

Arizona's Tuition Tax Credit Program's Limited Impact on Private School Enrollment

By Dave Wells, Ph.D.¹

Executive Summary:

In 1997 Governor Fife Symington signed into law allowing individual taxpayers the opportunity to deduct from their state income tax donations to Student Tuition Organizations (STOs) whose purpose was to use at least 90 percent of their funds to support scholarships to students attending private school.

Since its inception, the individual income tax credit program has grown considerably from 3,365 scholarships in 1999 to 28,321 scholarships in 2008. Today, assuming students do not receive multiple scholarships, more than half of private school students receive monetary assistance through the program. It has been augmented in the last few years by the corporate tuition tax credit, which provides scholarships that are required to be awarded to students with family incomes of no higher than 185 percent of the income that qualifies for the free and reduced lunch program (\$72,557 for a family of four in 2008).

For Fiscal Year 2008, after adjusting for savings for students switching from public to private schools, the individual and corporate tax credit private school scholarship programs cost the general fund between \$42 and \$54 million.

Outside of arguments regarding whether the program has educational merit, given Arizona's unprecedented budget shortfall, debate has raged over whether this program has been a net benefit or a net loss to taxpayers. Two reports have been released in recent months which purport to estimate the number of private school students who would be in public school if not for the private tuition tax credit scholarships and, hence, the cost of the program to taxpayers.

The *Arizona Republic* assumed all private school enrollment growth since the program's inception was due to the scholarships, and found the general fund lost \$21 million annually due

¹ Holds a doctorate in Political Economy and Public Policy and is a Senior Lecturer at Arizona State University. The views expressed do not represent the university. Feedback from Larry Mohrweis of Northern Arizona University and Jenifer Boshes of Arizona State University was greatly appreciated. Any remaining errors or omissions are the authors. The author did not receive outside remuneration for this study.

to the program, though the costs were recovered if local tax savings were considered. Professor Charles North of Baylor University, hired by the Center for Arizona Policy, estimated that due to financial need evaluated by many Student Tuition Organizations in awarding scholarships that 11,697 or more students might be in private school instead of public school (including charters). Prof. North miscalculated the General Fund savings with his model. If you make the correction his savings approximately match the costs to the General Fund, so the program would be revenue neutral. Overall, the credits by his estimate provide net savings due to added savings to local entities.

Both estimates were overly simplified and vastly overstate the number of students who would otherwise be in public school. The *Republic* didn't consider the impact of charters on private school enrollment or that the state's K-12 population had grown much faster than the growth of private school enrollment, 38 to 17 percent, during the time when the scholarship programs had been in place. Thus, we lack justification for assuming all enrollment growth in private schools was due to the credits.

Prof. North's estimate is far more speculative than his precise number implies as he performed a simple calculation based on assuming 50 percent of students receiving scholarships from the STOs he identified as making financial need a high priority and then assigned 25 percent of students for the remainder to come up with approximately 40 percent of scholarship recipients overall.

This study compares Arizona's experience with private school enrollment with two states: one which has a robust charter programs but no private scholarship program, California, and one, Florida, which has both, but unlike Arizona the private scholarships are required to go to students with family incomes no greater than 185 percent of the poverty line. Despite operating a larger program, Arizona's private school enrollment trends are similar to Florida, but stronger than California, suggesting a limited enrollment gain due to the credits. Using four different estimation techniques, the gains in private school students ranges from a low of 470 students using regression analysis to a high of 3,030 students if we presume the estimated portion of students enrolling in private school in Florida due to scholarships can be applied to Arizona. The average of the four measures is 1,600 students. Thus, for Fiscal Year 2008, after adjusting for savings for students switching from public to private schools, the individual and corporate tax credit private school scholarship programs cost the general fund between \$42 and \$54 million with \$49 million being the average across estimators.

