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COLLEGE SAVINGS OPTIONS AND THE IMPACT OF SAVINGS ON FINANCIAL AID

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This article describes some recent trends in the financing of higher education and several college savings options including the tax-favored 529 Plan and Coverdell Education Savings Account. It also discusses the federal financial aid policy and calculates the impact of saving with various vehicles on financial aid. The article finds that consistent with some previous estimates, assets under a student's name will have a large impact on the financial aid eligibility because they are assessed at a 35 percent rate in the EFC calculation and there is no asset protection allowance for students. It also finds that the commonly-referred-to 5.64 percent marginal rate for parental assets in the EFC calculation is overstated for the majority of families in that only families with substantially high incomes are subject to the maximum 5.64 percent rate for all assets above the asset protection allowance. These findings indicate that the impact of parental savings on student's financial aid is likely to be much smaller than was previously estimated.

in this issue

>>> EXECUTIVE SUMMARY

In the last few decades, the cost of attending college has been going up at a much faster pace than the general price inflation and family income, making paying for college a challenge for many families.

This article describes several ways to save for college, including tax-favored education savings programs such as the 529 Plan and the Coverdell Education Savings Account. It also discusses how the federal formula calculates a dependent student's Expected Family Contribution (EFC) and illustrates how asset holdings in various savings vehicles will likely affect a student's financial aid eligibility. Highlights of the article include:

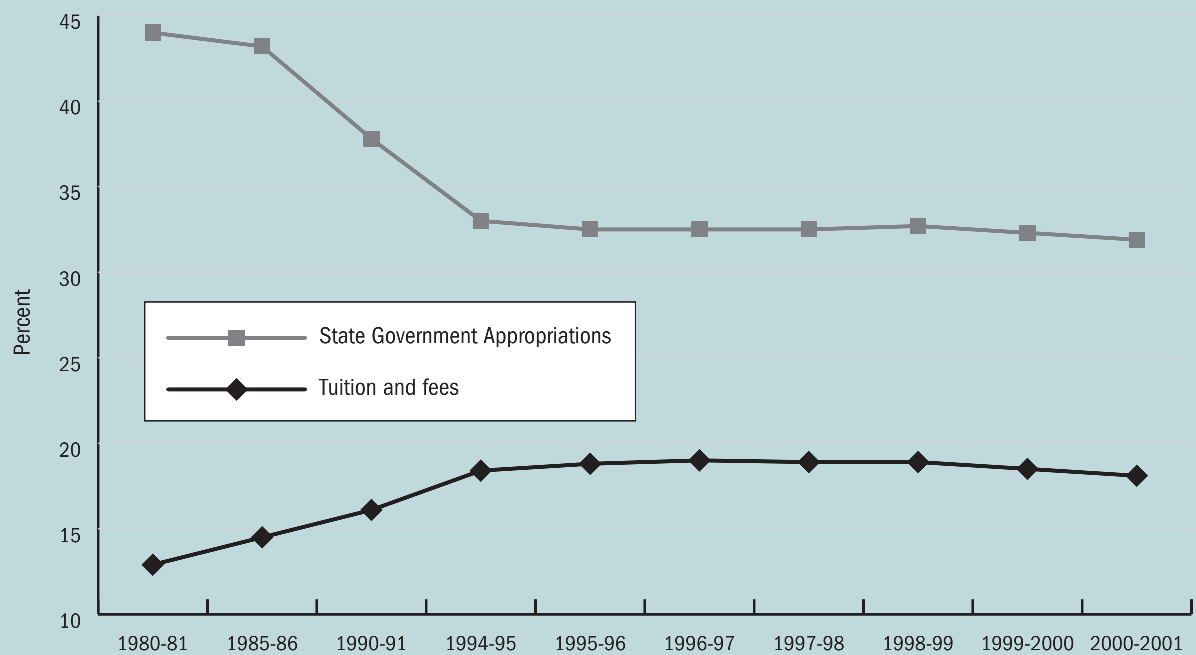
- Assets held under a parent's name such as those in a 529 plan, Coverdell, and mutual fund account will have a much smaller impact on a student's financial aid eligibility than those held under the student's name.
- This is not surprising in that assets held under a parent's name are assessed at a marginal rate of up to 5.64 percent in the EFC calculation, while assets under a student's name are assessed at a 35 percent rate in the EFC calculation and there is no asset protection allowance for students.
- Results also suggest that the commonly-referred-to 5.64 percent marginal rate for parental assets in the EFC calculation is overstated for the majority of families in that only families with substantially high incomes are subject to the maximum 5.64 percent rate for all assets above the asset protection allowance.
- These findings indicate that the impact of parental savings on financial aid is likely to be much smaller than was previously estimated.

