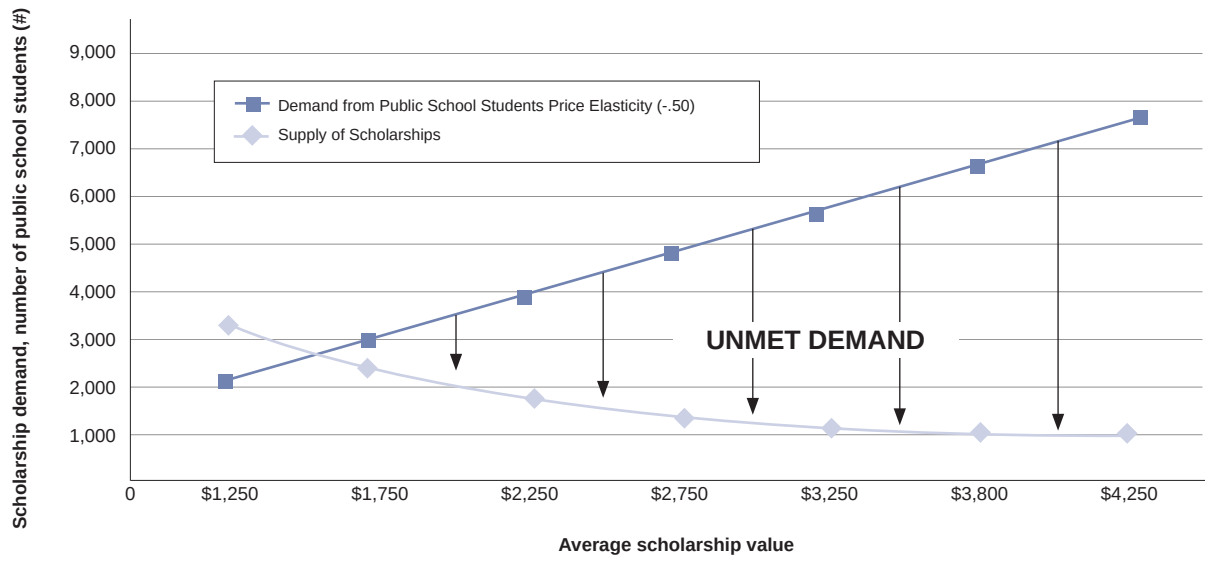
In addition, current proposals do not allow for any inflationary increase in the amount of tax credits available, and over time, this means that the capped amount will be able to fund fewer scholarships each year if the average value of scholarships rises, as expected, with the cost of education. We have estimated that the average private school tuition in Nebraska is $5,270, and a scholarship of $3,000 would reduce tuition by 57 percent on average. Using a low, conservative estimate of price elasticity of –0.50, a 57 percent decline in private school tuition should increase demand for private schools by about 5,490 students currently enrolled in Nebraska public schools or about 11,000 if eligibility

among public school families is not limited to families at or below 300 percent of federal poverty. At the same time, scholarship funds would be limited to approximately $4.15 million,[19] meaning that only 1,385 scholarships would be available. That is about 25 percent of the demand for scholarships among public school families and only about 13 percent of demand if eligibility is not restricted by income.

Figure 8 highlights the relationship between the demand for scholarships and their supply at scholarship values ranging between $1,250 and $4,250 using a conservative price elasticity (–.50) and where eligibility is limited to families at or below 300 percent of federal poverty guidelines. This chart highlights the important relationships between the total amount of scholarship money available, the average size of scholarship awards, and program eligibility. These variables, along with the decisions of scholarship organizations, are difficult to model, but they will determine the fiscal impact of the program. They are discussed more thoroughly in the following sections.

Among public school families, demand increases as the scholarship value increases, but the supply of scholarships decreases. Figure 8

Number of private school students by average scholarship value



Program tradeoffs

A tax-credit scholarship program could be constructed in various ways to yield important fiscal, educational, equity, and social objectives. A high-dollar-value scholarship does the most to attract

low-income students to participate in a scholarship program but would reduce the number of scholarships available. Conversely, relatively low scholarship values would provide many more scholarships but would reduce overall program participation among the low-income families who need educational options the most. Limiting participation to the lowest-income public school students would dramatically reduce overall demand for scholarships and reduce fiscal benefits while targeting the program to low- and middle-income children.

These sorts of tradeoffs are inherent in all important public policies, and school choice programs are no exception. The analyses and tools in this study are designed to make clear the impact of key program design variables and to highlight the tradeoffs they imply.

