SCHOOL CHOICE ISSUES
IN THE STATE

The Fiscal Impact of a Corporate & Individual Tax Credit Scholarship Program on the State of Indiana

Prepared By:
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Friedman Foundation for Educational Choice

May 2009

School Choice for Indiana:
Many agree with the concept. Some disagree. And some simply want more information. As the public debate continues to grow about how best to provide a quality education to all Indiana children, it is important to know the facts about parent choice, and how parent choice programs have had an impact on communities, parents and students around the country. All of this analysis is done with one goal in mind: The best possible education for all of Indiana's children.

OUR CHALLENGE TO YOU

Our research adheres to the highest standards of scientific rigor. We know that one reason the school choice movement has achieved such great success is because the empirical evidence really does show that school choice works. More and more people are dropping their opposition to school choice as they become familiar with the large body of high-quality scientific studies that supports it. Having racked up a steady record of success through good science, why would we sabotage our credibility with junk science?

This is our answer to those who say we can't produce credible research because we aren't neutral about school choice. Some people think that good science can only be produced by researchers who have no opinions about the things they study. Like robots, these neutral researchers are supposed to carry out their analyses without actually thinking or caring about the subjects they study.

But what's the point of doing science in the first place if we're never allowed to come to any conclusions? Why would we want to stay neutral when some policies are solidly proven to work, and others are proven to fail?

That's why it's foolish to dismiss all the studies showing that school choice works on grounds that they were conducted by researchers who think that school choice works. If we take that approach, we would have to dismiss all the studies showing that smoking causes cancer, because all of them were conducted by researchers who think that smoking causes cancer. We would end up rejecting all science across the board.

The sensible approach is to accept studies that follow sound scientific methods, and reject those that don't. Science produces reliable empirical information, not because scientists are devoid of opinions and motives, but because the rigorous procedural rules of science prevent the researchers' opinions and motives from determining their results. If research adheres to scientific standards, its results can be relied upon no matter who conducted it. If not, then the biases of the researcher do become relevant, because lack of scientific rigor opens the door for those biases to affect the results.

So if you're skeptical about our research on school choice, this is our challenge to you: prove us wrong. Judge our work by scientific standards and see how it measures up. If you can find anything in our work that doesn't follow sound empirical methods, by all means say so. We welcome any and all scientific critique of our work. But if you can't find anything scientifically wrong with it, don't complain that our findings can't be true just because we're not neutral. That may make a good sound bite, but what lurks behind it is a flat rejection of science.

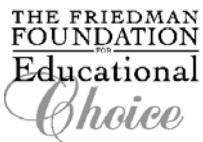# The Fiscal Impact of a Corporate & Individual Tax Credit Scholarship Program on the State of Indiana

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THE FRIEDMAN FOUNDATION

Issues in the State

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Executive Summary

Indiana legislators are currently debating the merits of a proposal to adopt a statewide tuition scholarship tax credit program. The proposed program would make available $5 million in tax credits that businesses and individuals could claim by making donations to non-profit Scholarship Granting Organizations (SGOs). SGO donations would be matched at 50 percent, meaning that the state would provide a 50 cent tax credit for each dollar donated to a SGO. SGOs would in turn distribute scholarships for families to use towards private schooling costs. Eligibility for the program is restricted to students who were not enrolled in private schools in the previous school year and whose household income is at or below 200 percent of the federal free and reduced-price lunch program. Students who received a scholarship in the previous school year from a qualifying non-profit are also eligible.

The purpose of this study is to project the impact of this program on the state's public education costs. It forecasts the immediate costs of the program in foregone state tax revenue and the potential cost savings that result if public school students use the scholarships to migrate to private schools. These estimations will allow policymakers and taxpayers to evaluate the merits of the policy in the context of its financial implications for the state.

Key findings of this study include:

- The program shows savings in the first year even with the state's current five year rolling enrolment adjustment provision (which protects school districts with declining enrollments). At an average scholarship of $1,500 and below the state would realize between $300,000 and $4.7 million worth of savings in the first year. In the second year, scholarships worth $4,000 and below would show savings worth up to $8.8 million. From the third year on, even if demand from public school families is low, we estimate that the program will result in savings regardless of scholarship size and demand.

- Without Indiana's declining enrollment adjustment provision (also known as the deghoster), the savings to the state increase substantially. The deghoster uses a five year average of student counts to create a current year enrollment for funding purposes, which often includes funding for students that aren't there. However, when public schools base funding on accurate and up-to-date counts, the fiscal benefit of the proposed choice program spikes dramatically - savings in the first year would range between $5.3 and $29.5 million based on scholarship value. In fact, the state would save money in all years and at all average scholarship sizes.

- Regardless of demand, the tax credit scholarship program will result in savings to the state. Depending on the level of demand and average scholarship size, savings in the fifth year of the program are estimated to range from $6.4 million to $17.6 million even if you include the rolling five year enrolment adjustment. Even in the worst case scenario – low demand and little capacity – the program will result in savings to the state of 1.6 million in the third year.

- Based on the experiences of other states, we predict all $5 million tax credits will be claimed in the first year of the program. If this is the case, SGOs would receive a total of $10 million in donations and distribute at least $9.5 million as scholarships. Depending on the average size of the scholarships, this will make scholarships available to anywhere from 1,900 to 19,000 students.

- Demand for the program rises dramatically as the value of the scholarship increases. If scholarships of $500 are offered, we predict between 1,382 and 3,799 public school students will seek scholarships. In contrast, if scholarships of $5,000 are offered demand will range from 13,815 to 37,992 public school students.

- Assuming there is a moderate level of demand from public school families, savings in the fifth year of the program are estimated to range from $6.4 million to $17.6 million depending on the average scholarship dollar amount.

- The maximum savings to the state are estimated to be found when average scholarship amounts fall between $1,250 and $1,750, in which case savings could reach $24 million in the fifth year of the program if demand for scholarships from public school families is high.

- Cost savings decline sharply if average scholarship amounts drop below $1,000 because demand for the program from public school families will be low.

- The program is estimated to produce cost savings at any scholarship amount between $500 and $5,000. This suggests that SGOs have substantial flexibility in deciding the average scholarship amount that should be distributed. Scholarship granting organizations could choose to distribute scholarships of larger dollar amounts, which would induce the greatest amount of demand from Indiana's low-income students, without overdue concern that the program would lead to additional costs to the state.

About the Author

David Stuit conducts research for the National Center on School Choice and is also a Ph.D. candidate in Education Policy Studies at Vanderbilt University. His current research focuses on econometric methods for evaluating the effects of school choice programs on student achievement. In addition, he is studying the adequacy of state public education finance formulas and the fiscal impact of school choice programs on states and districts. Stuit is a fellow in the U.S. Department of Education's Institute of Education Sciences' Experimental Education Research Training program. He holds a master's degree in Educational Policy from the University of Colorado-Boulder and is a member of the American Education Finance Association, the Association for Public Policy Analysis and Management, and the Society for Research on Educational Effectiveness.

Friedman Foundation for Educational Choice

The Friedman Foundation for Educational Choice, dubbed "the nation's leading voucher advocates" by the Wall Street Journal, is a nonprofit organization established in 1996. The origins of the foundation lie in the Friedmans' long-standing concern about the serious deficiencies in America's elementary and secondary public schools. The best way to improve the quality of education, they believe, is to enable all parents with the freedom to choose the schools that their children attend. The Friedman Foundation builds upon this vision, clarifies its meaning to the public and amplifies the national call for true education reform through school choice.

