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ADVANCING LIBERTY WITH RESPONSIBILITY BY PROMOTING MARKET SOLUTIONS FOR MISSOURI PUBLIC POLICY

THE FISCAL EFFECTS OF A TUITION TAX CREDIT PROGRAM IN MISSOURI

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EXECUTIVE SUMMARY

A tuition tax credit program has been proposed for Missouri to address education inequality among low-income families. The terms of this program would grant Missouri taxpayers a credit on their state income tax bills for contributions to scholarship-granting organizations (SGOs) — not-for-profit education groups that are recognized by the state. In turn, SGOs would use these contributions to provide private-school scholarships to grade-school students who meet eligibility criteria set by the Legislature. During the past decade, four states have implemented similar programs.

In this study, we show that other states have adopted education tax credit programs in order to help reduce inequality of educational access among low-income families, by making private-school alternatives much more affordable. The fiscal cost of a tuition tax credit program will depend on the number of parents who move their children from public schools to preferred private alternatives. This study assesses how the size of available scholarships would affect state educational spending at various levels of demand. Under the conditions we consider, a tuition tax credit program has the potential to save the state $7 million per year. Savings from a partial tax credit, in which taxpayers receive less than a dollar-for-dollar match on their contributions, may be as high as $17 million.

For the purposes of this study, we use the parameters set in the most recent Missouri tax credit bill; i.e., it would be capped at $40 million annually and would fund scholarships to students in the Kansas City, Saint Louis, and Wellston school districts who reside in households with incomes lower than or equal to 185 percent of the federal poverty level.[1] Approximately 92,700 students in these districts meet the financial eligibility limits, 9.4 percent of whom currently attend private schools.

The growth of Missouri charter schools has demonstrated the demand for school choice in Missouri.

INTRODUCTION

During the past decade, Missouri legislators have introduced several efforts to reform the state's public schools. In 1998, the Missouri General Assembly enacted Senate Bill 781, which permitted the establishment of charter schools in the Saint Louis and Kansas City school districts. Charter schools are public schools that have been "chartered" and funded by existing school districts, universities, or the state Legislature, under a mandate to improve student performance. Unlike traditional public schools, however, charter schools are exempt from many state regulations — which provides teachers and administrators with greater flexibility in addressing the educational needs of their students.

Missouri's charter schools have proven popular with parents. The number of charter schools in the state has expanded from the original 15 Kansas City schools authorized in 1998 to 27 in Saint Louis and Kansas City in 2007.[2] The growth of Missouri charter schools has demonstrated the demand for school choice in Missouri.[3] In response to this demand, legislators have introduced tuition tax credit bills every year since 1999, as one potential solution. Tuition tax credit programs grant credits against an individual's or corporation's state income tax in exchange for a contribution to a non-profit scholarship-granting organization (SGO). SGOs then distribute these funds to students who meet eligibility requirements set by the state. Missouri's first such bill, S.B. 497, would have provided a total of $5 million in tax credits to individuals who donated to organizations that provided scholarships to private schools.[4] The purpose of the bill was to get taxpayers more involved in education reform by offering them the opportunity to help directly expand choice options for low-income families.

Although S.B. 497 eventually died in committee, the bill spawned an effort to address school choice that has met with increasing support each year. In 2000, a bill was introduced to create the Pilot Project Challenge Scholarship Program, which would have implemented a pilot scholarship program, funded by tax

Table 1: Comparison of Missouri Public School District Spending/Test Scores

DISTRICT	SPENDING PER STUDENT*		MAP TEST PROFICIENCY**	
	OPERATING	INSTRUCTIONAL	READING	MATH
COVERED DISTRICT				
Kansas City	9,237	4,913	17.0	12.4
St. Louis City	10,492	5,404	17.9	13.2
Wellston	10,930	5,484	N/A	2.9
STATE	7,542	4,577	42.7	42.4

Source: Standard & Poor's School Evaluation Services

* Spending per student is the amount spent on operating expenditures per student taught in the school district. It is calculated by dividing expenditures by total enrollment. Data is from the 2003-2004 academic year.

Operating expenditures excluded non-elementary/secondary programs, capital, and debt. Expenditures at the district level also exclude payments made by states on behalf of school districts, and transfers by some school districts in their own retirement differences.

**MAP Test Proficiency numbers are from Grade 11 (Reading) and Grade 10 (Math). Data is from the 2005-2006 academic year.

credits, in school districts under a federal desegregation order.[5] Three similar tuition tax credit bills were introduced in 2001, and three more in 2002.[6] Since then, related legislation has been introduced in the Missouri General Assembly each year, under various names and covering various districts. For the purposes of our paper, however, we focus on elements of the 2007 legislative bill, which would have established a tuition tax credit program for children in three disadvantaged Missouri school districts: Kansas City, Saint Louis, and Wellston. Similar legislation was proposed in the 2006 legislative session.[7] Table 1 provides summary information on student achievement and spending in these districts.

This study explores the economic benefits of a tuition tax credit program for Missouri by discussing the structure of similar programs implemented in other states. We argue that a tuition tax credit program would benefit Missouri by providing low-income families with additional education choices. Surveys demonstrate that Missourians support school choice legislation, and that this support is strongest among low-income households and minorities.[8] Improved public education would benefit all Missourians, but the greatest returns would flow to students in economically disadvantaged homes — those traditionally most affected by failing public education.

In the second part of this study, we address the fiscal cost to the state from implementing a tuition tax credit program. Opponents argue that such legislation would "cost" the state a significant amount of money, because it would decrease funding to public schools by the amount of the lost tax revenue from the credit. We demonstrate, however, that the net fiscal cost of a tuition tax credit program would actually be considerably lower than the lost tax revenues, and might even raise net revenues for the state. The amount of this fiscal savings will depend upon the number of low-income families who would be willing and able to pay for private school tuition with the assistance of the scholarships made available by such a program. The estimates from our model suggest savings as high as $7 million per year. A partial tax credit program, in which taxpayers receive less than a dollar-for-dollar match for contributions to SGOs, provides an even greater opportunity for taxpayer savings — as much as $17 million per year. If such savings occur, it means that additional revenues will be available for students who remain in public schools, for other state programs such as Medicaid, or for tax reduction.

TUITION TAX CREDIT PROGRAMS IN OTHER STATES

During the past decade, four states have implemented programs that grant income tax credits for contributions to SGOs: Arizona, Florida, Iowa, and Pennsylvania. Three other states — Minnesota, Illinois, and Rhode Island — have implemented tax credit programs that contain some similar features. We briefly discuss the "mechanics" of these programs, followed by a discussion of their successes.

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Arizona's tuition tax credit program has been in place the longest, since 1998.

Arizona

Arizona's tuition tax credit program has been in place the longest, since 1998. Arizona taxpayers receive a dollar-for-dollar credit on their state income tax bills for contributions to SGOs, up to a maximum of $500 for taxpayers filing singly and $1,000 for taxpayers filing jointly.[9]

Students are eligible for scholarships if they live in households with incomes lower than or equal to the eligibility cutoff point for the National School Lunch Program (185 percent of the federal poverty level), and who either attended a public school for at least the first 100 days of the previous school year, or who are entering kindergarten.[10] Scholarships are capped at $4,200 for students in kindergarten through eighth grade, and at $5,000 for students in high school. The total pool of state tax credits is capped at $5 million annually.[11]

Florida

Florida established a Corporate Tax Credit Scholarship Program in 2001. Under Florida's program, corporations may claim a dollar-for-dollar income tax credit on their corporate income tax bill for contributions to SGOs totaling no more than 75 percent of their state income tax liability. Up to $88 million in credits may be granted each year.[12]

Like Arizona's program, students are eligible for scholarships if their family income is lower than or equal to the eligibility cutoff for the National School Lunch Program, as long as they meet certain residency requirements.[13] Scholarships may be used to pay for a child's education at either a private school or a public school in an adjacent district. If used to attend a private school, a scholarship may not exceed $3,500, and at least 75 percent of the funds must be spent on tuition. The remainder may be spent on approved expenses, such as textbooks and transportation. If used to attend a public school, the scholarship may not exceed $500, and must be spent on transportation.