Table 5 presents the cumulative distribution of projected scholarship demand by income for scholarship values ranging from $1,750 to $4,250 using our most conservative price elasticity of demand (meaning the price-reducing impact of tax-credit scholarships will have a relatively modest effect on demand). As has been noted, our analysis suggests that scholarships would induce a higher rate of public school transfer if the value of scholarships is increased and means testing for program eligibility is less restrictive.

Scholarship demand, among public school students, is estimated to nearly double if a 300% (federal poverty level) means test is not required. Table 5

Public school student scholarship demand by scholarship value dollar level of eligibility
(low price elasticity of demand scenario, –.50)

	Average Scholarship Value										
Income Eligibility (% of Poverty)	**$4,250**	**$4,000**	**$3,750**	**$3,500**	**$3,250**	**$3,000**	**$2,750**	**$2,500**	**$2,250**	**$2,000**	**$1,750**
Up to 300%	7,777	7,319	6,953	6,405	5,947	5,490	5,032	4,575	4,117	3,660	3,202
Above 300% (no Means Test)	15,537	14,623	13,892	12,795	11,881	10,967	10,053	9,139	8,226	7,312	6,398

Table 6 translates the estimates of scholarship demand in Table 5 into the context of the public school population and shows that, at an average scholarship value of $4,250, about 6 percent of public school students would seek scholarships if no income limits were established for scholarship eligibility. Lower scholarship values and means testing of eligibility would have substantial impacts on scholarship demand.

A tax-credit scholarship program may stimulate demand by as much as a fivefold increase depending on average scholarship values and eligibility requirements.

Table 6

Percentage scholarship demand among public school students by income eligibility (low price elasticity of demand scenario, –.50)

Income Eligibility (% of Poverty)	Average Scholarship Value $4,250	$4,000	$3,750	$3,500	$3,250	$3,000	$2,750	$2,500	$2,250	$2,000	$1,750
Up to 300%	2.74%	2.58%	2.45%	2.26%	2.10%	1.94%	1.77%	1.61%	1.45%	1.29%	1.13%
Above 300% (no Means Test)	5.48%	5.16%	4.90%	4.51%	4.19%	3.87%	3.54%	3.22%	2.90%	2.58%	2.26%

Table 7 shows the cumulative percentage of scholarship demand that can be satisfied with tax-credit scholarships if $3 million of tax credits were allocated to scholarship organizations and all scholarships go to public school students (an unrealistic scenario unless restrictions are placed on private school student eligibility). The table shows that, if tax credits are limited to $3 million (making at least $4.15 million in scholarships available), a tax-credit scholarship program could satisfy demand for scholarships among public school students only if the average value of scholarships is relatively low (reducing demand and increasing the number of scholarships available), and more restrictive income criteria are used. At scholarship values of $1,500 and below and eligibility restricted to families at no more than 300 percent of poverty, demand would be low enough for the supply of scholarships to equal or exceed demand if we assume a low price elasticity of demand. By increasing average scholarship values to at least $1,750, or increasing income limits, demand for scholarships will increase and will result in demand far exceeding supply. In addition, as we demonstrate later in this study, the program may well result in a net financial saving for Nebraska, but restricting eligibility and lowering scholarship values below a certain point can reduce demand enough to result in a net fiscal cost to the state to implement the program.

Our research and prior studies on the price elasticity of demand for private schooling highlight several key points about tax-credit scholarship program design:

- Families with higher incomes would participate at rates higher than those of lower income even with lower scholarship values (higher income families are less price-sensitive)
- The demographic mix of participants would shift more to higher-income families in the ab-

sence of income-eligibility requirements unless higher value scholarships are offered.

- At the same time, imposing strict income requirements for participation would make it unlikely that public school students would make full use of the scholarships at lower scholarship values, and the full fiscal benefits of the program to the state would not be realized.

It is estimated that a $3 million program size will satisfy only a portion of the public school student demand for scholarships. Table 7

Percentage scholarship demand among public school students satisfied by a tax-credit scholarship program capped at $3 million budget and if all scholarships are awarded to public school students (low price elasticity of demand scenario, –.50)

	Average Scholarship Value										
Income Eligibility (% of Poverty)	**$4,250**	**$4,000**	**$3,750**	**$3,500**	**$3,250**	**$3,000**	**$2,750**	**$2,500**	**$2,250**	**$2,000**	**$1,750**
Up to 300%	13%	14%	16%	19%	21%	25%	30%	36%	45%	57%	74%
Above 300% (no Means Test)	6%	7%	8%	9%	11%	13%	15%	18%	22%	28%	37%

These results highlight the need for balance in designing a program. Attending to a single program objective to the exclusion of other objectives may result in a reduction of the overall educational and fiscal benefits of the program. The final sections of this study will turn the projection in the preceding tables and charts into estimates of the fiscal impact of a tax-credit scholarship program for the state and for local school districts.