Alliance for School Choice

The Alliance for School Choice is the nation's vanguard organization for promoting, implementing, and enhancing K-12 educational choice. In collaboration with a host of national and state allies, we create opportunities for systemic and sustainable educational reform that puts parents in charge.

School Choice Indiana

School Choice Indiana, Inc. is a non-partisan, statewide organization dedicated to the principle that providing parents with real choices in the education of their children will improve educational outcomes and improve the quality of education, both in private and public schools.

Indiana Non-Public Education Association

Indiana Non-Public Education Association (INPEA) INPEA is a membership association of faith based and independent schools. Through both its efforts in advocacy and resourcing, it strives to ensure the quality and viability of its approximately 415 member schools and jurisdictions. It is the association's belief that what is good for the education of all children in Indiana is good for Indiana! By partnering with Indiana's public schools, INPEA members provide quality educational options for Hoosier families and in doing so serve the public good for Indiana residents.

Indiana Catholic Conference

Indiana Catholic Conference represents the five Roman Catholic Dioceses in Indiana and is the public policy voice regarding state and national matters. Further it provides communication and understanding among Catholics throughout the state regarding the mission and role of the Church in the public order, the political and democratic processes, and the issues and developments in public policy.

Agudath Israel of America

Founded in 1922, Agudath Israel of America is a broadly-based Orthodox Jewish movement with chapters in major communities throughout North America. Agudath Israel has emerged as the leading advocate for the religious and civil rights of observant Jews, with a focus on education issues. It sponsors a broad range of projects in the fields of religion, education, children's welfare, and social action.

Educational Choice Charitable Trust

The Educational CHOICE Charitable Trust provides tuition assistance to low-income students, serves as a model for research and legislation, and encourages all schools to improve by introducing competition into the school system.

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Introduction

Tuition tax credit programs have emerged in state legislation as an alternative to vouchers for expanding school choice into the private sector. These programs provide tax incentives for donors who contribute to support school scholarships. Most tuition tax credit programs are designed to result in a dollar-for-dollar reduction in tax liability up to a designated maximum amount, while some result in a reduction of a lesser proportion than the contribution. For most taxpayers, tuition tax credits are more valuable than tuition tax deductions because they result in a direct reduction in liability as opposed to a reduction in taxable income.

Proponents of tuition tax credits see them as viable mechanisms for expanding school choice into the private sector while avoiding the complications of vouchers that stem from the direct distribution of state funds to private schools. Tuition tax credits put greater distance between the state and private schools because the state does not directly distribute taxpayer revenue to private schools; rather, it foregoes a portion of tax revenue from those citizens who voluntarily participate in the program. This perceivably makes the mechanism more robust against legal challenges.

There is evidence that tuition tax credit programs are more palatable to the general public than voucher programs. A 2008 survey by the Program on Education Policy and Governance at Harvard University found that 54 percent of respondents to a national survey were completely or somewhat in favor of a proposal to offer a tax credit for private school expenses to low- and moderate-income parents. Forty percent were completely or somewhat in favor of program to use government funds to pay the tuition of low-income students whose families would like them to attend private schools.

Eight states have adopted tuition tax credit programs (Arizona, Illinois, Florida, Georgia, Iowa, Pennsylvania, Minnesota, and Rhode Island). While no two programs are exactly alike, they can be loosely categorized as:

(1) **Personal tax credits for educational expenses**
Provides tax credits to families who have direct private school expenses, including tuition (Illinois, Iowa, and Minnesota)

(2) **Personal Tax Credit Scholarships**
Provides tax credits to individuals that donate to School Tuition Organizations (SGOs), which are non-profit organizations designed to grant private school scholarships (Arizona, Georgia, Iowa)

(3) **Corporate Tax Credit Scholarships**
Provides tax credits to businesses that donate to SGOs (Pennsylvania, Arizona, Georgia, Florida, Rhode Island)

Study Purpose

Indiana legislators are currently debating the merits of a proposal to adopt a statewide tuition tax credit scholarship program. This study aims to inform this decision-making process by projecting the five year fiscal impact on the state of an individual and corporate tuition tax credit program. It examines the implications of the program on state revenue and public education costs under a variety of scenarios regarding the size and structure of the program.

Understanding the financial implications of the proposed program is an important part of policymakers' due diligence process, particularly in light of the state's current budget situation (Indiana is facing close to a $1 Billion budget shortfall for the 2009 fiscal year). However, the relative size of the fiscal impacts should be kept in perspective so as not to distract from the more important discussion around the merits of the policy for addressing critical public education problems, such as chronically high dropout rates in urban schools and stubborn achievement gaps between low-income and middle class students.

The size of the program considered in Indiana in 2009 represents a small fraction of the state's overall spending on public education. The cost to the state of $5 million in foregone revenue represents less than 0.1 percent of the state's general public education fund.[1] This is not to say that the implications of the program on the state budget are not important to understand, only to suggest the weight they should be provided in the overall evaluation of the public policy merits of tuition tax credit programs.

Levin's (2002) framework for evaluating the merits of school choice programs is useful to consider in order to appropriately position the fiscal impact within the larger evaluation of the individual and corporate tuition tax credit program's merits. This framework identifies four criteria that are important for policymakers and stakeholders to consider when evaluating the merits of the policy:

(1) *Freedom of choice:* The extent to which the program prioritizes the rights of families to choose schools that share their values, educational philosophies, religious teachings, and political outlooks

(2) *Productive efficiency:* The extent to which the program maximizes educational outcomes with available resources

(3) *Equity:* The extent to which the program facilitates fairness in access to educational opportunities, resources, and outcomes by gender, social class, race, language origins, and geographical location of students.

(4) *Social cohesion:* The extent to which the program provides a common educational experience among students that will help them participate in the social, political, and economic institutions

It is important to note that this study is not intended to be a comprehensive evaluation across all four of these dimensions. It only aims only to forecast the immediate costs of the program in terms of foregone state tax revenue and the potential cost savings that result if public school students use the scholarships to migrate to private schools. These estimations will allow policymakers and taxpayers to evaluate the merits of the policy in the context of its financial implications for the state.

The fiscal impact of the individual and corporate tuition tax credit scholarship program is contingent upon a number of factors, including the amount of tax credits the state makes available, the student eligibility requirements of the program, the demand from students for private schools that is incited by the scholarships, and the state's public education funding formula. What follows is a careful attempt to estimate these factors from available data and extant research to assess the overall financial implications of the program on Indiana's state budget.

Indiana's Individual and Corporate Tax Credit Scholarship Program

This section introduces the hypothetical Indiana program that is investigated in this paper. The general concept of the program has been established – it would allow businesses and individuals to donate to non-profit Scholarship Granting Organizations (SGOs) that would in turn distribute private school scholarships to eligible families or pay for fees related to public school transfers. However, many of the specific features of the program have yet to be determined by the state legislature. To inform these determinations, this study estimates the fiscal impact to the state for a variety of different scenarios on the structure of the program.

There are five features of the program that will have noteworthy effects on the fiscal impact: (1) the maximum amount of tax credits that the state makes available, (2) the rate at which the state will match donations to the SGOs, (3) the average dollar amount of an individual scholarship, (4) whether current private school students are eligible to participate, and (5) the type of means-testing mechanism, if any, that is used to determine eligibility. Table 1 displays the five features for the six programs that are currently in place in Pennsylvania, Florida, Arizona, Rhode Island, and Georgia. Below, I describe the various specifications of these features that are investigated in this study.