PRIOR RESEARCH

Both the *Arizona Republic* and *East Valley Tribune* have done investigations and come to similar conclusions. Both found widespread practices of donation recommendations (and in some cases earmarking) where donations were given with the recommendation that they benefit specific students. In many cases relatives, who would owe state taxes anyway, have donated with recommendations that a family member receive a scholarship. In other cases, parents swap donations, with one parent recommending the other's child and vice-versa. All of these practices are legally questionable under federal charitable deduction guidelines and could place the STOs, who are federal 501(c)3 organizations, under sanction for violations or at risk of losing their federal 501(c)3 status. However, Arizona law does not address this issue.²

The *Tribune* noted that most donations were of this nature, and an Arizona Department of Revenue analysis of those using the credit for calendar year 2003 found those filing for the credit were consistent with the demographic of those most able to afford private school as well as for older relatives who might be supporting through the credit the education as a great aunt, great uncle or grandparent. Those filing for the credit had an average income nearly \$100,000 greater than the average filer, \$140,794 compared to \$45,097, representative of family demographics of those who can afford to send their child to private school. Those filing for the credit were far more likely to married than all returns (76 to 43 percent), but equally likely to have dependents (40 to 38 percent). Those claiming the credit were also twice as likely to be 65 years of age or older compared to all filers (30 to 14 percent).³

When the *Republic* completed their analysis of the cost, they made a simple assumption that all of the growth in private school enrollment since the inception of the tuition tax credit, 7,530 students, could be attributable to the credit. While the assumption on its face appears very friendly toward the credit, they did not provide any empirical documentation to justify the assumption. In fact, the anecdotal stories they collected as well as the *Tribune's* analysis, suggested quite the opposite, that significant numbers of students attending private school would be attending private school even if the credit disappeared. Their assumption can be consistent with this, as the number of scholarships awarded far exceeds this growth. Using this figure the Republic calculated the General Fund lost \$21 million from the tax credit, but when

² "Rigged Privileged: An Investigation into Arizona's private school tax credit program," Aug. 1, 4, and 6, 2009. <http://www.eastvalleytribune.com/page/taxcredits> (retrieved November 20, 2009). "Hansen, Ronald J. and Pat Kossan, "Tuition-aid benefits wealthy families, raises worry," *Arizona Republic*, August 1, 2009. <http://www.azcentral.com/news/articles/2009/08/01/20090801sto-whobenefits0801.html> (retrieved January 13, 2010).

³ "Breakdown of Tax Year 2003 Filers Claiming The Private School Tuition Organization Credit," Office of Economic Research & Analysis (OERA) within the Arizona Department of Revenue (ADOR), <http://www.eastvalleytribune.com/pdf/2003.323.analysis.pdf> (retrieved November 20, 2009).

local property taxes were considered, on the whole the state roughly broke even, coming out \$3 million ahead.⁴

However, Arizona's total school enrollment in both public and private schools increased 38 percent since the inception of the tax credit program, but private school enrollment has increased by less than half that amount, 17 percent, and Arizona's percentage of students in private school compared to the United States as a whole fell from 1998-1999 to 2007-2008. Hence, the *Republic's* assumption that all growth in students was due to the credit was not empirically demonstrated.

Arizona's total school enrollment in both public and private schools increased 38 percent since the inception of the tax credit program, but private school enrollment has increased by less than half that amount, 17 percent, and Arizona's percentage of students in private school compared to the United States as a whole fell from 1998-1999 to 2007-2008. Hence, the *Republic's* assumption that all growth in students was due to the credit was not empirically demonstrated.

The Center for Arizona Policy hired Baylor University economics professor Charles North to analyze the impact of the credits, and the Ad Hoc Committee on Private School Tuition Tax Credit Review also surveyed STOs related to who received scholarships. Both came to the conclusion that significant portions of the funds went to needy students.

Prof. North evaluated public web sites to ascertain which STOs took financial need into account. He

found that 14 of the largest took financial need into account, 6 saying it was the sole factor, and that they accounted for 18,452 of the 28,321 scholarships awarded during the calendar year 2008. Prof. North arrived at a "conservative" estimate that at least 11,697 students currently in private school would not be there, if not for the scholarships. He then calculated a net savings to the state of \$44.5 million and implied that because his calculations were conservative, the savings could be much higher.

Prof. North doesn't explain in his written work how he arrived at 11,967 students. However, an interview in the *Arizona Republic* revealed a very basic calculation of 50 percent of the scholarships awarded by these 14 largest STOs combined with 25 percent of the remaining

⁴ Hansen, Ronald J., "'Republic' analysis: Tuition tax credits drain state money," *Arizona Republic*, October 14, 2009 p. A1. <http://www.azcentral.com/news/articles/2009/10/14/20091014sto-cost1013.html> (retrieved October 22, 2009).

scholarships awarded yields, 11,693 students (rounding may explain why he had an additional four students). The percentages used by Prof. North appear to be little more than educated guesses, generating a number that looks far more precise than it really is. Prof. North, in fact, characterized it as, “admittedly speculative,” though he thought reasonable. The *Republic's* article further noted that the definition of financial need was not defined and is not likely consistent across STOs.⁵ What we should be looking for is tangible evidence that the makeup of those attending private school has shifted toward lower income families than existed before the credit. Thus far that evidence has not been put forward.