Fiscal Impact on the State

The most important factors in determining the fiscal impact of a scholarship program are the degree to which scholarships induce students attending or planning to attend Nebraska's public schools to transfer to private schools and at what expense. During the 2007–08 school year, Nebraska state government paid about $3,639 (about $2,643 of which is directly tied to enrollment changes) in education aid to school districts for every student enrolled in public school. In 2010, the amount of state aid that varies directly with enrollment is expected to be $3,155. Scholarships will save money for the state to the extent that they induce students to transfer from public to private schools at a low enough cost (less than $3,155) in foregone tax revenue to generate savings in state per-student education

aid. The ability to induce transfer from public to private schools at a cost lower than $3,155 is made easier by the fact that tax credits are awarded for just 65 percent of the value of contributions to SGOs. Thus if we found that at scholarship values of $3,155, students would transfer from public to private schools, the program would not be fiscally neutral; rather, it would create a net fiscal benefit for the state because the state would be foregoing only $2,024.75 in revenue ($3,155 contribution times 65 percent) in order to fund a scholarship that would save the state $3,155.

The fiscal analysis is complicated, however, by the need to absorb costs associated with providing scholarships at a cost of foregone tax revenue (tax credits) to students currently in or planning to attend private schools. These are students for whom the state does not realize a saving in state education aid when they participate in a scholarship program, despite the cost of providing them tax-credit-funded scholarships. Adding this variable to the fiscal equation suggests that the percentage of scholarships that go to students in public schools must be high enough and at a cost low enough to generate state aid savings for Nebraska to offset the cost of scholarships going to students who generate no savings for the state.

Inducing sufficient public-to-private-school transfer to result in fiscal savings (because the reduction of state education aid payments offsets the cost of the scholarships) can be accomplished easily. When scholarships to current private school students are added to the equation, designing a program to induce enough transfer from public schools at a low enough scholarship value to offset the cost of scholarships provided to current private school students is more complex. Figure 9 shows the number of students who would have to transfer from public to private schools in order for Nebraska to break even with a scholarship program capped at $3 million in annual tax credits.

The chart shows that in school year 2010–2011, a total of 951 students would have to transfer from public to private schools, at an average savings of $3,155 in state education aid, for the program to break even ($3,155 x 951 = $3,000,405). Figure 9 also shows that the number of students that need to transfer from public to private schools for the state to save money declines each year because the program is capped at $3 million in tax credits and state aid per pupil is expected to rise annually (we use 5 percent for this graphic), producing greater savings to the state for each student who leaves public schools.

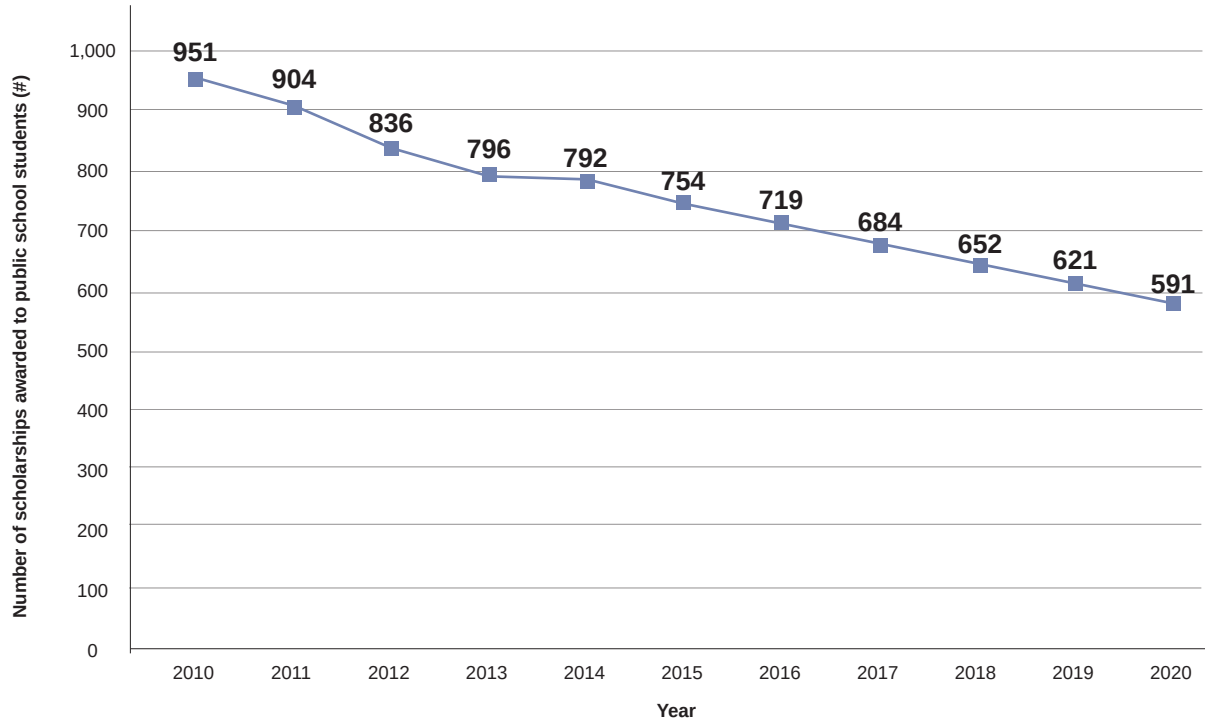
Our analyses indicate that even relatively low scholarship values (lower than the current per-student state education aid) can induce relatively high rates of participation and transfer from public