Iowa

Iowa passed a tuition tax credit program in June, 2006. Iowa taxpayers may claim a tax credit equal to 65 percent of their contributions to school tuition organizations, with an annual state cap of $2.5 million (in 2006). Students are eligible if their household income is lower than or equal to 300 percent of the federal poverty line.[14] School tuition organizations must also spend at least 90 percent of their annual revenue on scholarships.

Pennsylvania

Pennsylvania instituted the Educational Improvement Tax Credit Program (EITC) in 2001.[15] Under the Pennsylvania program, businesses (but not individuals) may deduct up to 75 percent (not to exceed $200,000) of their annual contributions to SGOs.[16] Businesses may extend their deductibles to 90 percent if they commit to matching their annual contributions the following year.[17] Pennsylvania imposes a state

Table 2: Characteristics of Existing Tuition Tax Credit Programs

STATE	YEAR ESTABLISHED	MAXIMUM SIZE OF CREDIT	CAP ON CREDITS	INCOME ELIGIBILITY LIMIT
Arizona	1998	$500 for single; $1,000 for married	NA	NA
Arizona	2006	NA	$5,000,000	185% of the Federal Poverty Level
Florida	2001	75% of state income tax liability	NA	185% of the Federal Poverty Level
Iowa	2006	65% of contributions	$2,500,000	300% of the Federal Poverty Level
Pennsylvania	2001	$150,000	$40,000,000 (includes other programs)	$50,000 + $10,000 for each dependent

Note: Figures are for the most recent year available. Partial tax credit programs are excluded.
Source: See footnotes to text.

cap of $40 million on total education tax credits (in addition to the EITC).[18] Scholarship organizations must spend at least 80 percent of their revenue on scholarships, and students are eligible if their total household income is lower than or equal to $50,000 — plus $10,000 for each dependent, including the student.[19]

Other States

Illinois offers a tax credit for approved educational expenses, including private school tuition.[20] Students must have been enrolled full-time in an Illinois grade school, and be an Illinois resident. There are no income restrictions, but parents or guardians may deduct only 25 percent of qualified expenses above the first $250, not to exceed a total of $500.

Minnesota also offers tax rebates for private school tuition.[21] Parents who meet certain income and residency requirements (household income lower than or equal to $37,500 for a family with one or two children, plus $2,000 for each additional child) are eligible to subtract, rather than deduct, up to $2,500 per child from their taxable state income. Rhode Island introduced a similar tax rebate last year.[22] Table 2 summarizes some key characteristics of these tuition tax credit programs.

BENEFITS OF TUITION TAX CREDIT PROGRAMS

In states where these programs have been enacted, their growth has been significant. For example, in Florida during the 2004-2005 school year, three SGOs distributed a total of $36,655,500 to 10,473 students attending 973 schools, with an average scholarship of $3,500 per student.[23] Given that eligible Florida students live in households with incomes below 185 percent of the federal poverty line, these scholarships represent educational opportunities that, absent the credit, their families would have been unlikely to provide.

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Arizona's and Iowa's programs have also proven popular. During the 2005 academic school year, Arizona distributed $30.9 million in private school scholarships to 22,522 students, with an average scholarship of $1,372 per student.[24] After only one year in operation, Iowa expanded its annual tax credit cap from $2.5 million in 2006 to $5 million in 2007, amid strong voter approval.[25]

Pennsylvania, however, has instituted the most ambitious program. The Commonwealth Foundation for Public Policy Awareness and the REACH Foundation, two Pennsylvania-based non-profit groups, have documented the success of the Pennsylvania program since its inception in 2001. The program has grown from $30 million in tuition tax credits in 2001 to nearly $45 million in credits in 2007.[26] Also, more than 2,300 companies have pledged more than $260 million in future scholarships.[27] These tax credits have helped more than 33,000 Pennsylvania students attend the schools of their choice.

Perhaps most relevant to this study, however, is that these tax credit programs have helped save millions of dollars of taxpayer money. Tuition tax credits have the potential to save taxpayer dollars because the cost to the state of providing a tax-funded scholarship is lower than the cost of educating a student in public school. If public school students use these scholarships to attend private schools, the state saves money. For example, the Friedman Foundation estimates that Pennsylvania's tuition tax credit program has saved taxpayers more than $144 million (or more than $20 million per year) since the program was implemented in 2001.[28] Similarly, Florida's corporate tax credit scholarship program has saved the state more than $42 million, while Arizona's far less ambitious tuition tax credit program is estimated to have saved the state nearly $18 million. And although Iowa's tuition tax credit program is too new to properly assess fiscal savings, preliminary evidence suggests that the program is saving the state money — particularly at the local district level.

MISSOURI SUPPORT FOR A TUITION TAX CREDIT PROGRAM

Survey evidence suggests that Missouri voters support public school reform in general, and tuition tax credits specifically. In 2006, the Show-Me Institute commissioned Market Research Insight, an unaffiliated Florida-based polling firm, to conduct an independent telephone survey of Missouri voters designed to gauge the intensity and direction of public opinion on school choice initiatives in Missouri.[29] The survey polled nearly 1,000 Missourians, assessing their views on K-12 education, and found overwhelming support for school choice legislation — particularly among minority and low-income families.

Missouri residents expressed dissatisfaction with the current public school system. When asked their opinion on the state of public education, 64 percent of respondents reported that public schools have "a serious problem" or are "in a state of crisis." Among African-Americans and Hispanics, those numbers increased to 81 percent and 73 percent, respectively. And 61 percent of

respondents said that inadequate public school funding is not responsible for declining student performance.

In contrast to their views on the current public school system, the survey found that many Missouri residents hold favorable opinions of school choice initiatives. Missourians are favorably inclined toward reforms that would give parents greater choice in their children's educations, and most hold positive opinions of private schools, with support highest among minorities. Seventy-three percent of respondents hold favorable views of private education in Missouri, while 68 percent hold favorable views of the term "school choice."[30] Only 26 percent of respondents believe that allowing parents to choose their children's schools (public or private) would negatively impact the public school system.

But most relevant to the issue covered by this study is the fact that the survey found statewide support for a tuition tax credit. Seventy percent of respondents expressed support for legislation that would allow parents to use the same money spent on a child attending public school, to instead attend the school of their parents' choice.[31] Only 28 percent opposed legislation that would offer tuition tax credits (66 percent favored such legislation, with 6 percent uncertain).

CALCULATING THE FISCAL EFFECTS OF A TUITION TAX CREDIT PROGRAM

We now turn to the central focus of this study: the fiscal cost to the state of implementing a tuition tax credit program. Opponents argue that such a program would decrease funding to public schools by the amount of the tax credit. The experience of other states proves that this will not be the case with a well-structured program — i.e., one in which legislators ensure that the tax credits only affect the state's general revenue, and not the public education fund.[32] Programs in other states vary in their eligibility requirements, scholarship limits, revenue funding formulas, tax credit sizes, and other particulars. The values that Missouri legislators choose for the parameters of this program will ultimately determine its cost. It is important to recognize, however, that the fiscal cost of the program will certainly be lower than the amount of lost tax revenue. In fact, as we will show below, a scholarship tax credit might actually result in net fiscal savings to taxpayers.

THE MODEL

For the purposes of this study, we use the parameters set in the most recent Missouri tax credit bill; i.e., it would be capped at $40 million annually and would fund scholarships to students in the Kansas City, Saint Louis, and Wellston school districts who reside in households with income lower than or equal to 185 percent of the federal poverty level. Approximately 92,700 students in these districts meet the financial eligibility limits, 9.4 percent of whom currently attend private schools.

We can discover the likely fiscal impact of a tax credit program very simply.

Missourians are favorably inclined toward reforms that would give parents greater choice in their children's educations.

A tuition tax credit program has the potential to save the state money because per-pupil spending in the Kansas City, Saint Louis, and Wellston school districts is much higher than the state average.

The net fiscal savings — or cost — to Missouri from a tuition tax credit program is derived from the following equation:

F = (P*N) – S

Here, F represents the net fiscal cost or savings to the state from the program; P is per-pupil state spending, measured by the weighted average of per-pupil state revenues in the Kansas City, Saint Louis, and Wellston school districts; N is the number of students who switch from public to private schools in response to the scholarship; and S is the total dollar value of tax credits made available by the program.[33] A negative value for F indicates that the savings from the program (P*N) are lower than the value of the tax credits (S), resulting in a net cost to the state. In contrast, if P*N is larger than S, leading to a positive value for F, the net fiscal effect is positive and the program saves the state money. The resulting savings can be used to lower taxes, fund other government programs, or increase spending for the remaining public school students.