The best evidence to support Prof. North came from a House of Representatives Ad Hoc Committee on Private School Tuition Tax Credit Review survey sent to STO's from the Republican leadership's staff. Nearly every STO responded. That study was presented to the House Committee on November 16, 2009 by Daniel Plumhoff, House Majority Research Staff.⁶ STOs provided answers that seemed to contradict the newspaper research. While 90 percent of the STOs reported considering financial need, need was not defined, and was only one of several factors that STOs indicated they considered. Table 3 in that presentation indicated that STOs had a strong tendency to give to students who would qualify for free or reduced lunch (family income of up to 185 percent of federal poverty guidelines). That table indicated that 28 percent of responding STOs self-report giving 90 percent of scholarships to these students, 36 percent responded awarding scholarships to between 61 and 90 percent of these students, 21 percent to 31 to 60 percent and 6 percent to less than 30 percent of students whose families' incomes were at 185 percent of the federal poverty guideline or less (\$39,200 for a family of four in 2008). These results were by STO, not by total scholarships. At the hearing, Rep. Tom Chabin relayed a letter from an unnamed STO that had identified donor recommendations as a major problem. Likewise, numerous accounts found in newspaper investigations that there was wide-marked practice of donor recommendations for scholarships, yet the STOs in the House survey essentially denied the existence of this practice. Collectively, given the known circumstances at the time of the survey, the completion of the survey was in a political context. As any researcher will tell you, that context is not best practice for receiving fully accurate information.

⁵ North, Charles, “Estimating the Savings to Arizona Taxpayers of the Private School Tuition Tax Credit,” released November 16, 2009 (retrieved January 4, 2010 via link at <http://archive.constantcontact.com/fs035/1011047932616/archive/1102832763902.html>). Hansen, Ronald J. and Pat Kossan (2009), “Professor puts savings for state at up to \$186 million,” *Arizona Republic*, November 17, p. A1, <http://www.azcentral.com/news/articles/2009/11/17/20091117sto-gopmeeting1117.html> (retrieved January 10, 2010).

⁶ Plumhoff, Daniel, testimony to the Ad Hoc Committee on Private School Tuition Tax Credit Review http://azleg.granicus.com/MediaPlayer.php?view_id=13&clip_id=6252 (retrieved January 10, 2010).

The *Tribune's* investigation also found a perplexing lack of change in the portion of Hispanics attending private schools since the inception of the tax credit scholarships. Looking at the 20 private schools which received the most scholarship support, Hispanic students were 15 percent of those enrolled in 1996 and were still at 15 percent in 2007-2008, while in the public schools the Hispanic portion rose from 32 to 42 percent.⁷ Given that Hispanic families are far more likely to qualify for free and reduced lunch than non-Hispanic White families, it's perplexing that if scholarships are being consistently awarded to students at 185 percent or less of the federal poverty line and those families would not otherwise be sending their children to private school, that we haven't seen a significant increase in Hispanic families.

Prof. North's analysis also didn't control for the state's population growth when he noted that after a period of being empirically flat, that private school enrollment had grown in recent years, while the nation was declining. He also overstated the state's saving. As *Tribune* opinion editor Le Templar, a supporter of the credits, noted, Prof. North overstated the state's expense relative to educating students by incorporating all money spent in the state on education.⁸ Had he restricted himself to just general fund then the proper savings would be \$4,623 per student, so 11,697 students yields a net savings of \$54 million very close to the actual cost of the credits of \$51 million for the individual credits. Likewise, his total spending per child figures were too high as he included all capital costs as opposed to operations costs, many of which are quasi-fixed costs that don't vary with the number of enrolled students, especially with the relatively modest change from private school enrollments relative to public school enrollments that he estimated.

Prof. North's numbers would suggest that in the absence of the credit absolute private school enrollment numbers would have decreased, despite the 38 percent increase in the state's school age population. Given that it would be natural for those parents of students attending private school to wish to take advantage of the tax credit (they have nothing to lose, everything to gain), it's important that North's microanalysis match up with the macro-picture of private school enrollment data to ascertain whether or not his estimates, like those of the *Republic*, are reasonable.

