

529 College Savings Plans

An Investment Analysis

By Brian E. Foont, JD, LL.M.

A college education is properly regarded as one of the most important stepping stones to economic prosperity. Paying for it as the costs have risen far faster than incomes, however, has become one of the most significant burdens a family faces. Many families, therefore, rightly seek out the best methods of saving for college. Among the options, 529 plans have grown in popularity since being introduced in 1996. They may not, however, be the best or even a good choice.

A quick Internet search on “529 plan” yields millions of results. Some entries are quite good, others are not, and there is—as might be expected—tremendous repetition. Most entries explain the basics: A 529 plan is a creation of federal law under which a state (or agency or instrumentality thereof) may establish a qualified tuition program under which participants may either save for higher education (investment plans) or purchase tuition credits (prepaid plans). Not every state offers both. The key benefit is that, if the funds from such a plan are used for higher education, the income on the contributed funds is not taxable. Few sources (on the Internet or otherwise), however, analyze whether participating in such a program is worthwhile. Most are either neutral or presume that the conclusion is “yes”—but the answer may be “no.” In this article we consider both the investment and the prepaid types of 529 plans from an investment perspective. Note that in all cases contributions count toward the limit on tax-free gifts to children.

Tax Deductibility of Contributions

Many states allow their own taxpayers to deduct contributions to their own state’s 529 plans. The same does not apply if the investor participates in a plan in another state. No deductions are available on a federal tax return. Thus, the value of the deduction is quite limited. For example, the value of the maximum \$2,500 state tax deduction in Maryland is less than \$150. While rationally an individual should prefer to have \$150 than not, such limited value is an unlikely decision driver, particularly given that some plans consume that benefit with fees.

options are generally in mutual funds that have widely varying fees.

Finding the real value of participation would require an analysis of each state’s program. We will, therefore, use Maryland’s 529 investment plan as an example. To start, we presume that the 15 choices available under Maryland’s 529 investment plan also are available outside the plan in a regular investment account. This is a reasonable presumption because the program manager, T. Rowe Price, offers such products.

Let us presume a deposit of \$10,000 each year for 12 years, and that parents and child are respectively in

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Investment Plan

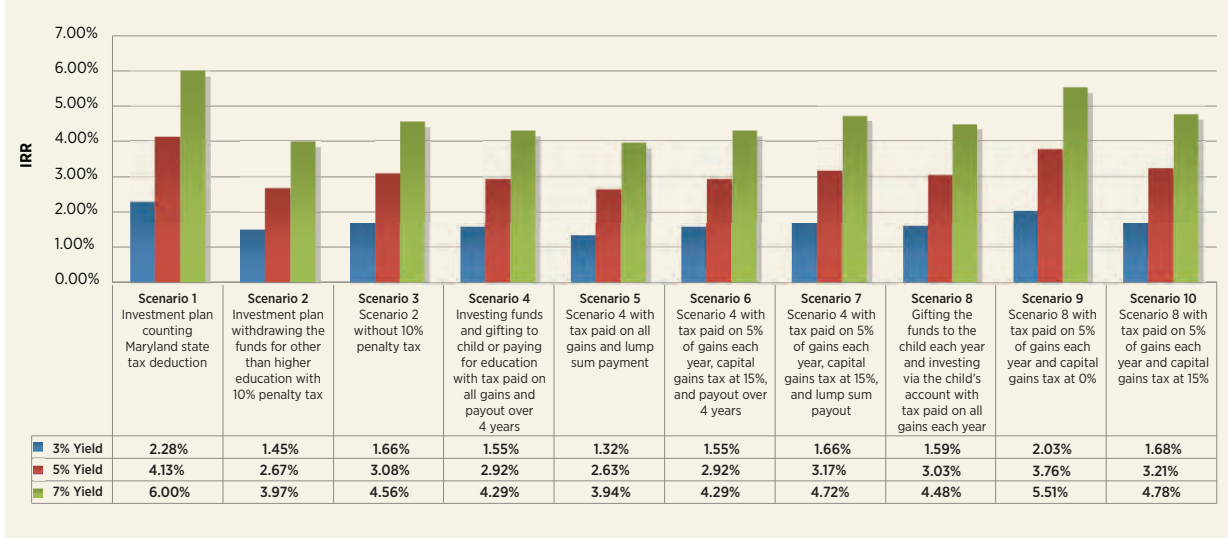
The 529 investment plans are relatively simple: Contributions and investment choices are made, and the funds grow (or shrink) tax-free as long as withdrawals are made exclusively for higher education.