Table 1

Key Features of Existing Tuition Scholarship Tax Credit Programs					
	Tax Credit Cap	**Donation Matching Rate**	**Scholarship Dollar Amount Cap**	**Eligibility of Current Private School Students**	**Means-Testing**
Pennsylvania	$44m	75% (90% for two year commitment)	None	Yes	Families with household incomes under $50,000 plus $10,000 for each child
Florida	$118m	100%	$3,750	No	Must qualify for free and reduced-price lunch
Arizona Corporate Tax Credit Scholarship Program	$14.4m	100%	$4,200 - $5,500	No	Family incomes below 185 percent of the income eligible for free and reduced price lunch
Arizona Individual Tax Credit Scholarship Program	None	100%	None	Yes	No
Rhode Island	$1m	75% (90% for two year commitment)	None	Yes	Families must be below 250 percent of poverty
Georgia	$50m	100%	None	No	No

Tax Credit Cap

Under the specifications of SB 528, Indiana would only make available $5 million individual and corporate tax credits per year. The program would not be phased in and $5 million would be available in the first year of the program (2009-2010).

Donation Matching Rate

Legislators have settled on a 50 percent tax credit match for donations to SGOs. As a result, the state would provide a 50 cent tax credit for every one dollar that is donated to an SGO. With the current $5 million cap, $10 million in scholarship contributions would be available.

Scholarship credits would be available on a first-come first-serve basis. It is assumed all available tax credits are claimed in each of the first five years of the program. This assumption is relatively safe. Florida's $50 million tax credit limit was reached in the first year of the program and close to 100 percent of the available tax credits were claimed after the cap was raised to $88 million.[2] Pennsylvania's program has experienced similar levels of demand.

Scholarship Dollar Amount Cap

The average dollar amount of the tax credit scholarships is an important determinant of the program's fiscal impact because

it affects the level of demand for the scholarships from public school families, the total number of scholarships that are available to distribute, and the net savings to the state that are found for each public school student that migrates to a private school. To exposit how fiscal impacts vary by scholarship amount, this study estimates models with average scholarship amounts ranging from $500 to $5,000, in $250 increments.
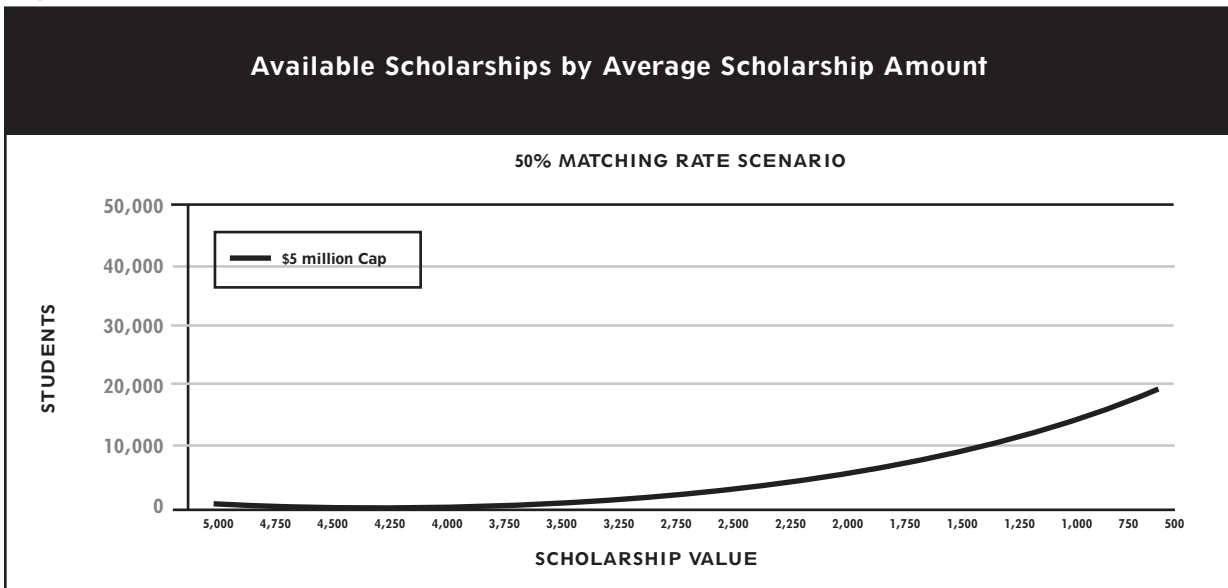
Scholarship Supply

Though the proposal allows for 10% of donations to be used for administrative purposes we assume that the SGOs will retain only five percent, based on historical data, and distribute the rest as scholarships. Under this assumption, the total amount of private school scholarships available in each year is found by dividing ninety five percent of the total donations to the SGOs by the average scholarship amount.

Table 2 displays the number of scholarships that will be available under various average scholarship dollar amounts. Larger average scholarships amounts obviously mean fewer scholarships are available. A $5 million program with a 50 percent matching rate could distribute 1,900 scholarships if the average scholarship dollar amount was $5,000. In contrast, if the same program distributed scholarships of $500, it could provide 19,000 scholarships. Figure 1 presents the relationship between scholarship supply and average scholarship dollar amount.

Table 2

	Available Scholarships by Average Scholarship Amount									
Matching Rate	$5,000	$4,500	$4,000	$3,500	$3,000	$2,500	$2,000	$1,500	$1,000	$500
$5m Cap	50%	1,900	2,111	2,375	2,714	3,167	3,800	4,750	6,333	9,500	19,000

Figure 1

Available Scholarships by Average Scholarship Amount

Eligibility of Private School Students

Students who are currently enrolled in private schools or were enrolled in private schools in previous years are ineligible for tax credit scholarships in this program. This provision has a positive effect on the short term fiscal impact of the program because it ensures the majority of scholarships will be used to help students migrate from public schools to private schools, which in turn lowers the state's public education expenses and offsets the cost of the tax credits.

If private school students were eligible to participate, we can expect all of them would act rationally and seek out the scholarships to discount their current tuition costs. When scholarships are used to subsidize tuition of current private school students, the state does not experience cost savings because the state is not currently paying for these students to be educated in public schools.

The private school exclusion does not apply to approximately 700 low-income students that are currently attending private schools via scholarships from private SGOs such as the Educational CHOICE Charitable Trust. These organizations use funds from private donations to provide scholarships worth one-half the tuition of private schools. To qualify for the program, students must reside in Marion County, qualify for free or reduced-price lunch, and be transferring from public schools or entering Kindergarten. These students are deemed eligible for the program because the majority of them would be attending public schools if they did not

receive the private tuition scholarships.

Means-Testing

The proposed Indiana program restricts eligibility to only those families whose household income falls within 200 percent of the eligibility level for participation in the federal free and reduced-price lunch program. Under this plan, a family of four would need a household income under $78,440 to qualify. We estimate that 71 percent (745,356) of Indiana's public school students would meet the means-testing criteria.[3]

Estimating Demand for Indiana Private Schools

This section estimates the demand for scholarships from public and private school students under each means-testing scenario and at each scholarship amount. By estimating the demand from current public school students we can predict the number of scholarships that will allow public school students to migrate to private schools. The migration estimates can then be used to project the fiscal impact on the state.

The demand for private schooling is mainly driven by two factors: (1) the cost of private schooling in Indiana and (2) the relationship of the cost of private schools to parents' propensity for private schooling in the state.