A tuition tax credit program has the potential to save the state money because, as Table 1 showed, per-pupil spending in the Kansas City, Saint Louis, and Wellston school districts is much higher than the state average. The district spending figures in Table 1 include local and federal contributions, however. Because we are initially interested in the fiscal cost (or savings) to the state specifically, rather than the individual districts (which are considered later), it is necessary to use state per-pupil spending figures. To calculate average per-pupil state spending in covered districts, we weight per-pupil state aid for each district — along with funds from Missouri's Proposition C sales tax — by the number of students in that district, arriving at an average state cost of $5,516 per student.[34] The 2007 tax credit bill would have granted a maximum scholarship of $5,000 per student.[35] Therefore, the program will save the state money if enough of the scholarships go to students who would have otherwise attended public schools.

MODEL ASSUMPTIONS

Three factors determine the number of public school students who will receive scholarships:

1. The number of scholarships available.
2. The proportion of scholarships allocated between public and private school students.
3. The number of public school students who apply for scholarships.

Let's begin with the first factor. The number of scholarships available is equal to the total amount of scholarship funds made available by the tax credit program, divided by the average scholarship size. The tuition tax credit program proposed in 2007 would have provided $40 million in credits each year, so an average scholarship size of, say, $4,000 would have made 10,000 scholarships available. In our analysis, we consider average scholarship sizes between $2,500 and $4,000.[36]

Turning to the second factor, we consider the allocation of scholarship funds between public and private school students. First, we consider the case in which an equal number of public and private school students receive scholarships. Next, we consider scenarios in which more scholarships are awarded to public school students than private school students. Because the per-student scholarship amount is lower than the state's average per-pupil spending for public schools in the districts under consideration, the more credits that go to public school students, the greater the state's fiscal savings will be. A bias in favor of public school students could be built into the system by issuing scholarships through a lottery, or by requiring SGOs to provide a set percentage of funds to public school students. However, because these requirements are unknown to us prior to the passage of a specific legislative bill, we estimate the response of families with public school students under a range of possible outcomes.

The number of public school students who apply for scholarships depends on the demand curve for private school education. As the cost of private school education decreases, more low-income families will be able to afford a private school education. Thus we would expect that with a tuition tax credit, the quantity of private school education demanded would increase as the size of the tuition tax credit increases. For the economically inclined, this relationship is illustrated by Figure 1, which presents a hypothetical demand curve for private school education.

An important factor in estimating the fiscal effect of a tuition tax credit program is to calculate the number of students who would switch from public to private school as the cost of tuition decreases. Economists refer to the demand sensitivity of a good in relation to its price as its *price elasticity*. The price elasticity of demand is the percentage change in demand for a given percentage change in price. For example, if a 1-percent decrease in private school tuition causes the number of students who attend those schools to increase by 1.5 percent, then the price elasticity would equal 1.5. Economic theory suggests that when two items are seen by consumers as good substitutes

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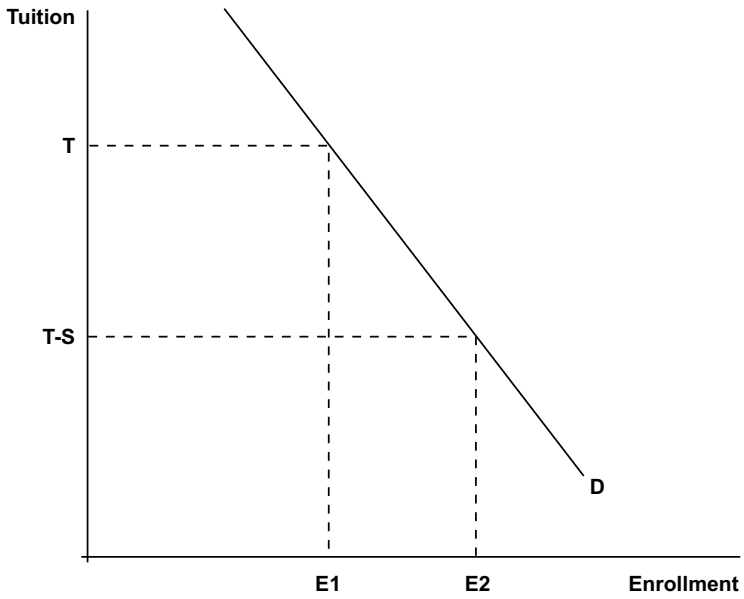
Figure 1: Demand Curve for Private Education



Average private school tuition before the tax credit is represented by T. In the absence of the scholarship, private school enrollment among low-income families would be E1. Now consider the case of a tuition tax credit scholarship. The scholarship lowers net tuition to T – S, and therefore increases enrollment to E2. So the demand for scholarships among public school parents will be E2 – E1. If the number of scholarships for public school students is greater than E2 – E1, the switch in public/private enrollment (N in the equation on page 8) will be E2 – E1. In contrast, N will equal the scholarship cap if the number of scholarships is less than or equal to E2 – E1.

One might expect a significant response by public school families to the availability of tuition tax credits.

for one another (as is largely the case with public and private school educations), the price elasticity of demand should be relatively high. On those grounds, one might expect a significant response by public school families to the availability of tuition tax credits. On the other hand, because the scholarships do not fully cover the cost of private school educations, low-income families may still find private schooling to be prohibitively expensive, tempering their response to the credits. In order to demonstrate the impact of this effect, we consider several elasticity estimates, providing a range of potential outcomes.

Table 3

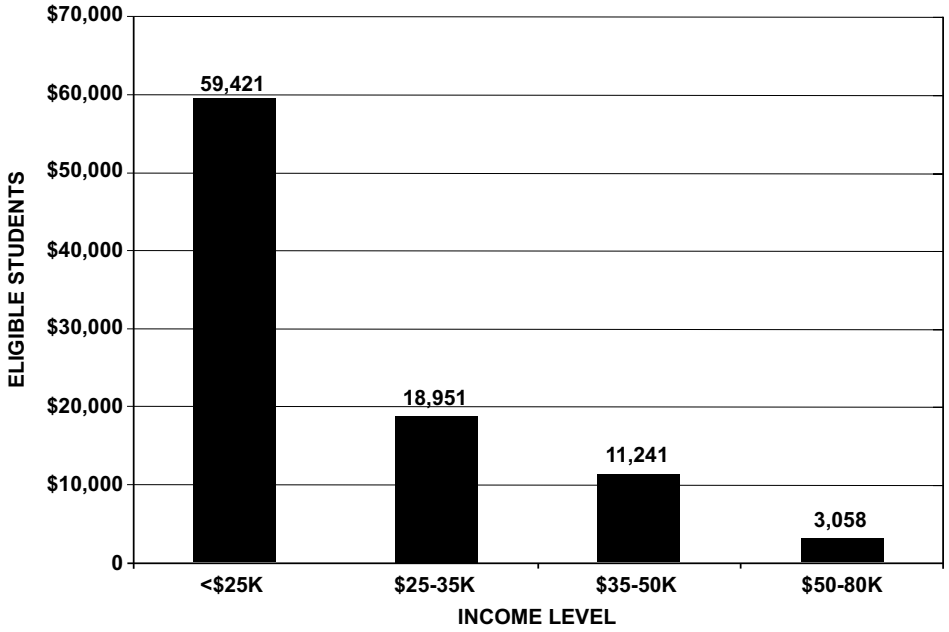
185% OF THE FEDERAL POVERTY LEVEL	
Total Number of Persons in Household	**Total Maximum Household Income (for 2005)**
2	$24,420
3	$30,710
4	$37,000
5	$43,290
6	$49,580
7	$55,870
8	$62,160
9	$68,450
10	$74,740

Source: United States Census Bureau.