⁷ Gabrielson, Ryan and Michelle Reese, Private school tax credits rife with abuse, East Valley Tribune, August 1, 2009 <http://www.eastvalleytribune.com/story/142255> (retrieved January 10, 2009)

⁸ Templar, Le, "Avoiding exaggeration of tuition tax credit benefits," What I know blog, East Valley Tribune, December 14, 2009, <http://whatiknow.freedomblogging.com/2009/12/14/avoiding-exaggeration-of-tuition-tax-credit-benefits/4885/> (retrieved January 10, 2010).

FOUR ESTIMATES FROM A MORE COMPLETE ANALYSIS

The challenge is to ascertain how many students currently in private school would be in public school (including charters) if the tax credit scholarships were not available.

Using data on private school enrollment for the Private School Universe Survey given biannually by the U.S. Department of Education, we're able to obtain state-based private school enrollment data from 1993-1994 through 2007-2008. This data can be combined with public school enrollment data from the Digest of Educational Statistics (cross-checked with Arizona Department of Education figures) and charter school enrollment figures along with calendar year scholarships awarded to create estimates of the impact of the scholarships on private school enrollment, while controlling for the burgeoning charter school enrollment in Arizona.

For comparison purposes two states are selected to assist in considering how Arizona compares. California and Florida have growing charter school enrollments and generally well-regarded. In addition, Florida has a corporate tax credit that finances private scholarships for students who qualify for the federal reduced lunch program, making Florida a very good comparison study, since we know in Florida the scholarships do go to lower income students, though we don't know if they would have attended private school otherwise. Still to the degree Arizona shares Florida's policy, we should see similar patterns in the two states.

California has a rapidly growing charter school systems based on law that the Center for Education Policy, a charter school advocacy group, considers among the best in the nation. It is widely thought that charter schools tend to pull some of their students from private schools, and as such they give us some basis of comparing changes in the portion of students enrolling in private schools when there is and is not a tax credit scholarship.

Table 1 presents the data for Arizona and the United States. In it the year of the inception of the tuition tax scholarships is highlighted as well as the year which shows the lowest ratio of private school enrollment in Arizona compared to the United States, which occurs two years later. Assuming the credit-funded scholarships initially went to existing students originally, I assume that the best starting point for non-regression empirical estimates is to assume that two-year later starting point to assess students moving from public to private schools in Arizona due to the credit. The regression relies on the actual number of scholarships awarded. The scholarship figures are reported on a calendar year basis rather than an academic year basis, so I use the calendar year that correlates with the Fall period of the academic year. So the 2007 scholarships are assigned to the 2007-2008 calendar year. I also assume no private school student receives multiple scholarships. Corporate tuition tax credits were excluded from the

Arizona's Tuition Tax Credit Program's Limited Impact on Private School Enrollment

table, because only in 2007-2008 did they occur, so there's insufficient data to evaluate them separately from the individual income tax credits, which are far more numerous.

To capture tendencies of private school enrollment in the context of broader macro-factors, the analysis relies on Arizona's comparative enrollment rate, which shows out of all students how many are attending private school. This controls for the growing population of the state, enabling better comparisons than the absolute numbers of private school enrollment in the state used by prior studies.

TABLE 1: Arizona and United States Enrollment Data

	Private School Enrollment		AZ charter enrollment	Public & Private Total AZ Students	Portion of Private School Students			Tax Credit Scholarships	Portion Private AZ students with scholarships
	US	AZ			Of all Students AZ	Of all Students US	AZ/US		
1993-1994	4,836,442	41,957	0	751,410	0.0558	0.1001	0.5576	0	0
1995-1996	5,032,200	44,134	6,888	787,700	0.0560	0.1009	0.5553	0	0
1997-1998	5,076,119	44,991	20,804	859,104	0.0524	0.0991	0.5283	0	0
1999-2000	5,162,684	44,060	43,600	896,672	0.0491	0.0992	0.4951	3,365	0.0764
2001-2002	5,341,516	44,360	65,769	966,540	0.0459	0.1008	0.4555	18,049	0.4069
2003-2004	5,122,772	46,366	81,612	1,058,434	0.0438	0.0955	0.4589	20,134	0.4342
2005-2006	5,057,520	50,013	90,490	1,144,467	0.0437	0.0934	0.4681	22,522	0.4503
2007-2008	5,072,451	51,590	99,627	1,200,038	0.0430	0.0927	0.4637	27,153	0.5263