Table 3

2003-2004 Schools and Staffing Survey Average Tuition Estimates and Indiana Private School Enrollment by School Type and Religious Orientation		
	Indiana Private School Students	U.S. Average Tuition
Elementary		
Catholic	44,471	$3,533
Other religious	21,719	$5,398
Nonsectarian	3,607	$12,169
Secondary		
Catholic	12,529	$6,046
Other religious	14,181	$9,537
Nonsectarian	6,722	$17,413

*NOTE: A school is classified as elementary if it has one or more of grades K–6 and none of grades 9–12. Some non-elementary schools include both elementary and secondary grade levels, such as a K–12 school. Tuition excludes boarding fees

Private School Costs in Indiana

The first step in estimating demand is establishing the current private school costs so that we can determine how far a scholarship will go towards the full cost of attending the private school and consequently how much incentive it will create for public students to migrate to private schools.

In this study, we use average tuition as a measure of the average total cost of private schooling. Critics of tax credit scholarship programs commonly argue that average tuition costs understate the real cost of private schools because they do not include additional fees that private schools charge for things like uniforms, textbooks, and transportation costs. However, many economists have argued that using average tuition estimates may in fact overstate the true cost of private schooling because they do not factor in needs-based assistance programs and academic scholarships that are already widely available from private schools. As a result, the actual tuition costs paid by families are often less the average tuition costs reported.

Indiana does not systematically collect data on private school tuition and most available estimates available rely on small convenience samples. Therefore, national estimates of private school tuition from the U.S. Department of Education's 2003-2004 Schools and Staffing Survey are used to derive an empirically defensible estimate of private school tuition. Using the U.S. private school tuition averages from the SASS disaggregated by grade span (elementary, secondary) and religious affiliation (Catholic, other religious, Nonsectarian), we calculate an average that is representative of Indiana's private school population by multiplying the total students within each of the six subgroups by their national average and then dividing by the total number of private school students. This figure is then adjusted for inflation from 2003 to 2009 and adjusted for Indiana's ACCRA cost of living index (90.3) to account for the fact that prices in Indiana are lower than most states.[4]

This procedure yields an average private school tuition of $6,486 for the first year of the program (2009-2010). This is close to the estimate of $6,350 used in the fiscal impact statement of SB 528 produced by Indiana's Legislative Services Agency's Office of Fiscal and Management Analysis. For subsequent years an annual tuition increase of 3.5 percent is assumed.

Remaining Costs of Private School after Tax Credit Scholarships

Figure 2 displays the estimated remaining private school costs to families after the scholarship. These costs are important for policymakers to consider when determining the dollar amounts of the tax credit scholarships. If policymakers choose to award scholarships on the low-end of the spectrum, they will have capacity to meet the demand of a substantial number of Indiana families. However, it is unlikely the scholarships will be demanded by those low-income families that are in most need of better educational options because the remaining out-of-pocket tuition costs will still be prohibitive. Conversely, larger scholarship amounts would create greater demand from low-income families, but the program could serve fewer students. It is worth noting that in 2007-2008, Florida SFOs awarded scholarships averaging $3,400, which elicited more demand among low-income families than could be satisfied with $88 million in tax credit contributions.

Figure 2

Figure 2: Scholarship Amount and Average Private School Tuition

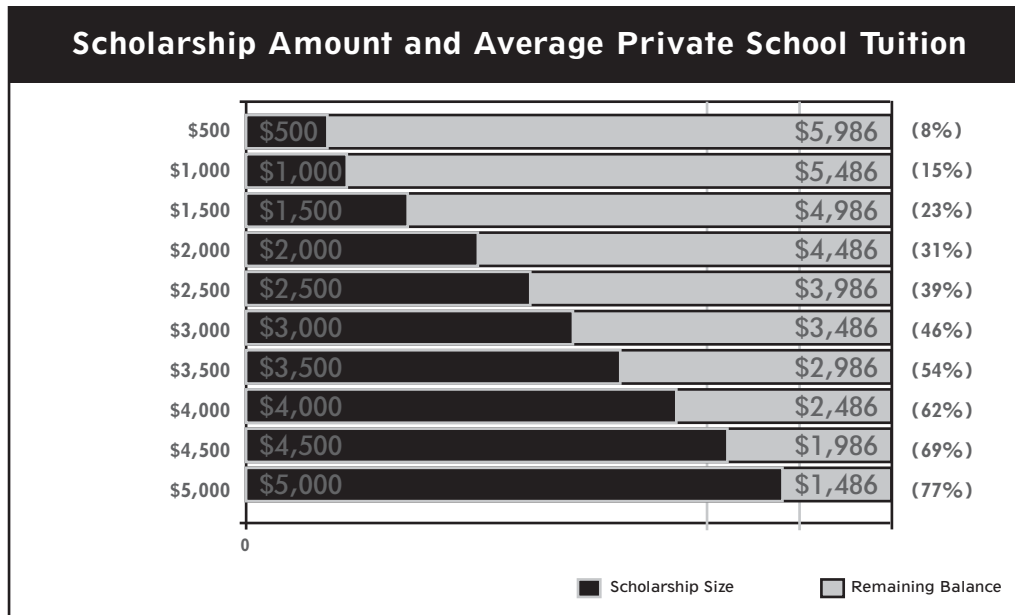| Scholarship	Scholarship Size	Remaining Balance	(%)
$500	$500	$5,986	(8%)
$1,000	$1,000	$5,486	(15%)
$1,500	$1,500	$4,986	(23%)
$2,000	$2,000	$4,486	(31%)
$2,500	$2,500	$3,986	(39%)
$3,000	$3,000	$3,486	(46%)
$3,500	$3,500	$2,986	(54%)
$4,000	$4,000	$2,486	(62%)
$4,500	$4,500	$1,986	(69%)
$5,000	$5,000	$1,486	(77%)

Table 4 shows how far scholarships will go to cover tuition costs at different types of private schools. This table allows some predictions on which types of private schools will be demanded by scholarship recipients. Catholic schools are likely to be the most affordable private school option. Scholarships of over $3,500 are estimated to cover all of the cost of tuition at Catholic elementary schools.

Demand will likely be higher among families with elementary-age students. Private school tuition prices increase by 30 to 50 percent in high school and many families may find the costs prohibitive even after the scholarship. Families may utilize the private school scholarships in elementary school and transfer back into public schools when high school begins because of the rise in costs.

Price Elasticity of Demand

With an estimate of average private school tuition established, one can estimate the private school demand by making some assumptions on how families will respond to the tuition cost reductions found via the scholarships. Estimating the demand for private schools requires a number of assumptions on the school selection process of Indiana families. This decision-making process can be simplified in a cost-benefit framework, where the costs of private school tuition plus the costs of foregoing the public education that is paid for by default with local, state, and federal tax dollars, are weighed against the educational, social, and psychological benefits of enrolling in the private school.

One method for estimating the increase in demand that results from a reduction in tuition price is to model this decision-making process using multivariate regression. A regression model would predict demand for Indiana private schools based on a measure of tuition price and a variety of school and family factors. The model would yield an estimate of the price elasticity of demand, which is the proportional change in private school demand that associates with a change in tuition price via the scholarships. For example, one might find that a 1 percent decrease in tuition price associates with a 1.5 percent increase in private school demand.

This study is unable to generate a valid estimate of the price elasticity of demand via multivariate regression because it lacks the data on Indiana's private schools and households that are necessary to the proper estimation. Therefore, our estimates of price elasticity of demand rely on published empirical estimates of the price elasticity of demand, while also considering the experiences of states with existing private school scholarship programs.