to private schools if eligibility for scholarships is not severely limited to the lowest-income families. However, as noted, lower scholarship values would reduce the percentage of participants who come from lower-income families.

Under a recent legislative proposal, Nebraska's fiscal break even point starts at 951 public school students, and then substantially decreases over time.

Figure 9

Number of scholarships awarded to public school students (#) by year



The percentage of scholarships that must go to students transferring from public to private schools in order for Nebraska to break even varies by scholarship value. This is a difficult point to articulate but an important one to grasp in understanding the fiscal impact of the program. When scholarship values are lower, more scholarships are available and the ability of the program to provide enough scholarships to public school students to reach the break even number of migrating students can be achieved even if a lower percentage of scholarships are awarded to public school students. As an example, in 2009–2010 we estimated that 951 scholarships would have to go to migrating public school students for the state to break even on the program. If the average scholarship value is $2,250, then 1,846 scholarships can be awarded with a $3 million tax credit program that

makes $4.15 million in scholarships available. Thus just over half of the 1,846 scholarships would need to go to public school students for the program to break even. If the average scholarship value is $3,500, however, only 1,187 scholarships will be available, and for the state to break even on the program, 80 percent of scholarships would have to go to current public school students (951/1,187 = 80 percent).

Figure 10 illustrates these points and also shows how the percentage of scholarships needing to go to public school students varies according to scholarship value in the "out years" of 2015 and 2020.

If the average scholarship value is $2,750 in 2010, about 63% of scholarships will need to go to public school students for the program to meet its fiscal break even point. Figure 10

Percent of students needed to break even (%) by average scholarship value

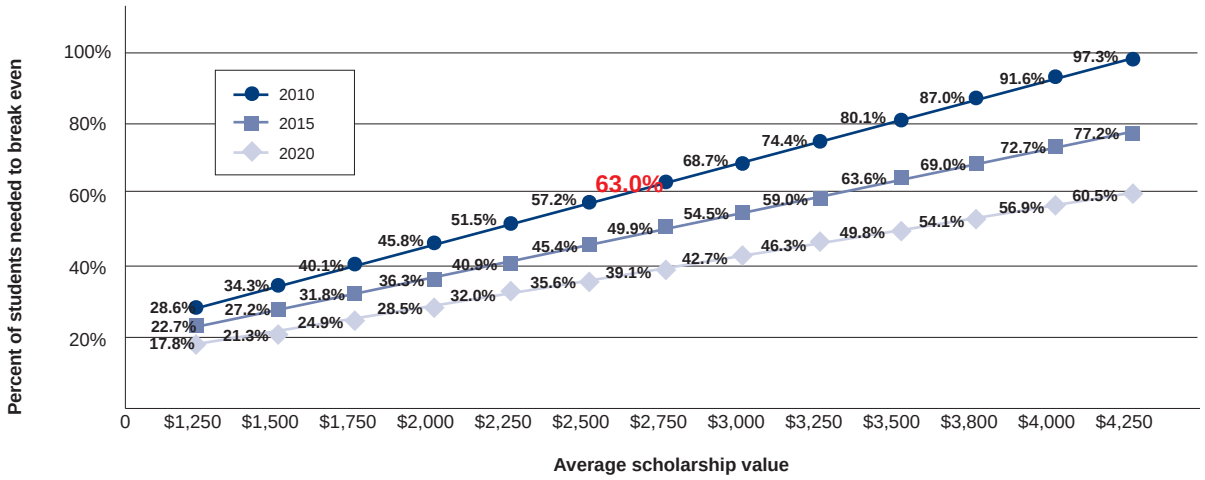


Table 8 highlights some combinations of scholarship program variables and the fiscal impacts they would have on the state under a scenario where:

- 67 percent of the scholarships are awarded to public school students, and 33 percent are awarded to private school students.
- The state realizes a reduction in education spending of $3,155 for each public school student who leaves.
- A total of $3 million in tax-credit scholarships are available, yielding available scholarship funds of $4.15 million.