Sources: **Private School enrollment:** U.S. Dept. of Education, "Characteristics of Private Schools in the United States" (from the Private Universe Survey) 1993-1994 through 2007-2008, **Charter School Enrollment:** Arizona Dept. of Education, Oct. 1 figures 1999-2007 <http://www.azed.gov/researchpolicy/AZEnroll/> Earlier figures from ADE 100 day enrollment provided by Arizona State Board for Charter Schools (in 1999-2000 Oct 1 and 100 day for charters nearly the same). **Total Students:** Private Enrollment plus figures from U.S. Dept. of Education, "Digest of Educational Statistics 2008," Table 33 Enrollment in public elementary and secondary schools, by state or jurisdiction: Selected years, fall 1990 through fall 2008, AZ enrollment data for 2007-2008 projected so replaced by Oct. 1 enrollment figures from Arizona Department of Education (which match up well with prior years). **Tax Credit Scholarships:** Arizona Department of Revenue, "Individual Income Tax Credit For Donations To Private School Tuition Organizations: Reporting For 2008, p. 3.

ESTIMATION 1: Arizona Regression

The initial analysis is based on a regression. Regressions analysis helps identify how each variable impacts a dependent variable independently of the other variables.

To adjust for broader economic factors that might be impacting private school enrollment, Arizona's enrollment portion for private school is divided by the portion for the entire United States. So the model evaluates changes in private school enrollment in the state relative to the national average over time.

This estimation model uses regression to determine the impact of the individual private school tax credit scholarships on private school enrollment with the other variable being the portion of students in charter schools. Because the corporate tax credit scholarships are relatively new and have relatively little track record yet, this estimation focuses just on those scholarships funded by the individual tax credit, assuming individual students don't receive individual tax credit scholarship from multiple STO's. Because scholarships are reported on a calendar year, this analysis matches calendar year scholarship grants to the private school enrollment for that Fall, e.g., 2007 calendar year scholarships for the 2007-2008 enrollment figures.

In Table 2 for Arizona we find the growth of charter schools has had a strong statistically significant negative impact on private school enrollment, while the estimated coefficient on the tuition scholarship is not significantly different from zero, suggesting a limited impact of the scholarship program on private school enrollment.⁹

⁹ Some degree of multicollinearity exists in the model, likely due to the limited data points. This does not bias the coefficient estimates but can make the standard error on the estimates larger, diminishing the resulting t-statistic.

TABLE 2: Arizona Private School Enrollment Factors Regression

Dependent Variable: Portion of Students Attending Private School in State Relative to Portion doing so in the entire United States (for 1993-1994 through 2007-2008)				
ARIZONA	COEFFICIENT	Standard error	t-statistic	Statistical significance
(Constant)	.560*	.008	72.983	.000
Portion of students in charter schools	-1.337*	.330	-4.053	.010
Portion of Private School Students with Tax Credit Scholarship	.008	.046	.180	.864
				R-squared=.962 F-Stat=63.036*
* statistically significant result, meaning estimated coefficient at least 95 percent likely to be of the same sign and not equal to zero. For F-Stat relates to complete equation's ability to estimate.				

Despite the weak statistical strength of the estimated coefficient on portion of students receiving scholarship aid, it's still part of the regression estimate. We're just not able to use it with a strong level of confidence due to the standard error being larger than the coefficient. The estimated impact on the dependent variable, Arizona's comparative ratio to the US of private school enrollees is $0.008 \times 0.5263 = 0.0042$ which results in 468 added students due to the scholarships.¹⁰

This model may also be used to predict subsequent private school enrollment figures in the years coming, though as the corporate income tax credits become more widespread, the model should be adjusted to include them. Adding the corporate tax scholarships separately did not improve the estimated coefficients of this model, given they only occurred in the last year of the eight data years used, they were omitted from the model.

From this analysis we do establish a key factor which impacts private school enrollment, charter school growth. In Arizona charter schools pull from private school demand, as noted by the negative coefficient on portion of all students in charter schools.

¹⁰ Since the dependent variables is (AZ Private/AZ All)/(US Private/US All). If you subtract the .0042 from 0.4637 you have the amount without the scholarship for the dependent variable. You then plug in the figures for the knowns and solve for the one unknown, AZ Private and you obtain 51,122. The difference between the actual, 51,590 and that amount or 468 is the number of students from the regression equation who are in private school due to the tax credit funded scholarships.