Table 4

Scholarship Contributions to Private School Tuition by Private School Type						
	CATHOLIC		OTHER RELIGIOUS		NON-SECTARIAN	
	Elem.	Sec.	Elem.	Sec.	Elem.	Sec.
Avg. Tuition	$3,661	$6,265	$5,593	$9,882	$12,610	$18,043
$5,000	137%	80%	89%	51%	40%	28%
$4,750	130%	76%	85%	48%	38%	26%
$4,500	123%	72%	80%	46%	36%	25%
$4,250	116%	68%	76%	43%	34%	24%
$4,000	109%	64%	72%	40%	32%	22%
$3,750	102%	60%	67%	38%	30%	21%
$3,500	96%	56%	63%	35%	28%	19%
$3,250	89%	52%	58%	33%	26%	18%
$3,000	82%	48%	54%	30%	24%	17%
$2,750	75%	44%	49%	28%	22%	15%
$2,500	68%	40%	45%	25%	20%	14%
$2,250	61%	36%	40%	23%	18%	12%
$2,000	55%	32%	36%	20%	16%	11%
$1,750	48%	28%	31%	18%	14%	10%
$1,500	41%	24%	27%	15%	12%	8%
$1,250	34%	20%	22%	13%	10%	7%
$1,000	27%	16%	18%	10%	8%	6%
$750	20%	12%	13%	8%	6%	4%
$500	14%	8%	9%	5%	4%	3%

There have been a number of efforts to estimate the price effect on demand for private schools. A review of the research literature has identified eleven studies that published estimates of the tuition price elasticity of demand for private schools. These studies are summarized in Table 6 and collectively do not give a clear indication of how a decrease in tuition price will change private school demand. A number of studies were unable to identify a statistically significant price effect after controlling for family and community factors. For those that did yield statistically significant effects, all estimates were negative, indicating an increase in tuition price associated with a decrease in demand, or vice versa.

The estimates shown in table 5 are to be interpreted with caution. Most of these estimates are derived from data with substantial shortcomings, three of which are worth discussing. First, many studies rely on data that is outdated; using estimates from 1980 census data would require us to make the assumption that private school consumer behavior has remained constant over the past three decades. Second, most studies rely on cross-sectional data. Estimates from cross-sectional studies are particularly unreliable because they are unable to evaluate how people's propensity for private schooling changes over time due to changes in private school tuition. Third, most studies used poor measures of private school tuition. Lankford et al (1995) discuss this issue in depth and conclude that they have little confidence in their own estimates, or others, because of the quality of the tuition data.

This study estimates demand under three conservative assumptions on the price elasticity of demand: (1) low demand, (2) moderate demand, and (3) high demand. We use this approach rather than make an untenable assumption on the exact form of the price elasticity of demand. This framework will allow policymakers and stakeholders to understand how the fiscal impact of the program varies based on demand and weigh the financial risk versus the financial potential of the program.

For the low price elasticity of demand estimate, we use the lowest published statistically significant price estimate of price elasticity of demand: Frey's (1983) estimate of -0.4. A price elasticity of demand of -0.4 indicates that a 10 percent reduction in private school tuition price leads to a four percent increase in private school enrollment.

The high price elasticity of demand model takes the average of the elasticity estimates presented in table 4, which is -1.1.[6] A price elasticity of -1.1 indicates that a 10 percent reduction in private school price leads to an 11 percent increase in private school demand. It should be evident to the reader that the average of the published estimates is itself a conservative estimate of private school demand. We use this as an upper bound in light of the current conditions in the U.S. economy. Average household discretionary income is on a decline and consequently demand for private schooling may be substantially lower than in previous years.

Notably, the high demand estimate is similar to the level of demand experienced in Florida CTC program. In 2007-2008, roughly 30,000 students, who were eligible for the program because they qualified for free or reduced price lunch, sought out scholarships.[7] This represented a 50 percent increase in private school demand among FRL eligible students.[8] This demand was created by an

average scholarship value of $3,500, which is approximately a 50 percent drop in average private school tuition in Florida. From these figures one can derive that a 1 percent decrease in tuition price associated with a 1 percent increase in demand, which is a price elastictity of -1.0.

For the moderate price elasticity of demand estimate, we -0.75, which is the average of the low and high price elasticity of demand estimates.

Table 5

Estimates of Price Elasticity of Demand for Private Schools				
Study	**Year**	**Location**	**Data**	**Price Elasticity of Demand**
Frey	1983	National	State	-0.4
Long and Toma	1988	National	Family	No statistically significant effect
West and Palsson	1988	National	State	-1.5
Lankford and Wyckoff	1992	New York	Student	-0.92
Keeler and Kriesel	1994	Georgia	District	-1.07
Lankford et al.	1995	National	Student	-2.22
Chiswick and Koutroumanes	1996	National	Family	−0.48
Gwartney and Stroup	1997	National	Family	-1.1
Buddin et al.	1998	California	Family	No statistically significant effect
Fernandez and Rogerson	1994	National	Family	-0.80
Cohen-Zada and Justman	2003	National	Family	No statistically significant effect

Estimates of Scholarship Demand from Public School Students

Using the estimate of tuition, we are able to estimate the number of public school students who will be induced to move from the public sector to the private sector at each scholarship value under the three demand elasticity assumptions. These estimates are derived using only the population of public and private school students that meet the means-testing criteria.

Figure 3 presents the estimates of demand for private schooling from public school students when the programs are fully funded in the fifth year. Demand for private schooling is a linear function of the average scholarship dollar amount – as scholarship amounts increase, private school demand increases. Note that relationship of private school demand to average scholarship amount is the same under all six program designs.

Estimates of Scholarship Demand from Private School Families with Students Enrolling in Kindergarten after the Program Begins in 2009-2010

As mentioned, students who previously attended private schools are not eligible for scholarships in the program. This restriction cannot apply to students that enroll in Kindergarten after the program was initiated because there is no way for the state to discern the future schooling intent of families whose children do not have a schooling history. Consequently, there will be a number of families whose Kindergarteners will be eligible for the scholarship even though they will attend private schools regardless of whether or not they receive the scholarship. The demand from these families is inelastic –if the scholarship is available, we can expect that they will act rationally and pursue it regardless of the scholarship dollar amount (assuming it is not trivial). If these students receive scholarships as kindergarteners they will be eligible for a scholarship in the following year as first graders and in every year subsequent to a year in which they receive a scholarship. This is a critical factor to consider when estimating the fiscal impact of the program. It would be inaccurate to assume there are cost-savings associated with providing scholarships to these students because the state would not be paying to educate them in the future had the program not existed.

To illustrate, consider a family with two children that meets the means-testing requirements for participating in the program. Their first child is in second grade and is enrolled in a private school in the 2008-2009 school year (prior to the start of the program). Their second child will be enrolling in Kindergarten in the fall of 2010 (after the start of the program). The family fully intends to enroll the second child in a private school regardless of the tuition cost. It is evident that the first child will be ineligible for the program because the state has proof that the parents selected private schooling in 2008-2009. However, the second child will be eligible for a scholarship even though the family will send him/her to private schools with or without it because there is no fair way for the state to discern the parents' intent. If this child receives a scholarship, it would be incorrect to assume there are resulting cost-savings to the state because the state would not be paying the costs of a public education

for this child had the program not existed. In this sense, a scholarship would be going to a private school student.

Table 6 presents estimates of the number of private school students who will be eligible for the program during the first five years. In 2009-2010, we estimate there will be 4,209 Kindergarten students who are eligible for the program, but will attend private schools regardless of whether or not they receive scholarships. The number of private school students who will be eligible will gradually increase over time because a portion will be awarded scholarships as Kindergarteners, in which case they will be eligible in the following year. For example, a Kindergartener in 2009-2010 that is awarded a scholarship will be eligible as a 1st grader in 2010-2011. Note that when scholarship values are low, most of these private school students will receive scholarships because the supply of scholarships is high and the demand from public school students is low.