STUDENTS ELIGIBLE FOR SCHOLARSHIPS

The recently proposed tuition tax credit bill would have limited scholarship eligibility to students living in the Kansas City, Saint Louis, and Wellston school

Figure 2: Number of Eligible Students by Income Level



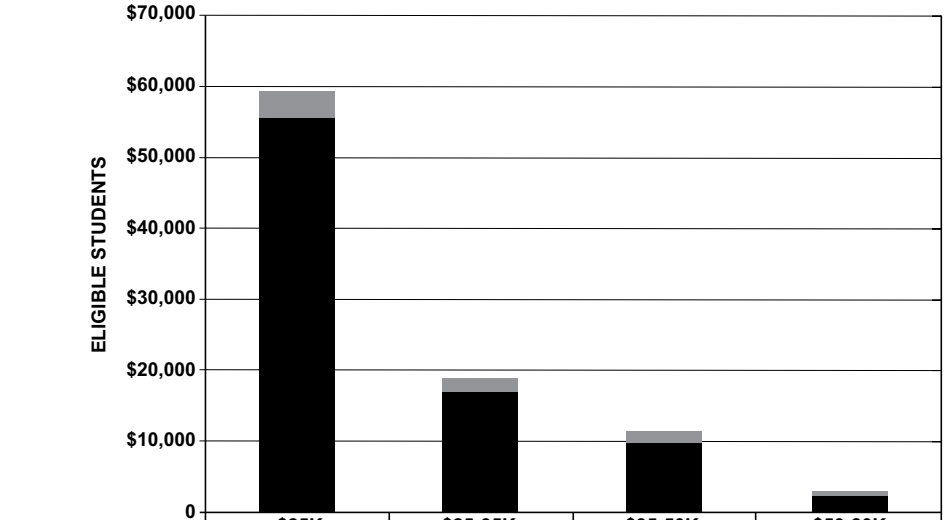
Source: Integrated Public Use Microdata Series: Version 3.0.

districts. It would also have limited eligibility to students with household incomes lower than or equal to 185 percent of the federal poverty level. We use these criteria to define eligibility.

The proposed legislation would also have required that scholarships be awarded *only* to students who had attended a public school during the previous year. It is difficult to predict how this requirement would affect student enrollment choices. For example, many parents whose children attend — or would have attended — private schools would have a strong incentive to enroll their children in public schools for a year instead, in order to meet scholarship eligibility requirements. Moreover, it is unclear whether new school entrants (for example, new kindergartners or transfer students from other states) would be eligible. Because of the difficulty of controlling for these variables, we included all income-eligible families in our model, regardless of their previous enrollment status.[37] This assumption allows us to compute more conservative savings estimates, as more private school students will receive scholarships in our model (and therefore cost the state money) than would otherwise be eligible.

In other words, rather than assuming that administrators or SGOs can ensure that all scholarships go to students who would have enrolled in public schools, we assume that some of the tax credits would be allocated to existing (or future) private school enrollees, and some would be reserved for existing public school students. As discussed earlier, we consider the effects of varying these percentages. Although we expect that many private school students would switch to public schools if scholarships were awarded only to public school students, we do not expect that many would switch in order to have only a slightly greater chance of receiving a scholarship.

Figure 3: Eligible Students by Income Level



	<$25K	$25-35K	$35-50K	$50-80K
In Private Schools	3506	1861	1305	572
In Public Schools	55915	17090	9936	2486

INCOME LEVEL

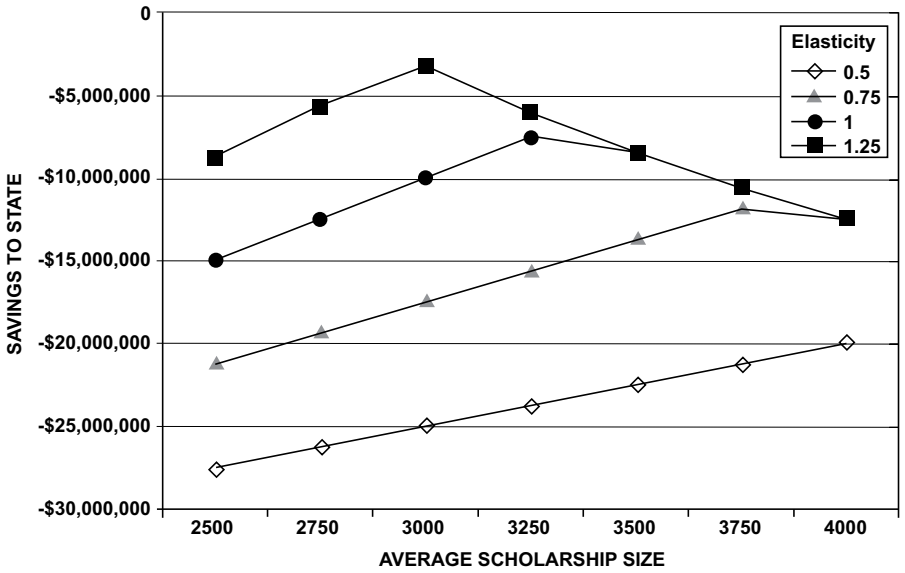
Source: Integrated Public Use Microdata Series: Version 3.0.

ESTIMATION

In order to construct our estimates, we use public-use microdata from the 2000 Census, for urban Saint Louis and Kansas City, in order to find the number of scholarship-eligible students.[38] Table 3 delineates the tuition tax credit program's income eligibility limits by household size. We find that approximately 92,700 students would meet the eligibility requirements. Figure 2 shows that most eligible students live

We assume that some of the tax credits would be allocated to existing (or future) private school enrollees, and some would be reserved for existing public school students.

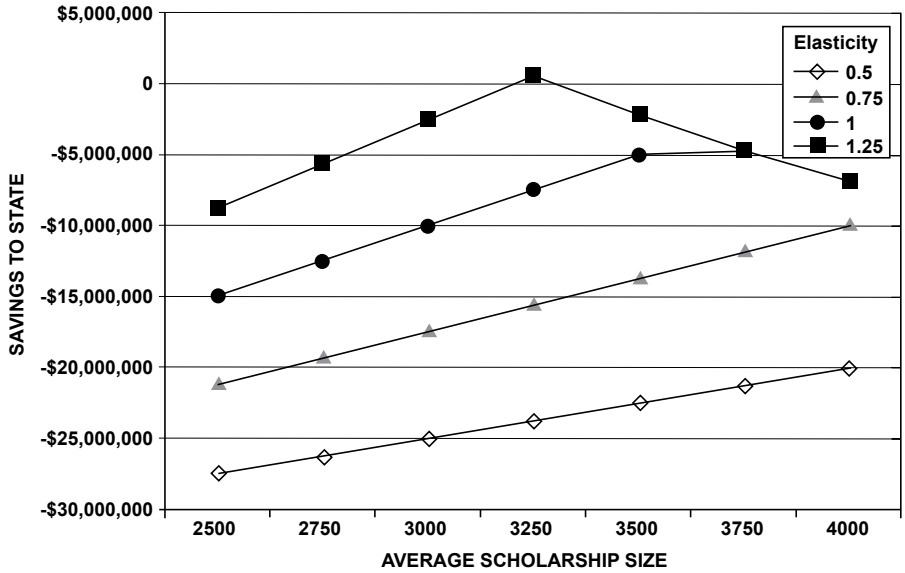
Figure 4: Savings to State, Up to 50% of Scholarships to Public School Students



Note: Calculations assume $4,000 average annual tuition.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

Figure 5: Savings to State, Up to 60% of Scholarships to Public School Students



Note: Calculations assume $4,000 average annual tuition.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

in households with very low incomes. For example, among eligible students, 64.1 percent live in households with incomes lower than $25,000, 20.5 percent live in households with incomes between $25,000 and $35,000, 12.1 percent live in households with incomes between $35,000 and $50,000, and 3.3 percent live in households with incomes between $50,000 and $80,000. Eligible students with household incomes higher than $50,000 live in households that contain seven or more persons.

Eligible students with higher household incomes are more likely to already attend private schools than the eligible students with the lowest household incomes. Among eligible students with household incomes lower than $25,000, only 5.9 percent are enrolled in private schools. In contrast, 18.7 percent of eligible students with household incomes between $50,000 and $80,000 are enrolled in private schools. These percentages are important, because they suggest that most students eligible for scholarships attend public schools, and therefore have the greatest potential to save the state money. Figure 4 compares the numbers of eligible students in public and private schools by income level.