ESTIMATION 2: Arizona based on low point in Private School Enrollment

Although the Tax Credit Scholarship program began in 1999-2000, Arizona's share of private school enrollment continued to fall until reaching a nadir in 2001-2002. This may relate to a lag in the awareness of the private school scholarships, the likelihood that initially the scholarships went exclusively to existing students, the fast growth of charters, and the economic recession. We use this as our point of comparison in building an estimation that the growth in Arizona relative to the United States as a whole since 2001-2002 is due to the scholarship credit program. Then the growth from 0.4555 in 2001-2002 to 0.4637 in 2007-2008 would be the number of students who would otherwise be in public schools. $0.4555/0.4637$ times enrollment yields an enrollment estimate of without the scholarships of 50,674 or a loss of 916 students from private schools if no credit existed.¹¹

ESTIMATION 3: Using Florida as a basis of estimation

It's instructive to consider the state of Florida, which has both a tuition scholarship program and a robust charter school initiative. The Center for Education Policy, charter school advocates, considers Florida's law not as good as Arizona's, but still one of the best in the country.¹² Unlike Arizona's tuition scholarships, Florida's program is based on corporate tax credits and it requires that scholarship recipients have a family income no higher than 185 percent of the federal poverty line (\$39,200 for a family of four in 2008) which is the threshold for the federal free and reduced lunch program. Table 3 compares Arizona to Florida. The years in which the corporate tuition tax program has been in existence are highlighted.

¹¹ Note the printed figures are rounded, so if doing it by hand you'll get slightly different numbers. For instance, In this case, $0.4555/0.4637 \times 51,590 = 50,678$ instead of 50,674.

¹² See Center for Education Policy ratings <http://www.charterschoolresearch.com/> (retrieved January 10, 2010).

TABLE 3: Arizona v. Florida Enrollment Data

	Private School Enrollment			Public & Private Total FL Students	Portion of Private School Students			FL Tax Credit Scholarships	Portion Private FL students with scholarships
	AZ	FL	FL charter enrollment		Of all Students AZ	Of all Students FL	AZ/FL		
1993-1994	41,957	233,743	0	2,274,506	0.0558	0.1028	0.5433	0	0
1995-1996	44,134	253,531	0	2,429,753	0.0560	0.1043	0.5370	0	0
1997-1998	44,991	273,628	0	2,567,705	0.0524	0.1066	0.4914	0	0
1999-2000	44,060	290,872	16,120	2,672,268	0.0491	0.1088	0.4514	0	0
2001-2002	44,360	303,093	40,465	2,803,571	0.0459	0.1081	0.4245	0	0
2003-2004	46,366	323,766	67,512	2,911,394	0.0438	0.1112	0.3939	11,550	0.0357
2005-2006	50,013	323,302	92,214	2,998,326	0.0437	0.1078	0.4053	15,123	0.0468
2007-2008	51,590	329,646	105,239	3,100,646	0.0430	0.1063	0.4044	21,493	0.0652

Sources: **Private School enrollment:** U.S. Dept. of Education, “Characteristics of Private Schools in the United States” (from the Private Universe Survey) 1993-1994 through 2007-2008, **Charter School Enrollment:** Florida Department of Education, School Choice newsletter “Charter School Programs,” Oct. 2009, http://www.floridaschoolchoice.org/information/charter_schools/files/fast_facts_charter_schools.pdf. **Total Students:** Private Enrollment plus figures from U.S. Dept. of Education, “Digest of Educational Statistics 2008,” Table 33 Enrollment in public elementary and secondary schools, by state or jurisdiction: Selected years, fall 1990 through fall 2008, FL enrollment data for 2007-2008 projected **Tax Credit Scholarships:** Florida Office of Program Policy Analysis and Government Accountability, “The Corporate Income Tax Program Saves State Dollars,” Dec. 2008, Report 08-68, <http://www.oppaga.state.fl.us/reports/pdf/0868rpt.pdf>, Exhibit 2 p. 3.

When we compare Florida to Arizona, we notice a consistent pattern where Arizona’s private school portion declined until 2003-2004 after which it stabilized. Subsequently, Arizona has had an equivalent growth in private school enrollment as Florida. Florida’s growth is actually not particularly strong, but in the three years highlighted in Table 3 jumps from being 1.07 of the national average in 2001-2002 to 1.165, 1.155 and 1.148 of the nation average, respectively, suggesting a positive impact from the credits (not in the table). Florida’s Office of Public Program Analysis and Government Accountability noted that “the typical student comes from a household with an annual income of \$24,543 and four persons. In 2007-08, most (61%) students received the maximum scholarship amount of \$3,750. The average scholarship

amount was \$3,412.”¹³ The income is lower than recipients in Arizona by what STO's self-report and the scholarship amounts are approximately 50 percent higher. The program also requires that recipients either be entering school, already be a scholarship recipient or be switching from private school. As a consequence, they estimate 90 percent of recipients would otherwise be in public school.