Fees for 529 investment plans are significant and generally occur in three categories: 1) an annual fixed fee, e.g., \$25; 2) an annual fee, e.g., 0.20 percent of the account; and 3) fees associated with the selected investments. The investment

the 28-percent and 10-percent federal tax brackets and the 4.75-percent and 2-percent Maryland state tax brackets, and that both pay a 2.83-percent county income tax (the average rate, which is not graduated). We also presume a fee on the selected investments of 0.91 percent (the average) as well as the plan’s annualized program fee of 0.20 percent.

In comparing alternatives, consideration also must be given to when gains in the taxable accounts are taxed. If funds are invested in a stock purchased upon

FIGURE 1: RETURN UNDER INVESTMENT PLAN SCENARIOS (\$10,000 CONTRIBUTION FOR 12 YEARS)



each deposit and not sold until funds are withdrawn, the only tax (if any) due during the holding period would be on dividends, and the tax on gains would be at the lower rate applicable to capital gains (or, perhaps, the value of the deduction if there were a loss). That rate is 0 percent for taxpayers in the 10-percent and 15-percent federal tax brackets and 15 percent for all others (but the rate will, unless the law is changed, increase in 2013). Tax-free investments are also possible, e.g., U.S. Treasury Bills. We will, therefore, presume that 5 percent of gains come in the form of income, i.e., dividends and interest, and the remainder comes as capital gains at the long-term rate. We will presume this puts parents at the 15-percent capital gains rate and the child at 0 percent.

The results under various scenarios are shown in figure 1 and comparing the results would seem to suggest that the 529 investment plan is the most favorable option. The margin, however, between Scenario 1 and Scenario 9 when there is 5-percent investment yield is only 0.37 percent. That is, if investment options comparable to those under the 529 investment plan could be obtained with smaller fees, the same performance might be obtained.

Is our predicted after-tax rate of return beatable in a low-risk fashion? Note that Maryland's 529 investment plan assumes a 5-percent return.¹ Among the 12 investment options for which that plan provides historical returns,² none achieved that rate of return in the past one, three, or five years and only one option exceeded that level since its inception in November 2001. Most have lost money, as might be expected given recent market conditions. The mean annualized return among the 12 options since their respective inception dates is 0.42 percent, with a high of 5.38 percent and a low of negative 8.54 percent. Thus, it is reasonable to ask whether parents can beat a 0.42-percent return on an after-tax basis in a low-risk investment. The answer is clearly yes, because the yield on 10-year U.S. Treasury Bonds is presently around 2.24 percent and the rate on the 20-year is around 3.24³ and there are no state or local taxes on income from those investments.

Consider, of course, that recent returns on many investments have suffered in the global recession. This may show up the most disadvantageous element of 529 investment plans: Once

investment selections are made, the opportunity to switch is very limited. Before 2009 the regulations permitted one change per year. A special IRS rule in 2009 permitted two changes. No such exception was made subsequently and none appear to be planned.

The 529 investment plans present an attractive idea, one with essentially the advantages of a Roth individual retirement account when distributions are used for education. But 529 investment plans have unfavorable features, and the most significant are the fees. Fees consume a substantial portion of any potential benefit. Lack of flexibility in making and changing investment choices is also a drawback.

Prepaid Plans

Under 529 prepaid plans, parents and others may purchase all or portions of a college education within the applicable state's college/university system for future use. Thus 529 prepaid plans are a hedge against tuition increases. It also must be noted that most states' 529 prepaid plans are open only to residents.

An analysis for 529 prepaid plans is more complicated than for 529 investment plans in part because the amounts charged vary materially



among the states' programs. In general, however, prepaid programs provide for tuition at a fixed price, a cash benefit if the child goes to a school not covered by the program, and some harsh penalties if funds are withdrawn for reasons other than education that include the regular federal tax on gains, as well as an additional 10 percent federal tax on those gains.