ESTIMATES OF COST OR SAVINGS TO THE STATE

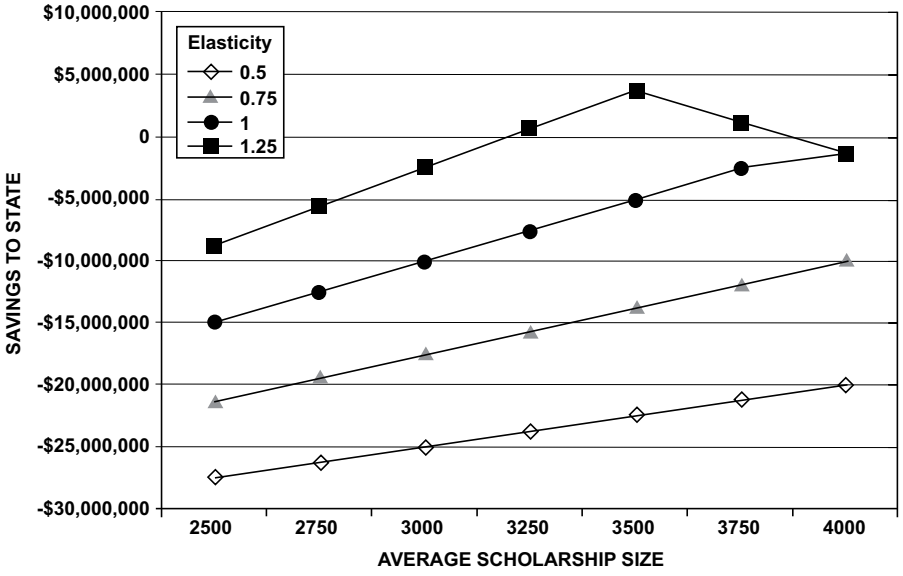
We first consider the case in which up to half of all available scholarships are awarded to public school students. The vertical axis of Figure 4 represents the fiscal cost (or savings) to the state

when up to 50 percent of scholarships are awarded to public school students.[39] The horizontal axis measures the average dollar amount of the scholarships (we assume that average private school tuition is $4,000 per year, in line with estimates of the national average).[40] We provide estimates using price elasticities ranging from 0.5 to 1.25. The number of students who switch from public to private schools is 50 percent of either the number of available scholarships, or of the number of public school students who apply for scholarships — whichever is lower.

Figure 4 shows that the higher the price elasticity of demand, the lower the expected cost of the tax credit program. In other words, when families are more responsive to changes in the price of private schools, more of them apply for scholarships and more students switch from public to private schools. For example, if the state issues $40 million in tax credits when the price elasticity of demand is 1.25, the program would cost approximately $3 million, with an average scholarship of $3,000. In contrast, the program would cost $25 million if the price elasticity is 0.5.

Figure 5 provides estimates of savings (or costs) to the state when 60 percent of scholarships are awarded to public school students. At an elasticity of 1.25, the tuition tax credit program breaks even if the average scholarship size is $3,250. At this size, savings to the state are greatest, because the reduction in tuition attracts the largest number of public school students. With scholarships lower than $3,250, private school tuition remains too expensive for many, so fewer public school students switch to private schools. In contrast, demand exceeds supply when scholarships

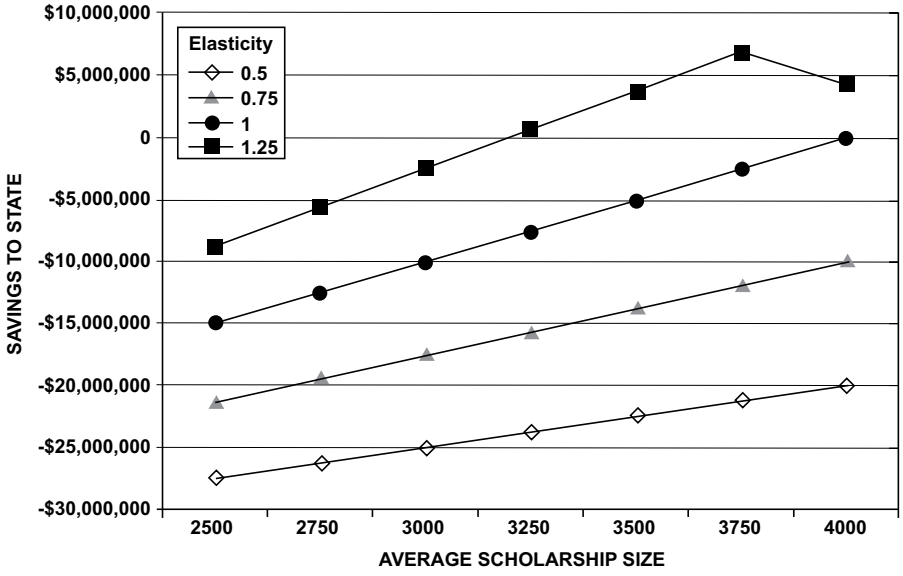
Figure 6: Savings to State, Up to 70% of Scholarships to Public School Students



Note: Calculations assume $4,000 average annual tuition.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

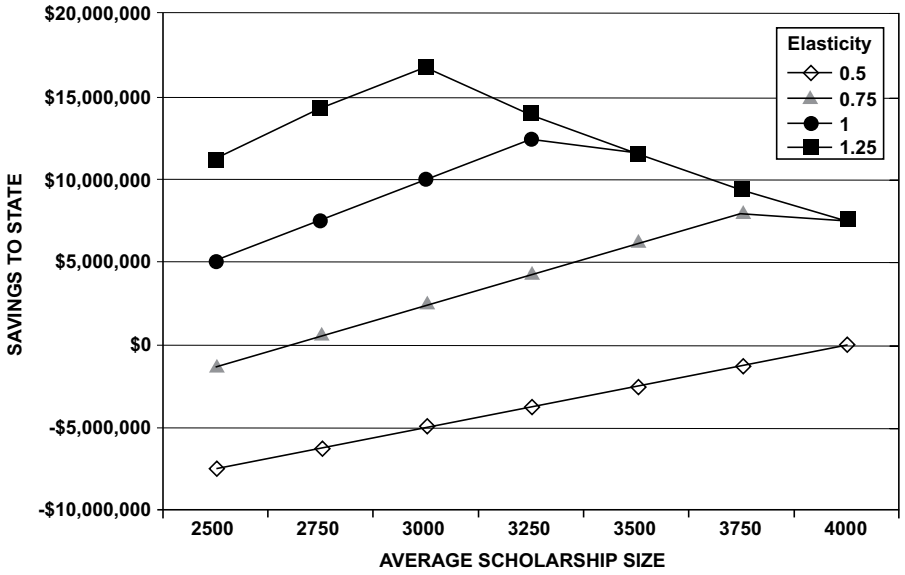
Figure 7: Savings to State, Up to 80% of Scholarships to Public School Students



Note: Calculations assume $4,000 average annual tuition.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

Figure 8: Savings to State, 50% Credit, Up to 50% of Scholarships to Public School Students



Note: Calculations assume $4,000 average annual tuition.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

The potential for state savings is even greater if the state offers a tax credit that is less than dollar-for-dollar.

are greater than $3,250, meaning that fewer students can switch from public to private school than would like to. The result is that savings for the state decline.

Figures 6 and 7 provide estimates of the cost (or savings) to the state when up to 70 percent and 80 percent of scholarships are awarded to public school students, respectively. For the case in which up to 70 percent of scholarships are awarded to public school students, the state saves money if the average scholarship size is in the $3,250–3,750 range and the elasticity is 1.25. For the case in which up to 80 percent of scholarships are awarded to public school students, the state saves money if the average scholarship size is in the $3,250-$4,000 range and the elasticity is 1.25. In this scenario, the state will still break even at an elasticity of 1.0.

