

Basis for Fiscal Impact Estimates for Private School Choice Legislation

John Merrifield and Michael Ford
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I. Inputs

The fiscal notes calculator asks for the following user supplied state data:

- 1.) Total private school enrollment
- 2.) Total public school enrollment (traditional + charter)
- 3.) Chartered public school enrollment
- 4.) Total Private School enrollment – replaced in ‘Streamlined’ with NCES data
- 5.) Avg Private School annual tuition rate for your state - replaced in ‘Streamlined’ with NCES data
- 6.) Average District-level *Total (State and Local) Per Pupil Public Funding*
- 7.) Average District-level *State Per Pupil Public Funding*
- 8.) Average avoided state government spending per student transfer from public to private (the public spending that would have occurred if a student was otherwise in public schools).
- 9.) The proposed statewide average private school user subsidy per subsidy-eligible student
- 10.) Are private schools eligible for government funds only if they accept them as full payment?
- 11.) If co-payment is allowed, is there a co-payment limit?
- 12.) If co-payment is allowed, is private co-payment taxed?
- 13.) What percentage of students, if any, enrolled in private schools before passage of the proposed school choice legislation are eligible for the private school subsidy?
- 14.) Cap on use (# of students) of the private school subsidy
- 15.) Eligibility limit (poverty, certain districts, failed schools, etc.) for the private school subsidy.
- 16.) For tax credit-scholarship programs, the dollar limit on the donation credit. The cap on the share of the taxpayer’s tax liability that can be claimed as a credit is ____ (0 for no cap).

To also include graduation rate effect-driven fiscal impacts, users must supply:

- 17.) ‘Completion I’ graduation rates
- 18.) Freshman ‘Cohort’ for the Graduating class of the first fiscal year (N) the proposed legislation would be in effect.

II. Outputs

The calculator uses those user supplied data to estimate, for a proposed education savings account, tuition voucher, tuition tax credit, or tax credit – scholarship program, the following critical elements of fiscal impact assessment: a.) net private school enrollment change; b.) state fiscal impact; c.) average change in public school district revenue per student; d.) graduation rate effects; e.) state fiscal impacts adjusted for graduation rate effects; and f.) change in public school district revenue per student adjusted for graduation rate effects.

III. The Process: Equations, Parameters, and Assumptions

The calculator requests two values of each important number to facilitate a START year (first year the proposed program would be in effect) projection of each input. So, for example, if total public school enrollment is 5,000,000 in FY 2013 (2012-13 school year), and 4,900,000 in FY 2011 (2010-11 school year), the calculator will find the annual growth rate $(1.0153\%/yr. = ((5000000/4900000)^{(1/2)} - 1)) \times 100$. If the START year is FY 2015, the 2015 projected value of total public school enrollment as the starting point for impact estimates is: $5,000,000 \times 1.01053 \times 1.01053 = 5,105,854$.

The key basis for estimating the proposed legislation's impact on private school enrollment is the Chiswick and Koutramanes (1996) estimate of the rate at which the probability of attending a private school varies with the average private school tuition level. Since the 0.00021 Chiswick and Koutramanes rate was derived from 1990 data, the calculator adjusts it for inflation to create a START year rate. The Chiswick and Koutramanes rate is the most conservative and most plausible of the available choices, almost all of which are even older than the Chiswick and Koutramanes rate. Because of its age, it should eventually be replaced with a modern, re-estimate of how the probability of attending a private school varies with the average private school tuition level;

preferably a separate rate for student sub-populations like ‘low-income’ and ‘special needs’. That modern re-estimate is on the agenda for 2015.

Chiswick and Koutramanes is the ‘most plausible’ because it virtually reproduces the increase in private school during the first three years of the Edgewood (1999-2001) voucher and expanded Milwaukee (1999-2001) voucher programs (Kava, 2013). Therefore, we believe that the Chiswick and Koutramanes rate is an under-estimate of the private school enrollment effect for a tuition change that applies to everyone, permanently, not just low and middle income families (Milwaukee), and not just temporarily (Edgewood). We believe that the private school enrollment increase will be at least as large as predicted by the ‘calculator’, probably slightly higher. That means that for typical school choice programs where the subsidy for private school use is less than the state’s per pupil allotment for public school users, the calculator will slightly under-estimate fiscal savings or over-estimate fiscal cost.

The average of the very similar Milwaukee and Edgewood experiences determined that the year 1 take-up rate’s share of the year 2 take-up rate is ~80%; that is, only 80% of the second year of the proposed legislation’s private school enrollment increase occurs in the first (START) year. The calculator provides a sensitivity analysis opportunity to replace that ~80% value with a user-chosen value, and see how it impacts the impact estimates computed by the calculator.

Based on a very skimpy literature, we estimated that the increased demand for private schooling that results from tuition vouchers, tuition tax credits, and education savings accounts would yield an average increase in private school tuition of no more than ten percent, perhaps less. The calculator provides for an easy sensitivity analysis test of the importance of the ten percent tuition price increase ceiling to each fiscal note. Naturally, if (a la Milwaukee) the proposed legislation does not allow co-payment (topping off the voucher = shared financing), there is no tuition price increase to cut into the value of the subsidy. If the proposed legislation allows shared

financing of tuition, then the tuition price increase's share of the price increase ceiling depends on [cheap] parochial enrollment's share of total private enrollment (in the calculator based on national data), the size of the proposed subsidy in relation to average private school tuition, and whether the co-payment is capped (a la the Cleveland voucher program).