Note that 529 prepaid plans are not all guaranteed. For example, in the event of a shortfall in funding in Maryland, the governor must include an amount in the following year's state budget to fully pay benefits. One might prefer not to consider this possibility, but this is precisely what is happening in Alabama.⁴

The value of a 529 prepaid plan essentially is determined by whether tuition (and whatever else is covered, e.g., mandatory fees) will increase at a rate greater than the return otherwise obtainable. Complexity is introduced by the number of different possible outcomes, as shown in the following analysis using Maryland's prepaid program (MPP):⁵

Scenario A: Child goes to a University of Maryland school. MPP sells education in units without differentiation among the schools in the University of Maryland system, except that two- and four-year institutions are treated separately. Because the otherwise applicable prices vary substantially, the return on investment likewise can be substantial. MPP funds also can be used to pay for generally more-expensive graduate school or, for a fee, transferred to another beneficiary. For graduate schools, the program pays the least among 1) the actual benefit remaining in the account, 2) the actual tuition charged by the graduate school, or 3) the weighted average tuition.⁶ Presuming that the tuition is used, the return on the investment also will vary based on the school attended but will remain (with one exception) below 3 percent if tuition increases at up to 5 percent

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annually. With tuition increasing at 7 percent annually the return varies between 1.86 percent and 5.76 percent, while at a 9-percent annual increase, the return is between 4.98 percent and 8.78 percent.

Scenario B: Child goes to a school outside of the University of Maryland system. The trademarked catchphrase of the Maryland 529 Plan is “Save here. Go anywhere®.” The amount MPP pays when the student goes to college out-of-state is comparable to that under Scenario D, except that the money is paid over four years. The return will depend on the rate at which the weighted average tuition increases. At a 3-percent annual rate of increase in weighted average tuition, the return is 0.09, at a 5-percent annual rate of increase it is 2.60 percent, at a 7-percent annual rate of increase it is 5.76 percent, and at a 9-percent annual rate of increase it is 8.78 percent.

Scenario C: Child dies or becomes disabled while enrolled in a University of Maryland school. In this unfortunate scenario MPP refunds the cost of the remainder of the education but income tax is due on the gains. Because of the tax, the resulting return is lower than under Scenario A. When tuition increases annually at 3 percent, the result is quite poor, exceeding only a specified minimum benefit if the child has enrolled at the most expensive of the University of Maryland schools. When tuition increases at 5 percent annually, the return tops out at 3.30 percent. At an annual increase of 7 percent or more, the return would be in positive territory for all schools.

Scenario D: Child dies or is disabled before enrolling but after high school. In this equally unfortunate situation, MPP refunds the weighted average tuition. For the 2010–2011 school year, the amount was \$8,113 for four-year institutions. If the rate of tuition increase is 3 percent, the payout, presuming death or disability immediately after the expected date of graduation from high school, would be \$61,511 for a return of 0.16 percent; if the rate of increase were 5 percent, the return would be 1.93 percent; at a 7-percent rate of increase of, the return rises to 4.84 percent; and at a 9-percent rate of increase, the return would be 7.71 percent.

Scenario E: Child dies or is disabled before finishing high school. In this unfortunate case MPP refunds the payments made to date plus or minus the investment return. MPP's investment return has been weak, especially considering the hefty fees that are otherwise not a factor except here and under Scenario F. Any income is taxable at the rate applicable to the distributee (presumed to be the child or his/her estate). Using the actual yield since inception of 3.2 percent, the return peaks at 3.26 percent but can be as low as 0.76 percent. If that yield were 5 percent, the return would be as high as 5.03 percent and as low as 2.48 percent; at a yield of 7 percent, the high is 7.00 percent and low is 4.40 percent.