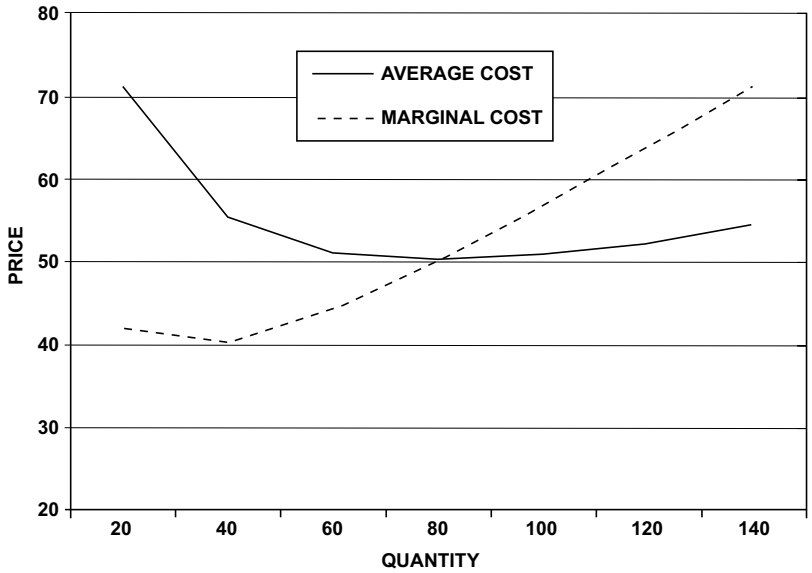
ESTIMATES OF COST OR SAVINGS FROM A PARTIAL TAX CREDIT

The potential for state savings is even greater if the state offers a tax credit that is less than dollar-for-dollar. As noted in our overview, most states do not offer a full tax credit for SGO contributions.[41] Assuming that SGOs are able to provide the same $40 million per year in scholarship contributions under such a system, the state will save more money than under a system that offers a matching dollar-for-dollar credit. For example, suppose that with a dollar-for-dollar tax credit, taxpayers would have been willing to contribute $80 million to SGOs, but the program is capped at $40 million. In this case, one might reasonably assume that it would be possible to generate $40 million in SGO contributions for something less than a dollar-for-dollar credit.[42]

To illustrate this difference, Figure 8 provides estimates of fiscal savings when up to 50 percent of scholarships are awarded to public school students, and the amount of the credit equals 50 percent of a taxpayer's contribution (e.g., taxpayers will receive $20 million in tax credits for $40 million in contributions to SGOs). Figure 8 is identical to Figure 4, but costs are $20 million lower. Therefore, the state will save money at an elasticity of 0.75, 1, or 1.25 if the average scholarship is $2,750 or more.

Critics may object to the size of the partial tax credit we have chosen. It is important to realize that Figure 8 is only one example of a partial tax credit program that could be implemented in

Figure 9: Short-Run Average and Marginal Cost for a Hypothetical School District



Note: Marginal and average costs are equal when average costs are at their minimum. When marginal costs are greater than average costs, average costs are increasing. Likewise, when average costs are decreasing, marginal costs are smaller than average costs.

Missouri. Yet evidence from other states has suggested that taxpayers have been willing to provide significant scholarship funds for less than a dollar-for-dollar tax credit match. For example, Iowa and Florida offer a 65-percent and 75-percent credit, respectively, and have expanded their annual tax credit pools in response to overwhelming demand. Moreover, the annual savings we estimate from our partial tax credit model are well below those that have been realized empirically in other states.

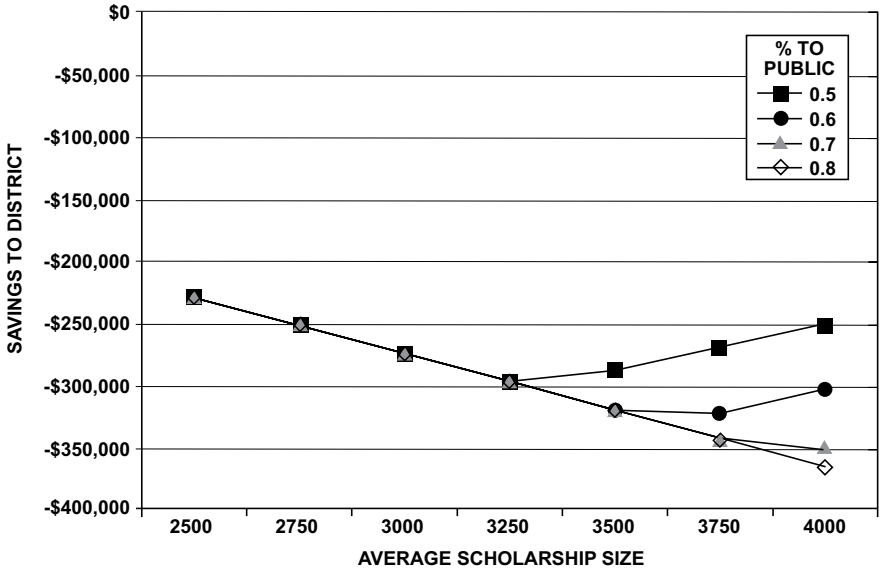
ESTIMATES OF COST TO SCHOOL DISTRICTS

Thus far, we have only considered the fiscal cost (or savings) of a tuition tax credit on the state budget. Now we turn to individual school districts. When a student leaves a public school district, the state aid to that district decreases. However, the district's costs also decrease, because it no longer needs to educate that student. The amount of the decrease is equal to the district's *marginal cost* — the cost of educating one fewer student. At first blush, it is tempting to conclude that the marginal cost of a single student is zero. However, suppose that district enrollment shrinks by 10 percent. Surely, now the district will have some savings — but how much? Will costs shrink by 10 percent? Less than 10 percent? More than 10 percent?

Our data do not provide estimates of marginal cost. Instead, we know *average costs*, or the average amount districts spend per pupil on both variable and fixed (e.g., buildings, supplies, etc.) costs. When average costs decrease as the number of students increases, marginal costs will be lower than average costs.

The annual savings we estimate from our partial tax credit model are well below those that have been realized empirically in other states.

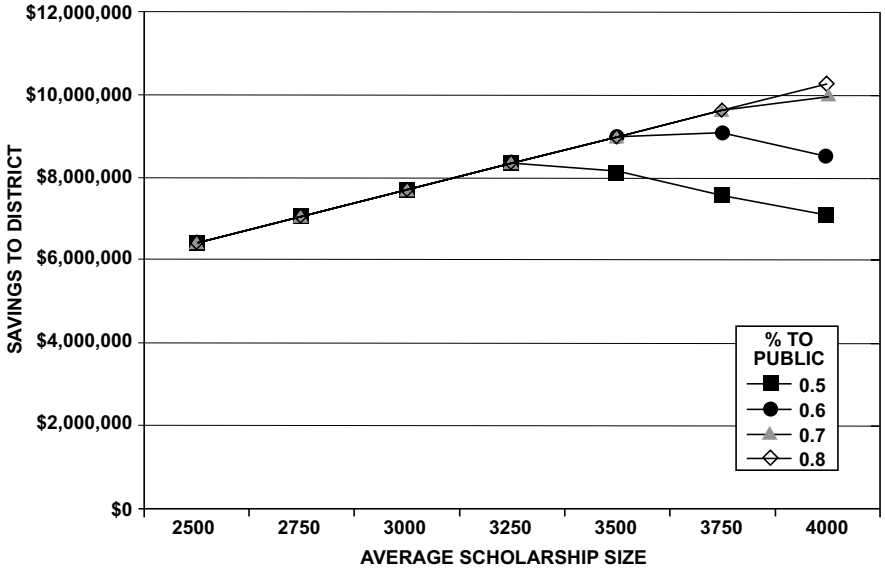
Figure 10: Savings to Saint Louis Public School District



Note: Calculations assume $4,000 average annual tuition. Marginal cost is assumed to be 50 percent of per pupil spending. Elasticity of quantity demanded is assumed to be 1.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

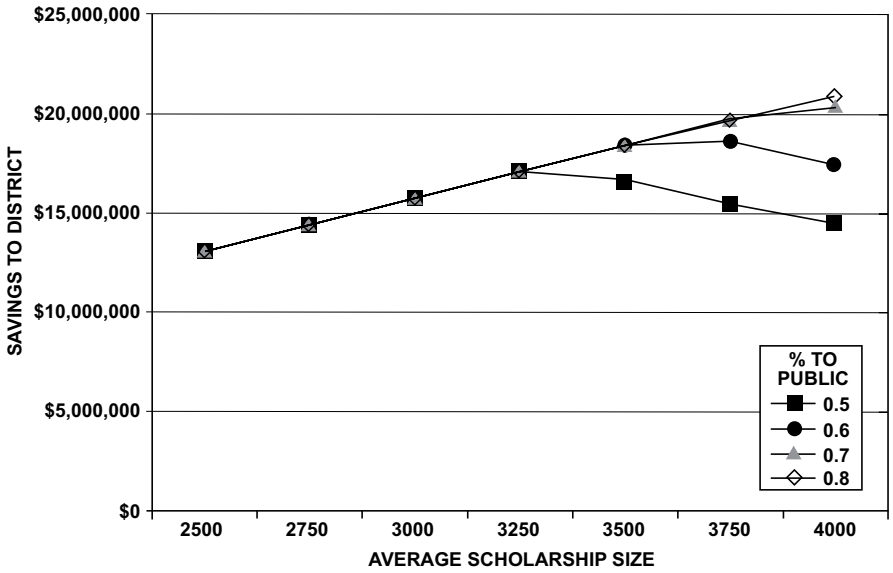
Figure 11: Savings to Saint Louis Public School District