To estimate the average shared financing co-payment, the calculator also takes into account possible co-payment 'taxation' (a la Chile's policy), which means whether the co-payment must be larger than the difference between the proposed average per pupil subsidy and the average private school tuition level. With a twenty percent tax on co-payment, it will take a \$1000 co-payment to make up the \$800 difference between a \$4000 per pupil subsidy and a \$4800 tuition price.

The calculator then estimates the increased demand for private school enrollment in two stages. The first estimate does not take account of the tuition price change impact on self-pay private school users, switching from private to public to become eligible for a private school use subsidy, or for expenditure of co-payment 'taxation' that finances low income family co-payments. That first estimate takes account of the net size of the per-pupil subsidy (after tuition increase, if any), experience with price controlled (no shared financing allowed) transfer to private schools, shared financing cost, caps on eligibility for the subsidy, the year one take-up rate discussed above, and caps on use of the subsidy. For example, there could be a, say, 20,000 student cap on voucher availability, and a 100,000 cap on eligibility, based on a low income, or failed school, eligibility criterion. It also takes account of subsidy eligibility of pre-Year 1, self-pay private school users.

The second stage of the estimated increased demand for private school enrollment takes account of the tuition price change impact on self-pay private school users (based on the Chiswick and Koutramanes rate), switching from private to public to become eligible for a private school use subsidy, or for expenditure of co-payment 'taxation' revenue that finances low income family co-payments. Some past efforts to enact private school choice legislation limited eligibility to public

school users. Merrifield and Bast (2011) estimated the rate at which self-pay private school users would switch from private to public to become eligible for the private school use subsidy. When there is a co-payment tax, the calculator determines the sum that will accrue from the tax, and divides that amount by the estimated average shared financing co-payment to estimate the private school enrollment effect of the expenditure of that ‘tax’ revenue.

If the proposed legislation would create a tax credit scholarship program – individuals and/or businesses get a tax credit for donating money to organizations that grant tuition vouchers (typically, means tested) – the calculator assumes that the average voucher is \$2000. That’s based on conversations with experts on voucher dispensation by organizations that receive the donations, and estimated per-pupil expenditures in the Arizona, Indiana, Iowa, and Pennsylvania tax credit programs obtained from the Alliance for School Choice 2012-2013 yearbook. The calculator provides a sensitivity analysis opportunity to replace that \$2000 average voucher value with a user-chosen value, and see how it impacts the impact estimates computed by the calculator. An ongoing research project will improve the basis for estimating the donation level. For now, data on propensity to donate were used to convert the proposed program specifications into revenue available for granting tuition vouchers (the ‘scholarships’).

The change in private school enrollment is the lesser of the additional demand and a cap on subsidy availability; for example, a possible limit on the number of vouchers granted. The per pupil state fiscal savings is the difference between the average per pupil state spending on students that enroll in public schools and the average per pupil subsidy provided for by the proposed legislation. The fiscal impact on the state is that per pupil savings (or cost) times the number that opt out of public schools, minus the fiscal cost of extending the subsidy to [all, some, or no] students enrolled in private schools before the enactment of the proposed legislation. Graduation rate effects are

taken into account if the calculator user views the skimpy research on such effects as credible, or at least worthy of exploration.

Private school choice legislation reduces state funding for school districts. The estimated impact on average school district per pupil funding results from comparing districts' revenue per pupil before and after subtracting the per pupil state funding times the net change in school districts' enrollment and dividing by the smaller number of students in district schools. That yields an estimated average change in per pupil revenue at the district level.

To explore the fiscal impact of graduation rate effects – derived from the Edgewood voucher study – the calculator compares the grade 10-12 enrollment level with the estimated higher 'Completion I' public school graduation rate and the present 'Completion I' graduation rate. The estimated maximum change in the 'Completion I' public school graduation rate is 17 percentage points (Edgewood experience), or halfway to 100%, whichever is less. The resulting reduced attrition rate from each high school grade to the next yields increased enrollment for each of those years. Those projected increased enrollment levels minus the projected enrollment levels, by grade, with the present graduation rate increases public school enrollment with a fiscal impact on the state and school districts. The calculator provides those adjusted fiscal impact estimates. Note that the calculator does not take into account that some of the new private school users would have dropped out but for the opportunity to move to a private school. The graduation rate effect estimates are just for the effect of increased graduation rates in traditional public schools.

In addition, a simplified, streamlined calculator is being developed. It will only require entry of readily available, state government-maintained data. In the streamlined version, graduation rate effects are omitted and national averages substitute for the other items requested by the full calculator. A sensitivity analysis screen allows quick/easy exploration of the effect of individual simplifications.

Finally, the fiscal notes calculator provides for instant sensitivity analysis of key parameters and assumptions. At present, as noted above, instant sensitivity analysis is only available for the private school tuition increase ceiling, the year 1 take-up rate, and the average annual ‘scholarship’ amount for tax credit scholarship programs. The default value of the maximum tuition increase parameter, as noted above, is an average tuition increase of ten percent. Later editions of the fiscal notes calculator will provide for several additional instant sensitivity analyses. Suggestions welcomed. Likewise, a key objective of this first edition of the technical paper is to solicit feedback on estimation strategies, and feedback on this technical paper. For example, would you like more (fewer) technical details. Which ones? Can you think of ways to create simpler, faster versions of this online calculator; ways that expect less from users without sacrificing too much accuracy?

References

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