Scenario F: Withdrawal from the program. Participants may withdraw from the program at any time. If the withdrawal occurs within three years of enrollment, the refund will

be the amount contributed less any administrative fees, plus or minus 50 percent of the gains or losses on payments and 90 percent thereafter.⁷ As with Maryland's 529 investment plan, an extra federal tax of 10 percent on gains, in addition to the regular tax on gains, discourages withdrawals for purposes other than higher education. As with Scenario E, fees also take a toll in this scenario, making early withdrawal clearly disadvantageous.

A comparison of the returns under the various scenarios can be misleading. To start, Scenarios C, D, and E cannot be selected and represent the outcome of undesirable events. In a similar vein, Scenario F represents a result that is unplanned but might be used if, for example, the child obtained a full scholarship and had no educational use for the funds. We are, therefore, left with Scenarios A and B. Under Scenario A, the school that the child attends is a substantial determinant of the return on investment. Presuming, however, an annual rate of increase in tuition and mandatory fees of 5 percent uniformly across of the University of Maryland schools (noting that the increases have not been uniform), the greatest return is obtained by attending University of Maryland, Baltimore County (the University of Maryland school with the highest tuition) at 3.42 percent. Under Scenario B with the same presumption, the return is 2.60 percent. The numbers, however, begin to look more attractive if we presume that tuition will increase at more than 5 percent per year. Those figures increase, respectively, to 6.56 percent and 5.76 percent when tuition and fees increase at 7 percent per year and further to 9.56 percent and 8.78 percent, respectively, when tuition and fees increase at 9 percent. The difficulty, of course, is guessing where tuition is going over the coming years.⁸

Conclusion

Both 529 investment and prepaid plans present seemingly comfort-

ing opportunities: Save securely and tax-free for a child's college education. Nevertheless, the strengths and, more importantly, the weaknesses of these plans must be considered. For both, contributions to the programs count toward the limit on gifts that may be made to children without triggering the federal gift tax. Thus, if the objective is to maximize what may be given to a child without tax, for those families capable of paying for college directly and making a gift, giving the maximum gift alone is likely favorable. For families that must choose between paying for college and giving gifts, 529 plans present viable options. The prepaid plan is clearly more attractive because it hedges against rising tuition; the investment plan offers a meager investment vehicle that can be easily bested by other investments. 

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Disclaimer: This article is not and is not intended as legal nor financial planning advice. Readers are encouraged to consult with their tax and financial advisors with regard to their decision to use or not use a 529 plan.

Endnotes

- 1 Maryland College Investment Plan Disclosure Statement and Enrollment Form 2009–2010, 4.
- 2 Ibid., 10.
- 3 Daily Treasury Yield Curve Rates, <http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/yield.shtml> (data as of August 12, 2011).

- 4 See Jane J. Kim, "Weekend Investor—The False Security of Prepaying Tuition: Participants in Early Payment Plans Learn College Bills Aren't Always Covered; States Scramble to Shore Up Funds," *Wall Street Journal* (E. ed.), February 20, 2010, B.10. See also Alabama Prepaid Affordable College Tuition Program Presentation of September 30, 2008, <http://www.treasury.alabama.gov/pact/Documents/PACT%20Board%20Meeting%20Presentation%2020090324.pdf>.
- 5 For our analysis we will assume: (i) use of the University Plan—4 Years for Infant—Annual Payment under which 17 annual payments of \$3,696.00 are made; (ii) timely payments; and (iii) the same tax presumption as applied in our analysis of the investment plan.
- 6 MPP's weighted average tuition is "the in-state or in-county tuition at each Maryland public college times the number of full-time equivalent in-state or in-county students enrolled at that college, added together ... divided by the number of full-time equivalent in-state or in-county students enrolled at all Maryland public colleges." Average weighted tuition is calculated separately for four-year colleges and two-year community colleges. See the Maryland Prepaid College Trust Disclosure Statement and Enrollment Form 2009–2010, page 1.
- 7 That is, in the case of a net loss, MPP assumes a portion of the loss.
- 8 To provide some perspective, between 1999 and 2009 tuition at University of Maryland, Baltimore County increased at an average annual rate of 5.57 percent. From 2009 to 2010 the largest tuition and fee increase among the University of Maryland schools was 1.70 percent at University of Baltimore and from 2010 and 2011 the largest increase was 4.51 percent at University of Maryland, College Park.