>>> INTRODUCTION

Saving for college is one of the most important financial concerns for many American families, perhaps only second to saving for retirement. One main cause for this concern is the ever-increasing college tuition cost, which has been going up at a much faster pace than the general price inflation and family income. Moreover, with the current tight budgetary conditions, there seems to be no sign of immediate relief. For example, for the 2004-05 academic year, the average in-state tuition and fees at four-year public colleges and universities is $5,132, a 10.5 percent increase from the previous year. The average tuition and fees at four-year private colleges and universities is $20,082, a 6.0 percent increase from the previous year. For the same academic year, the average room and board cost is $6,222 at four-year public institutions and $7,434 at four-year private institutions (The College Board, 2004a). Assuming a 5.0 percent increase in the cost of college (tuition, fees, room and board) going forward, the average price tag for a four-year education at a private four-year institution for a student enrolling 10 years from now could be almost $200,000, while the average price tag for a four-year education at a public four-year institution could be almost $80,000.

As the cost of attending college continues to escalate, many families find it challenging when it comes to financing their children's college expenses. In order to help families save for college, the federal government has introduced two tax-favored education savings programs in recent years: the 529 Plan and the Education IRA (recently renamed the Coverdell Education Savings Account). These savings vehicles provide similar tax treatment as the Roth IRA; contributions are not deductible for federal income tax purposes, but earnings on qualified withdrawals are exempt from federal income tax.[1] In addition to these savings programs, the federal government has also introduced several other initiatives for higher education such as the Hope and Lifetime Learning Tax Credits, tax deductions for interest paid on student loans, and penalty-free early withdrawals from IRAs for higher education expenses.

Figure 1 State Appropriations and Tuition and Fees As a Share of Current-fund Revenue of Public Degree-granting Institutions, 1980-81 to 2000-2001



Source: U.S. Department of Education, National Center for Education Statistics.

These initiatives reinforce the important role the government plays in the capital market for higher education investments. In particular, the introduction of tax-favored education savings programs represents a redirection of state and federal efforts toward saving and away from two major forms of public subsidy to higher education—direct state appropriations to public institutions and federal need-based financial aid. With direct state appropriations, public institutions can keep their in-state tuition low and make it available to all state residents. The federal need-based financial aid program is means-tested and available to students who have demonstrated to have financial need.

Figure 1 plots the state government appropriations as well as tuition and fees as a proportion of total current-fund revenue for public degree-granting institutions during the period between 1980-81 and 2000-01. Clearly, the share of state government appropriations in total current-fund revenue for public institutions has decreased considerably during the 20-year period. While the state appropriations accounted for 44.0 percent of the total current-fund revenue for public degree-granting institutions in the 1980-81 academic year, they accounted for only 31.9 percent in the 2000-2001 academic year. During the same period, the share of tuition and fees has gone up from 12.9 percent to 18.1 percent of the total current-fund revenue for public institutions (Department of Education, 2004).

According to projections from the National Center for Education Statistics, the total number of students enrolled in college is projected to rise to 18.2 million by 2013, an increase of 19 percent from 2000 (Department of Education, 2003). This enrollment increase will certainly demand more government support for higher education. Meanwhile, other government expenditures such as Social Security, Medicare, and Medicaid are projected to rise rapidly in the coming decades due to the looming retirement of the baby boomers. With many expenditures competing for government resources, it is difficult to predict whether the government will be able to continue its support for higher education at historical levels. Students and families may have to shoulder a larger share of their college costs going forward.