Under this scenario, 951 public school students must participate in the program and transfer to

a private school for the state to break even—that is, for the costs of the tax credit to be offset by savings in state education aid.

If 67% of scholarships are awarded to public school students, we estimate a tax-credit scholarship program's overall net fiscal impact would produce up to $37 million in savings, over a ten-year period, as long as the average scholarship is about $1,750 per student.

Table 8

Net fiscal impact of scholarship program (in millions) by year and average value of scholarship

Scholarship Value	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
$1,250	$1.81	$1.88	$2.10	$2.16	$2.00	$2.07	$2.13	$2.20	$2.27	$2.33	$2.40	$23.36
$1,500	$2.78	$2.86	$3.12	$3.19	$3.00	$3.08	$3.16	$3.24	$3.32	$3.40	$3.48	$34.63
$1,750	$2.00	$2.25	$2.68	$2.97	$3.00	$3.30	$3.61	$3.94	$4.29	$4.47	$4.56	**$37.06**
$2,000	$1.37	$1.60	$1.97	$2.22	$2.25	$2.51	$2.78	$3.07	$3.38	$3.70	$4.03	$28.88
$2,250	$0.89	$1.09	$1.42	$1.64	$1.66	$1.90	$2.14	$2.40	$2.67	$2.95	$3.25	$22.00
$2,500	$0.50	$0.68	$0.98	$1.18	$1.20	$1.41	$1.63	$1.86	$2.10	$2.36	$2.62	$16.50
$2,750	$0.18	$0.34	$0.62	$0.80	$0.82	$1.01	$1.21	$1.42	$1.64	$1.87	$2.11	$12.00
$3,000	($0.09)	$0.06	$0.32	$0.48	$0.50	$0.67	$0.86	$1.05	$1.25	$1.46	$1.69	$8.25
$3,250	($0.31)	($0.17)	$0.06	$0.21	$0.23	$0.39	$0.56	$0.74	$0.92	$1.12	$1.33	$5.08
$3,500	($0.50)	($0.37)	($0.16)	($0.02)	($0.00)	$0.15	$0.31	$0.47	$0.64	$0.83	$1.02	$2.36
$3,750	($0.67)	($0.55)	($0.35)	($0.21)	($0.20)	($0.06)	$0.08	$0.24	$0.40	$0.57	$0.75	$0.00
$4,000	($0.81)	($0.70)	($0.51)	($0.39)	($0.38)	($0.25)	($0.11)	$0.04	$0.19	$0.35	$0.52	($2.06)
$4,250	($0.94)	($0.84)	($0.66)	($0.54)	($0.53)	($0.41)	($0.28)	($0.14)	$0.00	$0.15	$0.31	($3.88)

Table 8 demonstrates that many combinations of scholarship values and income eligibility would generate enough demand and provide a large enough supply of scholarships to generate fiscal benefits for the state. Assuming that 67 percent of scholarships go to public school students, the table shows that at average scholarship values below $3,000, the state realizes a small net fiscal gain in the first year that grows each year, eventually resulting in a 10-year net fiscal benefit of $12 million. Only at average scholarship values of $3,750 or more does the program not yield net fiscal benefits over 10 years. Fiscal benefits are maximized at $37 million over 10 years at scholarship values of $1,750 and reduced (but still positive) with lower scholarship values (because of insufficient demand), and higher values (because fewer scholarships are available for public school students), but in each case the program still yields substantial fiscal benefits.

To demonstrate the sensitivity of fiscal impacts to changes in the percentage of scholarships awarded to public school students, we present two additional tables. Table 9 uses the same scenario as in Table 8 except that it assumes 80 percent of scholarships will go to public school students. In this scenario, net fiscal benefits are realized over 10 years at all scholarship values even though initial years produce some net fiscal cost at the highest scholarship values. A scholarship value of $1,750 again maximizes fiscal ben-

efits but at $51 million when a higher percentage of scholarships are awarded to public school students.

If 80% of scholarships are awarded to public school students., we estimate a tax-credit scholarship program's overall net fiscal impact would produce up to $51 million in savings, over a ten-year period, as long as the average scholarship is about $1,750 per student.