Figure 3

Estimate of Private School Demand from Public School Students
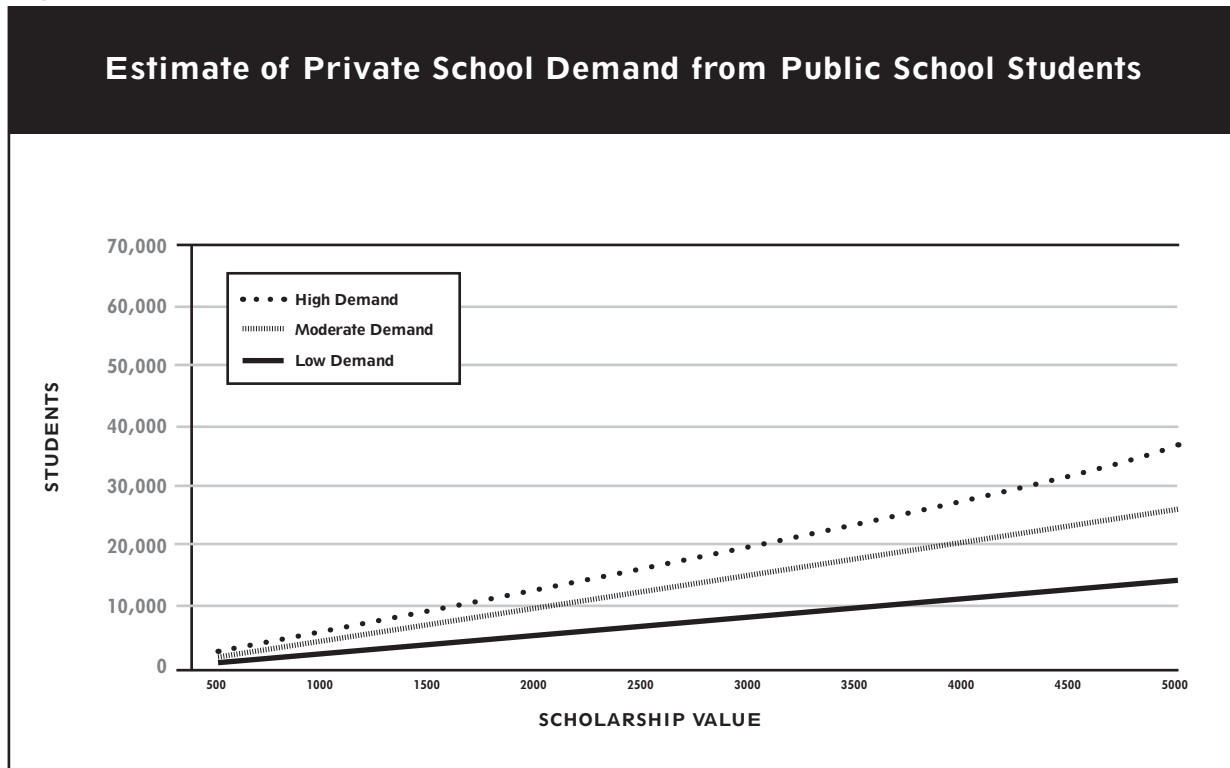
Table 6

Estimates of The Number of Eligible Private Students During the First Five Years of the Program					
Average Scholarship Amount	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
$5,000	4,209	4,831	5,059	5,450	6,177
$4,500	4,209	4,934	5,190	5,637	6,461
$4,000	4,209	5,076	5,374	5,904	6,847
$3,500	4,209	5,276	5,644	6,300	7,394
$3,000	4,209	5,574	6,066	6,926	8,206
$2,500	4,209	6,044	6,773	7,996	9,490
$2,000	4,209	6,855	8,078	10,008	11,699
$1,500	4,209	8,565	10,850	13,241	15,935
$1,000	4,209	8,565	13,073	17,739	22,568
$500	4,209	8,565	13,073	17,739	22,568

Table 7

Moderate Demand Estimates on # of Scholarships to Public School Students						
($5m 50% Scenario)						
Average Scholarship Amount	Demand from Eligible Private School Families	Demand from Public School Families	Total # of Available Scholarships	% of Scholarships to Public School Families	Scholarships to Public School Students	% of Public School Demand Met
$5,000	5126	25904	1900	83%	1586	6%
$4,500	5193	23313	2111	82%	1727	7%
$4,000	5286	20723	2375	80%	1892	9%
$3,500	5422	18133	2714	77%	2090	12%
$3,000	5629	15542	3167	73%	2325	15%
$2,500	5972	12952	3800	68%	2601	20%
$2,000	6599	10362	4750	61%	2902	28%
$1,500	7914	7771	6333	50%	3138	40%
$1,000	11187	5181	9500	32%	3007	58%
$500	21340	2590	19000	11%	2057	79%

Estimates of Scholarships Awarded to Public School Students

With estimates of the scholarship supply and demand, we are able to estimate the number of scholarships that will be awarded to students that will migrate from public schools to private schools. This is a critical figure for assessing the fiscal impact of the program and determining the target efficiency of the program. Target efficiency is a measure of how much of the intended tax credit resources go to the intended beneficiaries as opposed to subsidizing the tuition of private school families (Belfield, 2001).

Table 7 presents the number of scholarships that will be granted to public school students in year five (2013-2014) under the moderate demand assumption. The last column of each table shows the percent of public school demand that is predicted to be met at each scholarship value. If scholarship amounts of $500 are offered, 100 percent of public school demand can be satisfied, but demand will be low (2,590 students). Conversely, if scholarships of $5,000 are offered, demand for the program will be high (25,904 students), but a smaller portion of demand can be met.

The target efficiency of the programs (i.e. the percentage of scholarships that go to help students migrate from public to private schools) is highest when the scholarship values are highest. If the program provides average scholarship amounts of $5,000, over 80 percent of the funds will go to help students migrate from public to private schools. Low scholarship values will elicit relatively little demand from public school students and accordingly most scholarships will go to subsidize the tuition of families that will attend private schools regardless of whether or not they receive the scholarship.

Supply of Private Schools

An additional consideration in this analysis is the supply of private schooling and the extent to which the new demand for private schooling can be satisfied by this supply. The tax credit scholarships will only work to help public students migrate to private schools if there are actually private schools where the scholarships can be used.

In this study we assume there is enough surplus in current private schooling to satisfy the new demand created by the scholarships. Under the scenarios presented above, a maximum of 3,138 new private school seats would be needed to satisfy public school demand. According to data from the NCES Private Schools Survey, in 2006-2007 there were 588 private schools operating in Indiana. These schools had with an average enrollment of 175 students.[9] An influx of 3,138 represents close to a three percent increase in private school enrollment and an average enrollment increase of almost six students per school. Given that private school enrollment in Indiana has been on a steady decline over the past decade, we assume that an influx of six students per school would be welcomed. From 2002 to 2007, private school enrollment declined by an average of 14 students per school, so the maximum demand scenario would help these enrollment rates rebound to where they had been in the past.