Although there is financial aid available, the aid award does not always meet all of a student's financial need (Dick and Edlin, 1997). Therefore, families should start college planning as early as possible. This article discusses several options for saving for college and how they will affect a student's financial aid eligibility. The article finds that consistent with some previous estimates, assets under a student's name will have a large impact on the financial aid eligibility because they are assessed at a 35 percent rate in the EFC calculation and there is no asset protection allowance for students. The article also finds that for the majority of families, the commonly-referred-to 5.64 percent marginal rate for parental assets in the EFC calculation is overstated in that only families with high incomes are subject to the maximum 5.64 percent rate for all assets above the asset protection allowance.

The remainder of the article is structured as follows. Section 2 describes several college savings options including the 529 Plan and the Coverdell Education Savings Account. Section 3 describes the federal financial aid policy and estimates the impact of savings on financial aid. Section 4 provides some concluding remarks.

>>> COLLEGE SAVINGS OPTIONS

There are several ways families can save for their children's future college expenses. These college savings vehicles differ in contribution limits, investment strategies, risk involved, tax treatment, and impact on financial aid. This section provides an overview of these options. Some key features of these options are summarized in Table 1.

The 529 Plan

The 529 plans are qualified tuition plans designed to help families save for college expenses. There are two types of 529 plans: savings and prepaid. A 529 savings plan is an investment program that typically offers a range of investment options including stocks, bonds, and money market. A 529 prepaid plan usually allows plan purchasers to prepay future tuition credits at current prices.

Until September 2003, all 529 plans were sponsored by individual states. While most savings plans allow anyone from any state to open an account, most state-sponsored prepaid plans are generally targeted at in-state public colleges and universities and are open to state residents only. In September 2003, a consortium of private colleges and universities (Tuition Plan Consortium) launched a so-called "Independent 529 Plan," which allows investors to lock in the cost of future tuition at any of the consortium's 200-plus participating private colleges and universities with a minimum discount rate of 0.5 percent per year.[2]

Although the first prepaid plan (Michigan Education Trust) was introduced in 1988, it was not until 1996 that the Internal Revenue Services (IRS) added Section 529 to the Internal Revenue Code (IRC) to clarify the federal tax treatment of state-sponsored plans. Under Section 529, earnings in state-sponsored plans grow federal and state tax-free until withdrawal. Contributions to 529 plans are not deductible for federal income tax purposes. However, they are deductible (usually subject to an annual maximum) in many states for state income tax purposes.

Before 2002, earnings on qualified withdrawals (i.e., withdrawals that are used for higher education expenses) from a 529 plan were taxed as the beneficiary's income. *The Economic Growth and Tax Reconciliation Act of 2001 (The 2001 Tax Act)* provided more favorable tax treatment for 529 plans, as the earnings on qualified withdrawals from state-sponsored plans were made exempt from federal income tax, starting in 2002.[3] Most states exempt earnings on qualified withdrawals from state tax as well. Starting in 2004, the Independent 529 Plan is also eligible for the same benefits as state-sponsored plans.

Anyone, regardless of income, can contribute to a 529 plan. Qualified higher education expenses include tuition, fees, room and board, books, supplies, and equipment required for enrollment or attendance at an eligible undergraduate, graduate, or professional institution of higher education, or any approved voca-