Arizona's private school enrollment rate has remained at 40 percent of Florida, which means controlling for population, when 10 students enroll in private school in Florida, 4 students do so in Arizona. So we can presume Arizona's growth in private school enrollment has been 40 percent that of Florida adjusted for population. Hence, Arizona's share would be 90 percent times Florida's share of private school students on scholarship (0.0652) times Arizona private enrollment yielding 3,027 students attending private school in Arizona that would otherwise be in public schools.¹⁴

ESTIMATION 4: Using California as a basis of estimation

California like Arizona has also been denoted by the Center for Educational Progress as having an outstanding charter school law and has seen rapid growth in charter school enrollment combined with declines in private school enrollment. Unlike Arizona and Florida, California does not have a tax credit private scholarship law. During our focus period of 2001-2002 to 2007-2008, California charter school enrolment grew by 89 percent well above the 51 percent growth Arizona experienced. In Arizona, had all the growth in private schools using absolute numbers gone to charters, then charters would have grown 62 percent instead of 51 percent.

Since the private school credit program may have restrained charter school growth somewhat in Arizona, using California's experience with charters but without the scholarships provides an additional estimate of the number of private school students who without the scholarships would otherwise be in public schools (including charters).

In Table 4, Arizona's low point is highlighted and the full comparison to California illustrated. We notice a flipping point in 2001-2002, where Arizona's portion of private school students compared to California declined, and then rises after 2001-2002.

¹³ Office of Public Program Analysis and Government Accountability, office of Florida Legislature, "The Corporate Income Tax Credit Scholarship Program Saves State Dollars, December 2008, <http://www.oppaga.state.fl.us/reports/pdf/0868rpt.pdf> (retrieved January 11, 2010). See p. 3.

¹⁴ Arizona's enrollment rate is 40 percent of Florida's so using the straight Arizona private school enrollment figure accomplishes the adjustment needed.

TABLE 4: Arizona v. California Enrollment Data

	Private School Enrollment		CA charter enrollment	Public & Private Total CA Students	Portion of Private School Students		
	AZ	CA			Of all Students AZ	Of all Students CA	AZ/CA
1993-1994	41,957	569,062	12,028	5,896,293	0.0558	0.0965	0.5786
1995-1996	44,134	629,346	37,176	6,165,752	0.0560	0.1021	0.5489
1997-1998	44,991	609,506	55,764	6,413,393	0.0524	0.0950	0.5510
1999-2000	44,060	619,067	104,631	6,657,657	0.0491	0.0930	0.5284
2001-2002	44,360	655,502	132,907	6,903,228	0.0459	0.0950	0.4833
2003-2004	46,366	623,105	164,808	7,036,972	0.0438	0.0885	0.4947
2005-2006	50,013	614,861	199,906	7,052,063	0.0437	0.0872	0.5012
2007-2008	51,590	607,141	251,722	7,078,141	0.0430	0.0858	0.5012

Sources: **Private School enrollment:** U.S. Dept. of Education, “Characteristics of Private Schools in the United States” (from the Private Universe Survey) 1993-1994 through 2007-2008, **Charter School Enrollment:** 1999-2008: Ed-Data web site for State of California, <http://www.ed-data.k12.ca.us/Navigation/fsTwoPanel.asp?bottom=%2Fprofile.asp%3Flevel%3D06%26reportNumber%3D16>. 1997-1998: State of Charter Schools Archived Report-May 1999 <http://www.ed.gov/pubs/charter3rdyear/B.html>, 1993, 1995 straight line interpolation based on growth in total charter schools in California <http://www.docstoc.com/docs/21153861/Explosive-Growth-in-Charter-Schools> (retrieved January 10, 2010-document no longer available). **Total Students:** Private Enrollment plus figures from U.S. Dept. of Education, “Digest of Educational Statistics 2008,” Table 33 Enrollment in public elementary and secondary schools, by state or jurisdiction: Selected years, fall 1990 through fall 2008, CA enrollment data for 2007-2008 projected.