The Fiscal Impact on the State of Indiana

The basic logic behind this exercise is that the state will save money as students migrate to private schools because the per-pupil cost of the scholarship is less than the per-pupil cost to the state of providing public education.[10] With the estimates of the number of public students that would seek private school scholarships in hand, one can calculate the fiscal impact on the state by multiplying these estimates by the

per-pupil savings the state would incur because of declining public school enrollment and then subtracting the total savings by the total cost of the program in foregone state revenue:

Fiscal Impact = (# Public to Private Migrants X Avg. Per Pupil State Aid) – (Tax Credits)

State Per-Pupil Spending

To understand the impact of declining public school enrollment on the state public education budget, one first needs to determine the portion of the state's expenses that vary with student enrollment. In the state of Indiana, these variable expenses are almost exclusively found in the *Basic Grant* appropriation. The *Basic Grant* represents approximately 94 percent of the state's public education budget and 98 percent of the portion of the budget that is distributed based on student enrollment. It primarily consists of the state's tuition support for regular education, special education, and career/technical education.

Basic Grant appropriations are based on a one-time enrollment count taken by districts in the fall, with kindergartners counted as one-half of students. The table below displays the projected total public school enrollment in Indiana for the following five years.[11] To get a baseline measure of average state aid per pupil in the district that is variable with enrollment, we divided the state's total basic grant appropriations in 2009-2010 by the enrollment count. To estimate per-pupil funding in subsequent years we assume an annual increase in state aid per pupil of 3.7 percent based on historical trends.[12]

Table 8

Per-Pupil State Education Spending			
	Total Basic Grant Appropriation	Total Public School Enrollment	State Aid Per Pupil
2009-2010	$6,509,000,000	1,046,849	$6,218
2010-2011	$6,748,350,015	1,046,619	$6,448
2011-2012	$7,015,624,011	1,049,249	$6,686
2012-2013	$7,300,773,670	1,052,937	$6,934
2013-2014	$7,592,523,440	1,055,944	$7,190

Indiana Department of Education (http://mustang.doe.state.in.us/TRENDS/project.cfm?corp=0000)

Indiana's Declining Enrollment Adjustment

Indiana's complex public education funding formula includes a "declining enrollment adjustment" that makes the calculation more complicated than simply multiplying the number of migrating students by the per-pupil spending estimates. The state's funding formula determines the amount of state revenue a district will receive by multiplying a per-pupil foundation amount by a complexity index, which is a weighted enrollment count that gives greater weight to economically disadvantaged students. The sum of the weighted enrollment amount is then subject to the declining enrollment adjustment that is designed to offset the revenue loss of districts with large declines in students. This is done by taking a five year rolling average of the actual enrollment counts. The five year average is compared to the actual enrollment count and the greater figure is used to determine state appropriation. This is one of the most generous enrollment adjustments in the country and effectively insulates the districts from having to adjust their budgets due to annual enrollment fluctuations.[13]

The declining enrollment adjustment has important implications for the short term fiscal impact of the program. It essentially guarantees that Indiana's department of education will not realize a dramatic cost reduction in the initial years of the program because the state is committed to offsetting enrollment declines. However, after the program has been in place for five years, we can expect that the adjusted enrollment figure from the five year running average will not be substantially greater than the actual enrollment figure, in which case the true fiscal impact of the program will be realized. The removal of this adjustment would create substantial savings from the outset of the program, and would help the program produce positive fiscal returns in a much shorter time period.

State Fiscal Impact Estimates

We estimate the impact of the program on state public education costs with the declining enrollment adjustment under program design and assuming low, moderate, and high private school demand. The results of these estimates for the fifth year of the program are presented graphically in Figure 4. This shows the net difference between the savings due to public to private migration and the costs of the program in tax credits. Thus, when the line crosses zero the program is estimated to be revenue neutral.

Collectively, these estimates allow for the general conclusion that policymakers have a great deal of flexibility in how they design the program without overdue concern that it will yield additional financial costs to the state. We estimate that the program will lead

to cost savings even if demand for the program is low. The maximum cost savings will be realized when the average scholarship amount is $1,250 for a program with a $5 million cap. There are no scenarios where there may be a real threat of the program not achieving revenue neutrality by year five.

Table 9 displays the fiscal impact estimates in the first five years of the program under the moderate demand assumption. The program is not revenue neutral in 2009-2010 because the state's declining enrollment adjustment dampers the real public education enrollment decline that results from the program. However, by year three, all program designs are estimated to result in cost savings to the state, and in most scenarios, positive results are seen in year two.

Recall that target efficiency (i.e. the proportion of scholarships going to help students migrate from public schools to private schools) is maximized when the average scholarship amounts is $5,000. We predict that the program will be revenue neutral in year five when target efficiency is maximized. Therefore, policymakers could choose to distribute scholarships of larger dollar amounts, which would induce the greatest amount of demand from Indiana's low-income students, without concern that the program would lead to additional costs to the state.

Figure 4

Net Fiscal Impact in Year 5 for $5 Million Cap with 50% Matching Rate
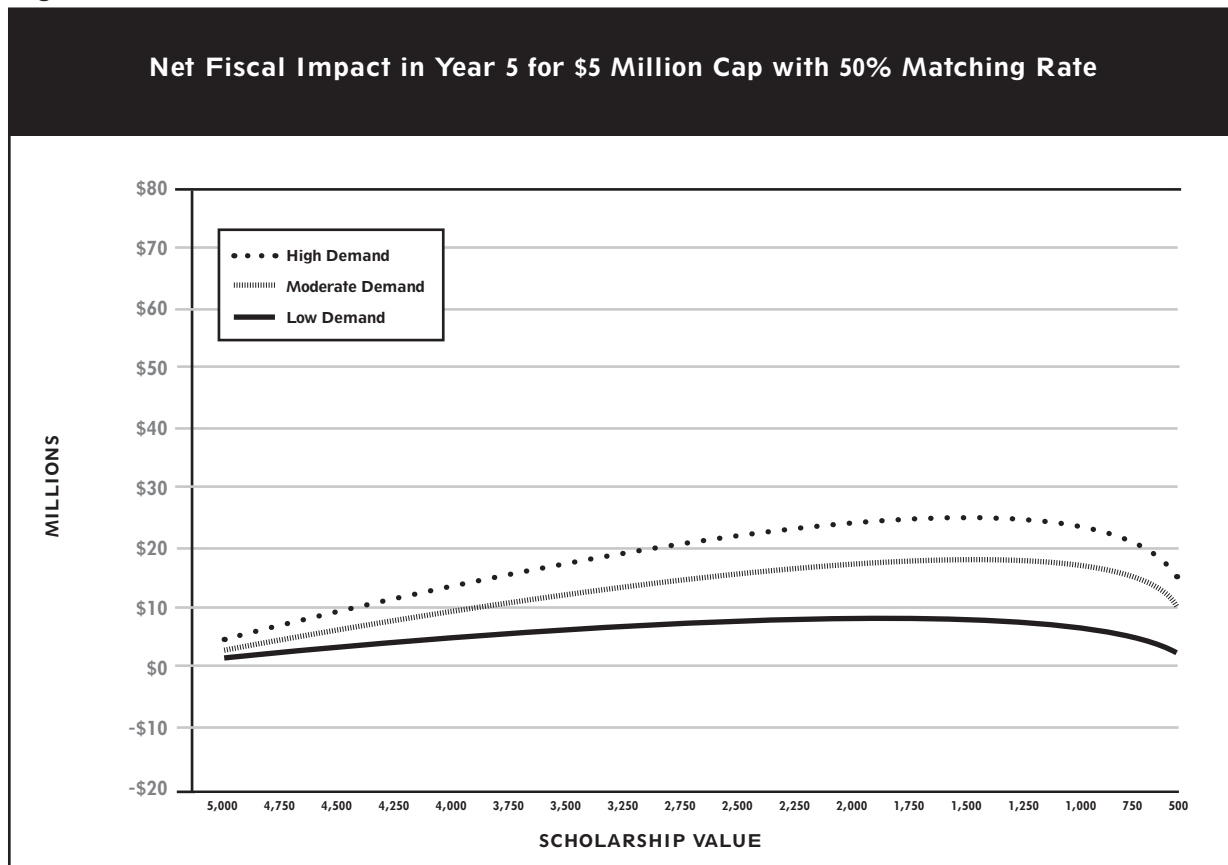
Table 9