Table 9

Net fiscal impact of scholarship program (in millions) by year and average value of scholarship

Scholarship Value	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
$1,250	$2.77	$2.86	$3.11	$3.19	$3.00	$3.08	$3.16	$3.23	$3.32	$3.40	$3.48	$34.59
$1,500	$3.93	$4.03	$4.34	$4.43	$4.20	$4.29	$4.39	$4.48	$4.58	$4.68	$4.77	$48.11
$1,750	$2.99	$3.30	$3.82	$4.16	$4.19	$4.55	$4.93	$5.32	$5.74	$5.95	$6.07	**$51.03**
$2,000	$2.24	$2.51	$2.96	$3.26	$3.29	$3.61	$3.94	$4.28	$4.65	$5.03	$5.43	$41.21
$2,250	$1.66	$1.90	$2.30	$2.57	$2.59	$2.87	$3.17	$3.47	$3.80	$4.14	$4.50	$32.97
$2,500	$1.19	$1.41	$1.77	$2.01	$2.03	$2.29	$2.55	$2.83	$3.12	$3.42	$3.75	$26.37
$2,750	$0.81	$1.01	$1.34	$1.56	$1.58	$1.80	$2.05	$2.30	$2.56	$2.84	$3.13	$20.97
$3,000	$0.49	$0.68	$0.98	$1.18	$1.19	$1.40	$1.62	$1.86	$2.10	$2.35	$2.62	$16.48
$3,250	$0.23	$0.39	$0.67	$0.85	$0.87	$1.07	$1.27	$1.48	$1.71	$1.94	$2.19	$12.67
$3,500	($0.00)	$0.15	$0.41	$0.58	$0.60	$0.78	$0.96	$1.16	$1.37	$1.59	$1.82	$9.41
$3,750	($0.20)	($0.06)	$0.18	$0.34	$0.36	$0.52	$0.70	$0.88	$1.08	$1.28	$1.50	$6.58
$4,000	($0.38)	($0.24)	($0.02)	$0.13	$0.15	$0.30	$0.47	$0.64	$0.82	$1.02	$1.22	$4.11
$4,250	($0.53)	($0.41)	($0.19)	($0.05)	($0.04)	$0.11	$0.26	$0.43	$0.60	$0.78	$0.97	$1.92

Table 10 shows an alternate scenario where the percentage of scholarships awarded to public school students is only 50 percent, meaning that the state saves per-pupil aid for only half the students receiving scholarships. Under this scenario, net fiscal benefits to the state over 10 years are realized when the average scholarship value is under $3,000 and maximum benefits reach $19.5 million over 10 years.

If 50% of scholarships are awarded to public school students, we estimate a tax-credit scholarship program's overall net fiscal impact would produce up to $19.5 million in savings, over a ten-year period, as long as the average scholarship is about $1,750 per student.

Table 10

Net fiscal impact of scholarship program (in millions) by year and average value of scholarship

Scholarship Value	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
$1,250	$0.61	$0.66	$0.82	$0.87	$0.75	$0.80	$0.85	$0.90	$0.95	$1.00	$1.05	$9.25
$1,500	$1.33	$1.39	$1.58	$1.64	$1.50	$1.56	$1.62	$1.68	$1.74	$1.80	$1.86	$17.69
$1,750	$0.74	$0.94	$1.26	$1.47	$1.49	$1.72	$1.96	$2.20	$2.46	$2.60	$2.67	**$19.52**
$2,000	$0.28	$0.45	$0.73	$0.91	$0.93	$1.13	$1.34	$1.55	$1.78	$2.02	$2.27	$13.38
$2,250	($0.09)	$0.06	$0.31	$0.48	$0.50	$0.67	$0.85	$1.05	$1.25	$1.46	$1.68	$8.23
$2,500	($0.38)	($0.24)	($0.02)	$0.13	$0.15	$0.30	$0.47	$0.64	$0.82	$1.02	$1.22	$4.11
$2,750	($0.62)	($0.49)	($0.29)	($0.15)	($0.14)	$0.00	$0.15	$0.31	$0.48	$0.65	$0.83	$0.73
$3,000	($0.82)	($0.70)	($0.51)	($0.39)	($0.38)	($0.25)	($0.11)	$0.04	$0.19	$0.35	$0.51	($2.08)
$3,250	($0.98)	($0.88)	($0.71)	($0.59)	($0.58)	($0.46)	($0.33)	($0.20)	($0.06)	$0.09	$0.24	($4.46)
$3,500	($1.13)	($1.03)	($0.87)	($0.76)	($0.75)	($0.64)	($0.52)	($0.40)	($0.27)	($0.13)	$0.01	($6.49)
$3,750	($1.25)	($1.16)	($1.01)	($0.91)	($0.90)	($0.80)	($0.69)	($0.57)	($0.45)	($0.32)	($0.19)	($8.26)
$4,000	($1.36)	($1.28)	($1.14)	($1.04)	($1.03)	($0.94)	($0.83)	($0.72)	($0.61)	($0.49)	($0.36)	($9.81)
$4,250	($1.46)	($1.38)	($1.25)	($1.16)	($1.15)	($1.06)	($0.96)	($0.86)	($0.75)	($0.64)	($0.52)	($11.17)