Note: Calculations assume $4,000 average annual tuition. Marginal cost is assumed to be 75 percent of per pupil spending. Elasticity of quantity demanded is assumed to be 1.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

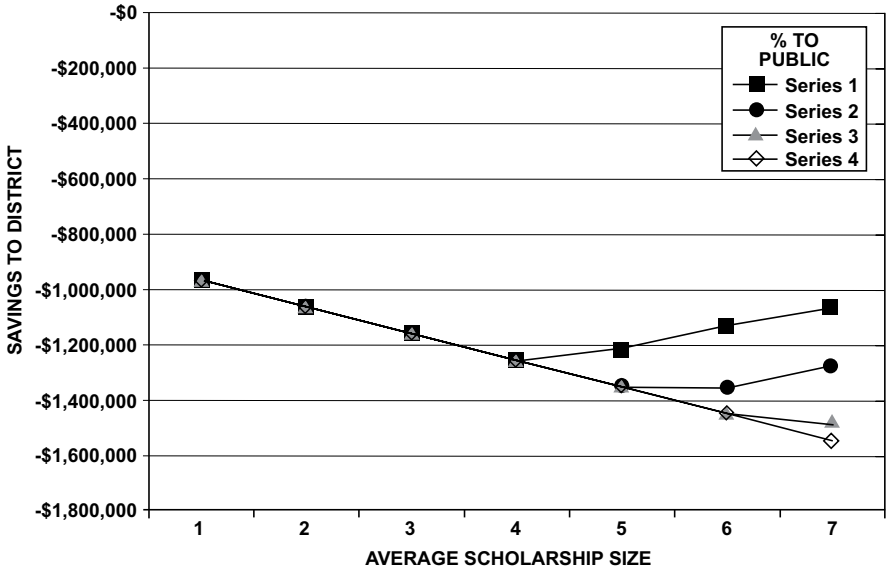
Figure 12: Savings to Saint Louis Public School District



Note: Calculations assume $4,000 average annual tuition. Marginal cost is assumed to be 100 percent of per pupil spending. Elasticity of quantity demanded is assumed to be 1.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

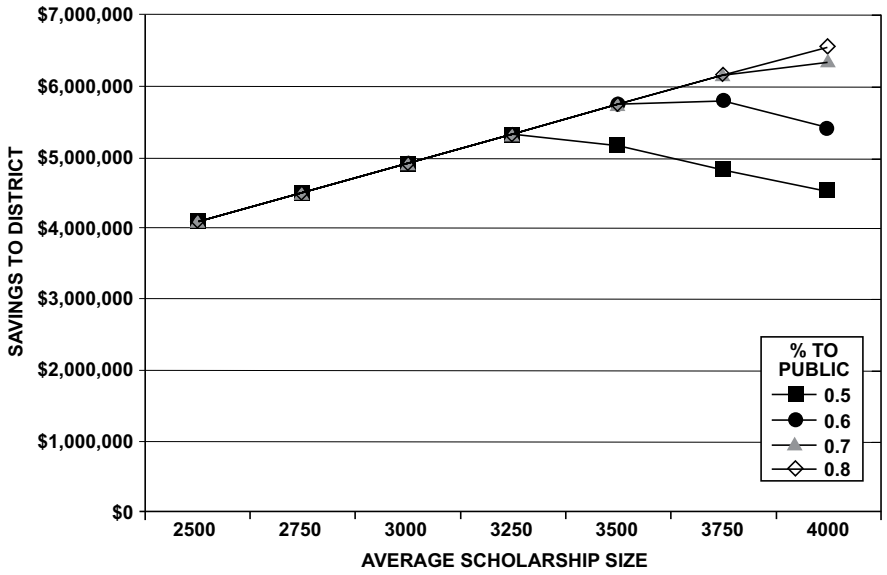
Figure 13: Savings to Kansas City Public School District



Note: Calculations assume $4,000 average annual tuition. Marginal cost is assumed to be 50 percent of per pupil spending. Elasticity of quantity demanded is assumed to be 1.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

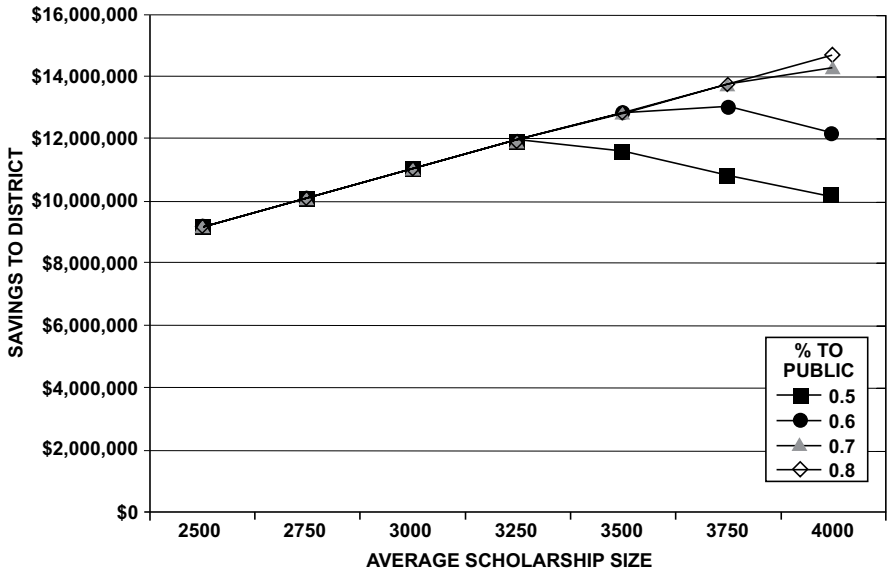
Figure 14: Savings to Kansas City Public School District



Note: Calculations assume $4,000 average annual tuition. Marginal cost is assumed to be 75 percent of per pupil spending. Elasticity of quantity demanded is assumed to be 1.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

Figure 15: Savings to Kansas City Public School District



Note: Calculations assume $4,000 average annual tuition. Marginal cost is assumed to be 100 percent of per pupil spending. Elasticity of quantity demanded is assumed to be 1.

Source: Integrated Public Use Microdata Series: Version 3.0 and Missouri Department of Elementary and Secondary Education (DESE).

This is because school districts have substantial fixed costs in the short run, which means that average fixed costs decrease as the number of students increases. Therefore, removing a small number of students from a district will not decrease district spending by the full amount of average per-pupil spending.

Graphically, the relationship between short-run average and marginal costs may resemble what is shown in Figure 9.[43] But in the long run, districts can consolidate fixed costs (like buildings and classrooms) and marginal costs will approach average costs, eliminating short-run economies of scale. In other words, it is possible to run a district with 5,000 students just as efficiently as one with 30,000 students.[44]

We compute estimates of the program's cost to the Saint Louis and Kansas City school districts under the assumption that marginal costs range from 50 percent to 100 percent of average costs. As a conservative benchmark, we assume that the elasticity of private school demand is 1. We also assume that the number of students awarded scholarships in a district is proportional to the number of students in that district. The cost to the district equals the amount of state aid per student, minus marginal cost (the net loss to the district for each student who leaves), multiplied by the number of students who switch to private schools. Figures 10 through 12 present our estimates for Saint Louis, while Figures 13 through 15 present estimates for Kansas City. With low marginal costs (e.g., 50 percent), a district would suffer modest losses. However, if marginal costs are closer to average costs (as we would expect in the long run), the district saves money by implementing the program. Although the primary purpose of this study has been to concentrate on the fiscal cost of a tuition tax credit program to the state itself, a district-wide analysis is an interesting topic for future research. In general, however, we find that losses to the school districts — should they occur — are generally modest.