Table 1 Key Features of Several College Savings Options

	529 Plans	Coverdell Education Savings Account	Traditional and Roth IRAs	UGMA/UTMA Account	Mutual Funds
Tax Benefits	Contributions are made with after-tax income. Earnings are federal and state income tax deferred and federal income tax free, if withdrawals are used for qualified higher education expenses. Most states exempt earnings on qualified withdrawals from state tax. Some states also allow contributions to be deducted from state income tax (usually subject to an annual limit).	Contributions are made with after-tax income. Earnings are federal and state income tax free, if withdrawals are used for qualified elementary, secondary, and higher education expenses.	Traditional IRA may be tax deductible, in which case the entire distributions will be subject to income tax. Contributions to Roth IRA are made with after-tax income. Earnings on Roth IRA are tax exempt if taken out after the owner turns 59$^1/_2$ and account has been open for more than 5 years.	When the child is under 14, first $800 of unearned income is tax exempt, next $800 taxed at the child's rate (the $800 is for the 2004 tax year), the rest at parents' rate. After child turns 14, all earnings taxed at the child's rate.	No special tax benefits. Earnings are taxed in the year realized.
Are Contributions *Excluded* from the Owner's Taxable Estate?	Yes.	Yes.	No.	Yes.	No.
How Much Can be Invested?	Varies by state. Currently, the highest account balance limit per beneficiary is over $300,000.	Up to $2,000 per year.	Up to $4,000 per year in 2005 (or $4,500 if 50 or older).	No limit. As of 2004, up to $11,000/year can be contributed without triggering gift tax.	No limit.
Qualified Education Expenses	Tuition, fees, books, supplies, room and board, and equipment at an eligible post-secondary education institution.	Same as (1) for higher education expenses. Elementary and secondary education expenses also qualify.	Same as (1).	Any expense.	Any expense.
Financial Aid Treatment	Savings plans: parents' assets if the account is under a parent's name; prepaid plans may reduce aid dollar-for-dollar.	Parents' assets if the account is under a parent's name.	Not considered in the EFC calculation.	Student's assets.	Parents' assets if the owner of the account is a parent.
Who Makes Investment Decisions?	State sponsor with input from program money manager.	Account owner.	Account owner.	Custodian before the child turns 18 or 21. After that, the child.	Account owner.
Are There Income Restrictions?	No.	Yes.	Yes.	No.	No.
Impact on Hope and Lifetime Tax Credits	Education expenses used to support tax-free distributions from a 529 plan may not be used to claim a Hope or Lifetime Learning credit.	Education expenses used to support tax-free distributions from a Coverdell may not be used to claim a Hope or Lifetime Learning credit.	No.	No.	No.
Flexibility	Earnings on non-qualified withdrawals are taxed at the distributee's income tax rate plus an additional 10% tax.	Earnings on non-qualified withdrawals are taxed at the distributee's income tax rate plus an additional 10% tax.	No penalty on early withdrawals if used for higher education expenses.	Money can be withdrawn anytime for the benefit of the child.	Money can be withdrawn anytime for any purpose.

tional/technical school. Eligible postsecondary institutions include those that are accredited and are eligible to participate in student aid programs administered by the Department of Education.

There is generally no annual contribution limit for 529 plans. Most plans impose a lifetime limit per beneficiary on account balances (the sum of contributions and earnings less fees and expenses). Once the combined balance for a designated beneficiary reaches the maximum limit, no new contributions will be allowed. Lifetime limits vary across states and are usually adjusted once a year to reflect inflation. As of March 2005, the lifetime limits in most states are over $200,000 with the highest being over $300,000.

Earnings on non-qualified withdrawals from a 529 plan are subject to federal and state income taxes at the distributee's rate in addition to a 10-percent penalty tax. However, the account owner may make a penalty-free, tax-free rollover by designating another "member of the family" as the new beneficiary. The 10-percent penalty does not apply in the event there is a withdrawal due to the beneficiary's death or disability. If the beneficiary receives a tax-free scholarship, educational assistance allowance, or other tax-free educational benefits, then the distribution from a 529 plan is not subject to the 10-percent penalty to the extent that the distribution is not more than the amount of the scholarship, educational allowance, or other similar benefits.

The Coverdell Education Savings Account

Formerly known as the Education IRA, the Coverdell Education Savings Account was introduced as part of *The Taxpayer Relief Act of 1997*. A Coverdell account is a trust or custodial account set up to pay for qualified education expenses for a designated beneficiary. The beneficiary must be under 18 years old when the account is set up and benefits must be used before the beneficiary turns 30. There is an income restriction on participation in the Coverdell. For 2004, the phase-out range is between $95,000 and $110,000 for single tax filers and between $190,000 and $220,000 for joint tax filers.