Fiscal Impact on Local School Districts

Table 11 shows the impact of a scholarship program on local school districts. As demonstrated earlier in this study, scholarship participants who leave the public schools would reduce per-student state aid to their local school districts, but local revenues that do not change with enrollments (those raised from property taxes and other local revenue sources) would remain unchanged. To maximize the estimated negative impact that the loss of funding will have on districts, we assume that all state and federal aid per capita is lost (the entire $3,639 per pupil in state and $822 in federal aid) and not just the aid that varies with enrollment (an unrealistic and pessimistic funding assumption).

A tax-credit scholarship program has a net positive fiscal impact on local school districts, ranging from $5 million to nearly $12 million per year, depending on average scholarship value (assuming 67% of scholarships are awarded to public school students, and there is a program eligibility requirement set at 300 percent federal poverty level for household income).

Table 11

Net fiscal impact of scholarship program on Nebraska's school districts

Scholarship Value	$4,500	$4,000	$3,500	$3,000	$2,500	$2,000
# of Scholarships	652	852	1,007	1,231	1,583	1,526
Loss of State Aid	($2,908,168)	($3,802,989)	($4,494,442)	($5,493,207)	($7,062,694)	($6,805,897)
Reduction in School Expenses	$4,728,952	$6,184,014	$7,308,380	$8,932,464	$11,484,597	$11,067,021
Net Change	$1,820,783	$2,381,024	$2,813,938	$3,439,257	$4,421,902	$4,261,123
Revenue Associated with Scholarship Students That Remains in Local Districts	$3,241,294	$4,238,615	$5,009,273	$6,122,444	$7,871,714	$7,585,501
Net Fiscal Impact for Students Who Remain in Public Schools	$5,062,077	$6,619,640	$7,823,210	$9,561,702	$12,293,616	**$11,846,625**
Impact per Scholarship	$7,765	$7,765	$7,765	$7,765	$7,765	**$7,765**

Meanwhile, the reduction in students would result in a reduction in variable expenses for school districts. In combination, these changes result in a net increase in the resources available for use in educating the students who do not participate in the program and remain in public schools.

Table 11 uses our baseline program assumptions, including 67 percent of scholarships will go to public school students, and applies them to a range of scholarship values to show how local district finances will be affected. The table shows that the combination of a reduction in expenses that is greater than the loss of state aid and the continued support of local revenues that remain in school districts even when students leave (here we assume that only local revenue remains and no federal revenue remains, which understates the amount of revenue that remains with the district) results in a positive fiscal impact to school districts. Each scholarship student produces a net increase in resources available to students who remain in the district of about $7,765. The per scholarship amount does not vary according to the size of the program, scholarship value, or the fiscal impact of the program on the state.

Conclusion

Our analysis indicates that school district revenues vary considerably based on enrollment levels but that expenditures also vary with enrollments. A number of variables will affect the fiscal impact of a tax-credit scholarship program, but there are many ways to structure such a program to yield fiscal benefits for Nebraska. Using conservative estimates of the price elasticity of demand for private schooling in Nebraska, we estimate that a tax-credit scholarship program will produce as much as $51 million in net benefits to the state over 10 years if a large percentage of scholarships go to public school students and $37 million if a moderate number of scholarships go to public school students. The potential net fiscal costs under the most adverse scenario (a low percentage of scholarships going to public school students and a high per scholarship cost) would at most be $11 million over 10 years. Our analysis suggests that a balance of fiscal interests and the desire to increase educational opportunities for those most in need can be achieved in a way that does not adversely affect local school districts and the per-student resources available to them but will instead increase the resources available to students who remain in public schools.

It is realistic to design a tax-credit scholarship program that will yield fiscal benefits. While some would produce limited costs, all would create greater educational choices and opportunities for students from all backgrounds and without adversely affecting students who participate in public schools.

Notes

[1] See the public opinion poll data collected in: *ABCs of School Choice, 2008-2009 Edition* (Indianapolis: Milton and Rose D. Friedman Foundation for Educational Choice, 2008).

[2] Paul DiPerna, *Nebraska's Opinion on K-12 Education and School Choice* (Indianapolis: The Friedman Foundation for Educational Choice, 2009).