CONCLUSION

A tuition tax credit program could provide thousands of low-income parents in Missouri with improved educational opportunities for their children. Survey data suggest that Missouri citizens do support public school reform in general, and tuition tax credits in particular.

Previous Missouri tax credit proposals would have awarded $40 million in credits to Missouri taxpayers who contributed to scholarship-granting organizations. This study finds that the cost to the state of such a program would be much lower than $40 million. Depending on the average scholarship size and low-income families' responses to the change in tuition, the state could potentially save money from a tuition tax credit program. A partial credit offers the greatest opportunity for savings, but in all cases, the cost to the state will be far lower than the tax revenue loss. Most importantly, a tuition tax credit program would help to reduce the gap in educational opportunities between Missouri's high- and low-income families, and would provide meaningful choices for students in school districts that have lost accreditation.

A tuition tax credit program helps to reduce the gap in educational opportunities between Missouri's high- and low-income families.

NOTES

[1] Technically, the 2007 tuition tax credit bill would have limited eligibility to family incomes below 135 percent of the federal poverty line. In this study, we use the 2006 tuition tax credit income eligibility limits, which are more similar to existing tuition tax credit programs in other states. In addition, we include coverage of the Wellston School District (included in the 2006 bill) in our analysis.

[2] For details regarding Missouri's charter school system, refer to the Missouri Charter School website, sponsored by the U.S. Department of Education: http://www.uscharterschools.org/lpt/sp/38

[3] Indeed, in late 2007, the city of Saint Louis announced a major initiative to charter as many as 30 new charter schools during the next 10 years. See Hunn, David. "Mayor Slay pushes system of charter schools," *St. Louis Post-Dispatch*, November 9, 2007.

[4] Details of the 1999 bill, termed the "Show-Me Parental Choice Tax Credit Program," can be found online at the Missouri Senate's website: http://www.senate.mo.gov/03INFO/bills/SB497.htm

[5] Traditionally, private schools have been much more successful at racial integration than public schools. For details, see Reese, Nina Shokraii. "Public School Benefits of Private School Vouchers," Hoover Institution, *Policy Review*, January 1999.

[6] The bills were S.B. 74, S.B. 576, and H.B. 906 in 2001, and S.B. 659, S.B. 735, and H.B. 1278 in 2002.

[7] The bill was termed the "Angell Scholarship Program."

[8] Kennedy, Verne, and Sarah Brodsky. "Ready for Change: What Missourians Think of Parental Choice and Public Schools," *Show-Me Institute* Policy Study, 2007, 9, pp. 1-14.

[9] Details from the Arizona Department of Revenue: http://www.azdor.gov/brochure/707.pdf

[10] *Ibid.*

[11] Details from the Arizona Scholarship Fund: https://www.corporatescholarships.org/index.aspx?c=56

[12] Details from the Florida Department of Education: http://www.floridaschoolchoice.org/Information/CTC/fast_facts.asp

[13] For example, children entering grades 2 through 12 must have attended a Florida public school during the school year prior to receiving their scholarships.

[14] In 2006, this would amount to $60,000 for a family of four. Details are provided in the Iowa Senate Journal 1098, Senate File 2409.

[15] Fox, Richard. "Pennsylvania Educational Improvement Tax Credit: Are You Eligible?" Dilworth Paxson, LLP. *General Publications*, 2006.

[16] Note that the Pennsylvania plan offers a tax deduction (which lowers the taxpayer's total taxable income), as opposed to a tax credit (which is a credit against a taxpayer's total tax bill).

[17] Details from the Pennsylvania Department of Community and Economic Development: http://www.newpa.com/programDetail.aspx?id=62

[18] *Ibid*.

[19] *Ibid*.

[20] See Chapter 35 Section 201(m) of the Illinois Compiled Statutes

[21] Details from the Minnesota Department of Revenue: http://www.taxes.state.mn.us/taxes/individ/credits_subtractions_additions/education_credits_subtractions/educ_credit_sub.shtml#P70_5375

[22] Text of the legislation can be found on the Rhode Island General Assembly's website: http://www.rilin.state.ri.us/BillText/BillText06/HouseText06/Article-024-SUB-A-as-amended.pdf

[23] Details from the Florida Department of Education: http://www.floridaschoolchoice.org/Information/CTC/fast_facts.asp

[24] Details from the Arizona Department of Revenue: http://www.azdor.gov/ResearchStats/private_schl_credits_report_2006.pdf

[25] See Courter, Jeff and Patricia Wilger. "Tax-Credit Law Expands Schools Choices for Families," *The Des Moines Register*, September 27, 2006.

[26] Details of the program's success came from statistics collected by the REACH Foundation, available online: http://www.paschoolchoice.org/reach/cwp/view.asp?a=1367&q=568487

[27] *Ibid*.

[28] Aud, Susan L. "Education by the Numbers: The Fiscal Effect of School Choice Programs, 1990-2006." The Friedman Foundation, *School Choice Issues*, April 2007. See pages 19, 23, 24, and 28 for details of the Arizona, Florida, Iowa, and Pennsylvania programs, specifically.

[29] Kennedy, Verne, and Sarah Brodsky. "Ready for Change: What Missourians Think of Parental Choice and Public Schools," *Show-Me Institute* Policy Study, 2007, 9, pp. 1-14.

[30] Among African-Americans and Hispanics, support increased to 72 percent and 76 percent, respectively.

[31] Again, among African-Americans and Hispanics, support was even higher, increasing to 78 percent and 84 percent, respectively.

[32] Aud, Susan L. "Education by the Numbers: The Fiscal Effect of School Choice Programs, 1990-2006," The Friedman Foundation, *School Choice Issues*, April 2007.

[33] We assume that SGOs spend 100 percent of the contributions they receive on scholarships.

[34] Proposition C, approved by Missouri voters in 1982, is a 1-cent state sales tax for public education funding. Revenues are allocated among Missouri school districts at a flat rate per pupil.

[35] Details of the 2007 bill, termed the "Betty L. Thompson Scholarship Program," can be found online at the Missouri House of Representatives' website: http://www.house.mo.gov/bills071/biltxt/intro/HB0808I.htm

[36] We would expect the *average* scholarship size to be less than the *maximum* scholarship size.

[37] The 2007 bill would also have limited its eligibility requirements to students with grade point averages of 2.5 or lower. This requirement would also have spurred indeterminate behavioral responses.

[38] Our data is collected by the Missouri Department of Elementary and Secondary Education (DESE, available at http://dese.mo.gov/schooldata/ on the web) and the IPUMS-USA series, collected by Ruggles, Steven; Sobek, Matthew; Alexander, Tren; Fitch, Caterine A.; Goeken, Ronald; Hall, Patricia Kelly; King, Miriam and Ronnander, Chad. *Integrated Public Use Microdata Series: Version 3.0*. Minneapolis, MN: Minneapolis Population Center, 2004. For income eligibility, we use the 2005 federal poverty guidelines, adjusted for inflation.

[39] Note: A negative value denotes a fiscal *cost*. Positive values denote fiscal *savings*.

[40] For example, the U.S. Department of Education's National Center for Education Statistics reports in Table 59 of the 2005 Digest of Education Statistics that the average national cost of elementary/secondary private school tuition is $4,689 per year. In addition, a well-cited 2003 Cato Institute study found that the average elementary tuition cost was less than $3,500 per year by looking at private schools in several major U.S. metropolitan areas. See Salisbury, David F. "What Does a Voucher Buy? A Closer Look at the Cost of Private Schools," The Cato Institute, *Policy Analysis*, No. 486, August 2003.

[41] For example, Pennsylvania corporations receive a 75-cent tax credit for each dollar of scholarship contributions.

[42] We do not attempt to estimate the optimal tax credit ratio. This is an empirical matter best left for later research.

[43] We acknowledge J. Wilson Mixon, Jr. and Soumaya Tohamy of Berry College for the use of their Excel macros in the construction of this figure.

[44] Indirect evidence for this point is found in the districts surrounding Saint Louis. The Saint Louis district is the largest school district in the state, surrounded by much smaller suburban districts. No one argues, however, that districts such as Ladue, Clayton, or Rockwood have higher costs because they are smaller than the Saint Louis district.

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