In California, we can see that especially since 2001-2002 that private school enrollment trends have nosedived falling from 9.5 percent of all students to 8.6 percent of all students. Assuming a similar decline for Arizona is the basis of this estimation. In 2001-2002, Arizona had a private school enrollment rate that was 48.3 percent of California’s. By 2007-2008 it had increases to 50.1 percent. For this estimation we presume that in the absence of the tuition tax credit scholarships, Arizona’s private school enrollment would be 48.3 percent of California instead of 50.1 percent.¹⁵ If that were the case, private school enrollment in Arizona would be 1,891 students less than it is today.

¹⁵ Figures are rounded in table so results differ modestly from my non-rounded calculations, but you can take the ratio of .4833/.5012 times Arizona’s private school enrollment to get the estimated enrollment without the credits.

CONCLUSION

TABLE 5: Estimated Funding Impacts of Tax Credits

Estimation	Students in Private School due to Scholarships	Savings to the General Fund	Cost to the General Fund of the tax credits	Net Cost to the General Fund	Net Cost to Taxpayers with local district savings
Arizona Regression	468	\$2,163,564	\$55,982,081	\$53,818,517	\$52,314,833
Arizona Nadir Baseline	916	\$4,234,668	\$55,982,081	\$51,747,413	\$48,804,305
Florida Comparison	3,027	\$13,993,821	\$55,982,081	\$41,988,260	\$32,262,509
California Scenario	1,891	\$8,742,093	\$55,982,081	\$47,239,988	\$41,164,205
AVERAGE	1,576	\$7,283,537	\$55,982,081	\$48,698,545	\$43,636,463

Collectively, I used four different means of estimating how many students would otherwise enroll in public school if not for tuition tax credit scholarships. The four estimates each use reasonable assumptions with different comparisons. The Arizona regression aims to isolate the impact of the tax credits on private school enrollment rates, controlling for broader United States private school enrollment trends and charter school growth. In this case we find close to 500 students moving to private schools due to the scholarships.

The other three estimates presume that although the tax credit scholarships began in 1999-2000 that we should look at private school enrollment growth since 2001-2002, since that's actually the low point in private school enrollment rates for Arizona. Most likely this is because initially the program only served students already enrolled in private schools. From this starting point, we can compare Arizona's growth since that time, and find an estimate of just less than 1,000 new students due to the tax credit scholarships. Using Florida's estimated portion of students switching to private schools due to their tax credit scholarships as a starting point yields just over 3,000 students having moved to private schools as result of the scholarships. Finally, taking California as a point of comparison, and presuming that Arizona's private school enrollment decline would have mirrored theirs, we find that nearly 2,000 students have moved into private schools due to the scholarship program.

While we can't say which estimate is necessarily most accurate, the range represented does show that only a fraction of the absolute private school enrollment growth that has occurred since the inception of the credits has occurred due to the credits. This has a great deal of face validity, as in Arizona total school enrollment increases by nearly 40 percent, and private school enrollment grows by less than 20 percent, making it questionable to suggest that all of the absolute gain in private school enrollment is due to tuition tax credits as the *Arizona Republic* study conservatively assumed, and extremely unlikely that Arizona private school enrollment would have decline absolutely as Prof. North suggests. Using the California private school enrollment rate instead (which has dropped a nearly 1 percent in the focused years) seems to be a far more prudent comparison.

The saving per student to the General Fund is \$4,623 based on data from the Joint Legislative Budget Committee, while the tuition tax credits in 2007-2008 cost \$56 million. This cost includes both the individual tax credits (\$51 million) and the corporate tax credits (\$5 million). Both programs contribute to the students switching to private school. While the regression used in estimation one only used data from the individual tax credits that was more for statistical clarity given limited data points. Both programs contribute to the savings and the cost and need to be included. The other estimation methods compared private school enrollment rates in Arizona to other states, so encompassed both programs.

From the estimates, the net cost to the General Fund ranges from \$42 million to \$54 million, with the average net cost to the General Fund being \$49 million, showing unequivocally that regardless of whatever educational merit the program has, the tax credits do not pay for themselves, and contribute to the shortfall in the General Fund.

If we look more broadly at total cost and include the \$3,213 per student savings to local school districts from the *Arizona Republic* study which came from Department of Education weighted averages across districts, then the total net cost taxpayers ranges from \$32 million to \$52 million annually, with an average of \$44 million.

As policymakers evaluate or seek to reform the tax credits in the context of a tight budget, they should do so noting that the program is not a source of savings, but presently a net drain on the General Fund compared to a case where the credits did not exist.