[3] Nebraska Department of Education, *Statistics and Facts About Nebraska Schools, 2007–2008,* (Lincoln: Nebraska Department of Education, 2009).

[4] Nebraska Department of Education, *A Report on Participants in Nebraska Exempt Schools: 2008/09 School Year*, (Lincoln: Nebraska Department of Education, 2009).

[5] Although categorical aid is partially determined by enrollment levels, the amount of funding does not respond to changes in enrollment levels. As an example, special needs aid is a reimbursement for a portion of the actual cost of providing services to special needs students.

[6] Sandy Sostad, "Nebraska Legislative Fiscal Analyst Estimate of LB545", 2009.

[7] A very small and insignificant amount of local revenue (less than $4 million, or about $11 per pupil) is based on such things as tuition and transportation payments made by other districts and individuals and thus is technically based on enrollment.

[8] Cotton Lindsay, *Fiscal Impact of the Universal Scholarship Tax Credit Proposal* (Columbia: South Carolina Policy Council, 2004); *Estimating Demand and Supply Response to Tuition Tax Credits for Private School Tuition in Utah* (Logan: Utah State University, 2004); Susan Aud and Leon Michos, *Spreading Freedom and Saving Money: The Fiscal Impact of the D.C. Voucher Program* (Indianapolis: Milton and Rose D. Friedman Foundation for Educational Choice, 2004).

[9] This average differs from the $9,023 figure reported by the Nebraska Department of Education obtained by dividing total expenditures in the state by total enrollment (membership). For this analysis, it is more appropriate to use the average of each district's per-student expenditure. The effect of this treatment is to lower the calculated percentage of expenditures that vary by enrollment from 80 to 73 percent.

[10] Based on data from: U.S. Census Bureau, *Current Population Survey, March Supplements*, 2006–2008, data for Nebraska.

[11] For a more complete explanation of how this occurs, see Brian Gottlob and Daphne Kenyon, "Dollars Diverted: Taking a Hard Look at Education Finance Reform in New Hampshire," *State Tax Notes* 35 (2005).

[12] For a more complete explanation of how this occurs, see Brian Gottlob and Daphne Kenyon, "Dollars Diverted: Taking a Hard Look at Education Finance Reform in New Hampshire," *State Tax Notes* 35 (2005).

[13] $3,000,000 / .65 = $4,615,385

[14] $4,615,385 * .90 = $4,153,846

[15] Barry Chiswick and Stella Koutroumanes, "An Econometric Estimate of the Demand for Private Schooling," *Research in Labor Economics* 15 (1996): 209-237; James D. Gwartney and Richard Stroup, *Economics: Private and Public Choice* (8th Edition) (Dryden: South-Western College Publishing, 1997).

[16] Andrew Keeler and Warren Kriesel, "School Choice in Rural Georgia: An Empirical Analysis," *Journal of Agriculture and Applied Economics* 26 (1994): 526-534.

[17] Susan Dynarski, Jonathan Gruber, and Danielle Li, "Cheaper by the Dozen: Using Sibling Discounts at Catholic Schools to Estimate the Price Elasticity of Private School Attendance," (Chicago: National Bureau of Economic Research, 2009), Working Paper # 15461.

[18] To develop our estimate of the average price of private schooling in Nebraska, we used U.S. averages from the U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Private School Data File," 2003–04, inflated to estimated 2010 levels. Private schooling costs vary significantly across the country, as does public schooling. We adjusted the U.S. average cost of private schooling to an estimated Nebraska average by measuring the difference between the U.S. and Nebraska average elementary and secondary school teacher salary in private schools. Teacher salaries are the major expense of K–12 education, making teacher salaries a reasonable surrogate measure of price differences between Nebraska and the U.S. average.

[19] Tax credits of $3 million awarded at 65 percent of the value of contributions to SGOs equals $4.6 million in contributions, and if 10 percent of contributions are allowed to support program administration, then $4.15 million will be available to fund tax-credit scholarships.

About the Author

Brian J. Gottlob (bgottlob@poleconresearch.com) is the Principal of PolEcon Research. For 17 years Gottlob has analyzed economic, demographic, labor market industry and public policy trends for private sector, government and nonprofit organizations. He has extensive experience in developing econometric models and has completed studies on a range of economic, tax policy, energy, education, and health care issues in the states of New Hampshire, Virginia, Ohio, New Mexico, New York, Texas, Oregon, Michigan, Georgia, Mississippi, West Virginia and Illinois. Gottlob is a Senior Fellow at The Foundation for Educational Choice. He has an undergraduate degree in economics from the State University of New York and a graduate degree in public policy analysis from the University of New Hampshire.

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