Fiscal Impact of a Tax-Credit Scholarship Program on the State (Millions)
Moderate Demand Scenario $5 Million Cap with 50% Matching Rate, with 5 Year Declining Enrollment Adjustment Rate

Year	$5,000	$4,750	$4,500	$4,250	$4,000	$3,750	$3,500	$3,250	$3,000	$2,750	$2,500	$2,250	$2,000	$1,750	$1,500	$1,250	$1,000	$750	$500
2009-2010	($2.9)	($2.8)	($2.7)	($2.6)	($2.5)	($2.4)	($2.2)	($2.0)	($1.8)	($1.6)	($1.3)	($1.0)	($0.6)	($0.2)	$0.3	$1.0	$1.9	$3.1	$4.7
2010-2011	($0.7)	($0.6)	($0.3)	($0.1)	$0.1	$0.4	$0.7	$1.1	$1.5	$1.9	$2.4	$3.0	$3.6	$4.4	$5.2	$6.1	$7.1	$8.8	$8.8
2011-2012	$1.6	$1.9	$2.2	$2.5	$2.9	$3.3	$3.8	$4.3	$4.9	$5.6	$6.3	$7.1	$8.0	$9.0	$10.1	$11.2	$12.0	$13.4	$13.0
2012-2013	$4.0	$4.4	$4.9	$5.3	$5.8	$6.4	$7.0	$7.7	$8.5	$9.4	$10.3	$11.4	$12.5	$13.8	$15.0	$16.1	$16.8	$14.3	$12.3
2013-2014	$6.4	$6.9	$7.4	$8.0	$8.6	$9.3	$10.0	$10.8	$11.7	$12.7	$13.7	$14.8	$15.9	$16.9	$17.6	$17.6	$16.6	$14.0	$9.8

As previously observed, Indiana's declining enrollment adjustment adversely effects the fiscal benefits of any choice program in Indiana. However, if Indiana based public school funding on accurate, same-year counts of student enrollment, the state would stand to save millions of dollars each year in the beginning of the program. The table below shows the fiscal impact of the proposed school tuition scholarship tax credit program when public funding reflects current year student population counts. In this scenario, Indiana stands to save considerably more in a shorter amount of time while per-student funding rates in public schools would remain roughly the same.

Table 10

Fiscal Impact of a Tax-Credit Scholarship Program on the State
(5 Million in Tax Credits Claimed, 50% Matching Rate, No Declining Enrollment Adjustment)

Year	$5,000	$4,750	$4,500	$4,250	$4,000	$3,750	$3,500	$3,250	$3,000	$2,750	$2,500	$2,250	$2,000	$1,750	$1,500	$1,250	$1,000	$750	$500
2009-2010	$5.3	$5.8	$6.3	$6.9	$7.5	$8.2	$9.0	$9.9	$10.9	$12.1	$13.4	$14.9	$16.8	$19.0	$21.7	$25.1	$29.5	$22.5	$13.3
2010-2011	$5.5	$6.0	$6.5	$7.1	$7.7	$8.4	$9.1	$9.9	$10.8	$11.8	$12.9	$14.2	$15.5	$16.9	$18.3	$19.5	$19.9	$22.2	$13.4
2011-2012	$5.8	$6.3	$6.8	$7.4	$8.0	$8.7	$9.4	$10.2	$11.1	$12.1	$13.1	$14.3	$15.5	$16.6	$17.6	$18.0	$17.4	$15.5	$13.4
2012-2013	$6.1	$6.6	$7.1	$7.7	$8.3	$9.0	$9.7	$10.5	$11.4	$12.4	$13.4	$14.5	$15.7	$16.7	$17.5	$17.7	$16.8	$14.3	$12.3
2013-2014	$6.4	$6.9	$7.4	$8.0	$8.6	$9.3	$10.0	$10.8	$11.7	$12.7	$13.7	$14.8	$15.9	$16.9	$17.6	$17.6	$16.6	$14.0	$9.8

Without the declining enrollment adjustment, the individual and corporate tax credit would make an immediate positive fiscal impact. With moderate demand, offering scholarships averaging $5,000 would create over $5 million in savings to the state in the program's premier year. If these scholarships averaged $2,500 the program would jump from a projected cost of $1.3 million to a savings of $13.4 million in 2009-2010. In effect, the removal of the declining enrollment adjustment stops the slow growth of savings seen in Table 9, and instead gets right to the maximum savings. As can been seen in Table 10, the difference in savings over the first five years of a program that accurately counts public school students is tremendous.

Endnotes

[1] Florida's corporate tuition tax credit program, which is the largest in the nation, provides $118 million in tax credits, which is approximately 0.5 percent in foregone revenue towards the state's $21.5 billion education budget.

[2] The Corporate Income Tax Credit Scholarship Program Saves State Dollars – Office of Program Policy Analysis and Government Accountability - December 2008 Report No. 08-68

[3] Based on author's calculation from the U.S. Census 2007 American Community Survey Public Use MicroData Sample; Indiana Enrollment Data; 2005-2006 NCES Private School Survey

[4] The ACCRA *Cost of Living Index* measures relative price levels for consumer goods and services in participating areas. The average for all participating places in each quarter equals 100, and each participant's index is read as a percentage of the average for all participating places. This can be discounted then based on a cost of living adjustment, Indiana has the 13 lowest cost of living according to the ACCRA. Prior to the ACCRA adjustment, I arrive at an average tuition of $7,183. Inflation adjustment is made using the bureau of labor statistics inflation calculator: http://www.bls.gov/data/inflation_calculator.htm; SASS Question: What is the highest ANNUAL tuition charged by this school for a full-time student?

[5] http://nces.ed.gov/programs/digest/d07/tables/dt07_056.asp?referrer=list

[6] If these studies reported more than one estimate, we report the smaller of the two estimates. For example, Lankford and Wyckoff (1992) estimated a price effect of -0.92 for elementary students, but the estimate for high school students was -3.67.

[7] http://www.floridaschoolchoice.org/Information/CTC/quarterly_reports/ctc_report_feb2009.pdf

[8] Using PUMS 2007 data, I estimate 60,717 private school students in Florida were eligible for free or reduced-price lunch.

[9] http://nces.ed.gov/surveys/pss/pssdata.asp

[10] Under Indiana's newly amended House Enrolled Act 1001, any surplus in education appropriations revert back to the state's general fund.

[11] Digest of Public School Finance in Indiana; http://mustang.doe.state.in.us/TRENDS/project.cfm?corp=5385

[12] The state's total Basic Grant Appropriation in 2009-2010 is substantially larger than in 2008-2009, which was $4,119,600,000. This is because of the House Enrolled Act 1001 in 2008 eliminated school property tax levies from state public tuition support. Prior to HE 1001-2008, districts were responsible for funding a large portion of tuition through local property taxes. Under the new funding program, the state assumes full responsibility of public school tuition support and accordingly the total state appropriation increased to $6,509,000,000.

[13] See Aud (2005) for a critique of Indiana's funding formula.

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