Contributions to the Coverdell are made with after-tax income and earnings on qualified withdrawals are exempt from federal and state income taxes. Before 2002, qualified expenses included higher education expenses only. *The 2001 Tax Act* provided that starting in 2002, qualified expenses would also include elementary and secondary school expenses at public, private, or religious schools.[4] *The 2001 Tax Act* also raised the annual contribution limit from $500 to $2,000 per beneficiary, starting in 2002.

Earnings on non-qualified withdrawals from Coverdells are subject to federal and state income taxes at the distributee's rate in addition to a 10-percent penalty (with similar exceptions as those for 529 plans). Note that the federal law prohibits the use of same education expenses to claim more than one tax benefit. For example, the same education expenses cannot be used to support tax-free distributions from both a 529 plan and a Coverdell. Furthermore, the education expenses used to support tax-free distributions from a 529 plan or a Coverdell may not be used to claim a Hope or Lifetime Learning Tax Credit.

Traditional and Roth IRAs

The Traditional and Roth IRAs are trust or custodial accounts set up for retirement. The Traditional IRA was introduced in 1974 and the Roth IRA was introduced in 1997. The 2005 annual contribution limit for both types is $4,000 ($4,500 if 50 or older). For individuals who contribute to both Traditional and Roth IRAs in 2005, they can contribute up to a combined contribution limit of $4,000 ($4,500 if 50 or older). Owners of Traditional and Roth IRAs have full control over investment decisions.

The Traditional and Roth IRAs are attractive savings vehicles because of their tax benefits. The traditional IRA is available to all taxpayers and contributions are tax-deductible for those who qualify. For individuals who are covered by a retirement plan at work, the year 2005 phase-out range for deductible Traditional IRAs is between $70,000 and $80,000 for married taxpayers filing a joint tax return. For single taxpayers, the phase-out range for deductible Traditional IRA is between $50,000 and $60,000. For taxpayers who are not covered by a retirement plan at work, contributions to Traditional IRAs are tax-deductible in most cases and the entire proceeds are subject to income tax upon withdrawal.[5] Before 1997, Traditional IRA distributions made before the owner turned 59½ were subject to an additional 10-percent penalty tax. *The Taxpayer Relief Act of 1997* eliminated the 10-percent penalty on early

IRA withdrawals, provided that the withdrawals are used for qualified higher education expenses for the owner, the spouse, a child, or a grandchild.

In 2005, the Roth IRA is available to single taxpayers with AGI less than $110,000 and joint taxpayers with AGI less than $160,000. Single taxpayers with AGI less than $95,000 and joint taxpayers with AGI less than $150,000 could make a full $4,000 contribution in 2005. Although contributions to Roth IRAs are not tax-deductible, earnings are exempt from income tax if the withdrawals are taken after the owner turns 59½ and the account has been established for at least 5 years. If withdrawals are taken before the owner turns 59½ or before the account has been open for 5 years, the earnings portion will be taxed at the owner's income tax rate in addition to a 10-percent penalty on earnings. Similar to the Traditional IRA case, the 10-percent penalty does not apply if the distributions are used for qualified higher education expenses.

Uniform Gifts or Transfers to Minors Act Account

Any adult can transfer funds to a child through a custodial account under the Uniform Gifts or Transfers to Minors Act (UGMA or UTMA). UGMA allows transfers of cash, stocks, bonds, notes, etc. UTMA allows transfers of properties of any kind.

There is no limit on the amount that can be transferred. Each transfer is an irrevocable gift, to which the federal gift-tax exclusion, currently $11,000 per year, applies. Since the funds in these accounts belong to the child, the tax rules for children's income apply. For the 2004 tax year, the first $800 of unearned income is exempt from federal income tax, the next $800 is taxed at the child's rate, and the remaining portion is taxed at the parents' rate, if the child is under 14. After the child turns 14, all earnings are taxed at the child's rate.

UGMA or UTMA accounts can be a useful estate-planning tool for families who wish to reduce their tax payments. One issue to keep in mind, however, is that the assets in these accounts technically belong to the child, and the transfer is irrevocable. Before the child reaches the age of majority, the custodian of the account (who may be the donor or an independent trustee) has control of the account only to the extent of exercising investment discretion. Once the child reaches the age of majority—18 or 21, depending on the state—he or she assumes full control of the account and may use it for any purpose.

Mutual Funds

Although there are no special tax benefits for saving for education with mutual funds, they may appeal to some investors in their own right. First, there is no income restriction and no savings limit. Second, investors have complete control of the account and over investment decisions. Third, funds may be withdrawn at any time for any purpose.

Realized gains on mutual fund accounts are subject to federal and state income taxes each year. The realized capital gains from stock appreciation is subject to long-term capital gains tax if the assets in the mutual funds have been held for more than a year. If the assets have been held for less than a year, capital gains are taxed as regular income. *The Job Growth and Tax Relief Reconciliation Act of 2003 (The 2003 Tax Act)* made mutual funds more attractive than before as it lowered the long-term capital gains tax rate to 15 percent from 20 percent for individuals in higher federal income tax brackets. For individuals in the 10 percent and 15 percent federal income tax brackets, the long-term capital gain tax rate was lowered from 10 percent to 5 percent through 2007 and to 0 percent in 2008. Before 2003, the dividend and interest portion of the earnings in mutual fund accounts was taxed as the account owner's regular income. *The 2003 Tax Act* also provided more favorable treatment for qualified dividends, as they would be taxed at the same rates as net capital gains, starting in 2003.[6]

>>> SAVINGS AND FINANCIAL AID

The interaction of savings and financial aid eligibility is a very complex issue. Generally speaking, savings may affect a student's eligibility for financial aid. A student's financial need is determined by the difference between the cost of attendance at a school and the student's Expected Family Contribution (EFC). A student's EFC can be considered as the amount of college expenses the student and his/her family are expected to contribute towards his/her college costs. The cost of attendance is the estimated sum of tuition and fees, room and board, books and supplies, transportation, and miscellaneous expenses. For any given level of cost of attendance, the larger the EFC, the smaller the student's financial need, and thus the less amount of aid the student is eligible.

In calculating a dependent student's EFC, up to 5.64 percent of parents' assets and 35 percent of the student's assets are considered available to pay for college expenses. Therefore, assets held in the student's name would reduce the student's financial need much more than assets held in a parent's name would.

In most cases, a student's EFC is determined by the Federal Methodology, which was established by the U.S. Congress and administered by the U.S. Department of Education. In some cases, colleges and universities use the Institutional Methodology to calculate a student's EFC for non-federal financial aid. A major difference between the Federal Methodology and the Institutional Methodology is that the Institutional Methodology takes into consideration home equity while the Federal Methodology does not.

In 2003-04 academic year, the federal government provided roughly two-thirds of the total $122.0 billion direct aid to students (The College Board, 2004b). Since federal financial aid makes up the majority of total student financial aid, this section discusses in detail the Federal Methodology for the calculation of EFC and presents an example of the impact of saving with various vehicles on financial aid.

The Federal Methodology for the Calculation of the EFC

Most federal financial aid programs require that students fill out a Free Application for Federal Student Aid (FAFSA). The FAFSA collects information on a student and parents' income and assets, family size, etc. After the FAFSA is submitted, the Central Processing System at the Department of Education applies the Federal Methodology formula to determine a student's EFC and confirms some of the eligibility requirements through computer matches with other agencies.

Based on a student's dependency status, one of three EFC formulas is applied to calculate the student's EFC. These three formulas are for dependent students, independent students without dependents other than a spouse, and independent students with dependents other than a spouse, respectively. This article focuses on the formula used for dependent students.

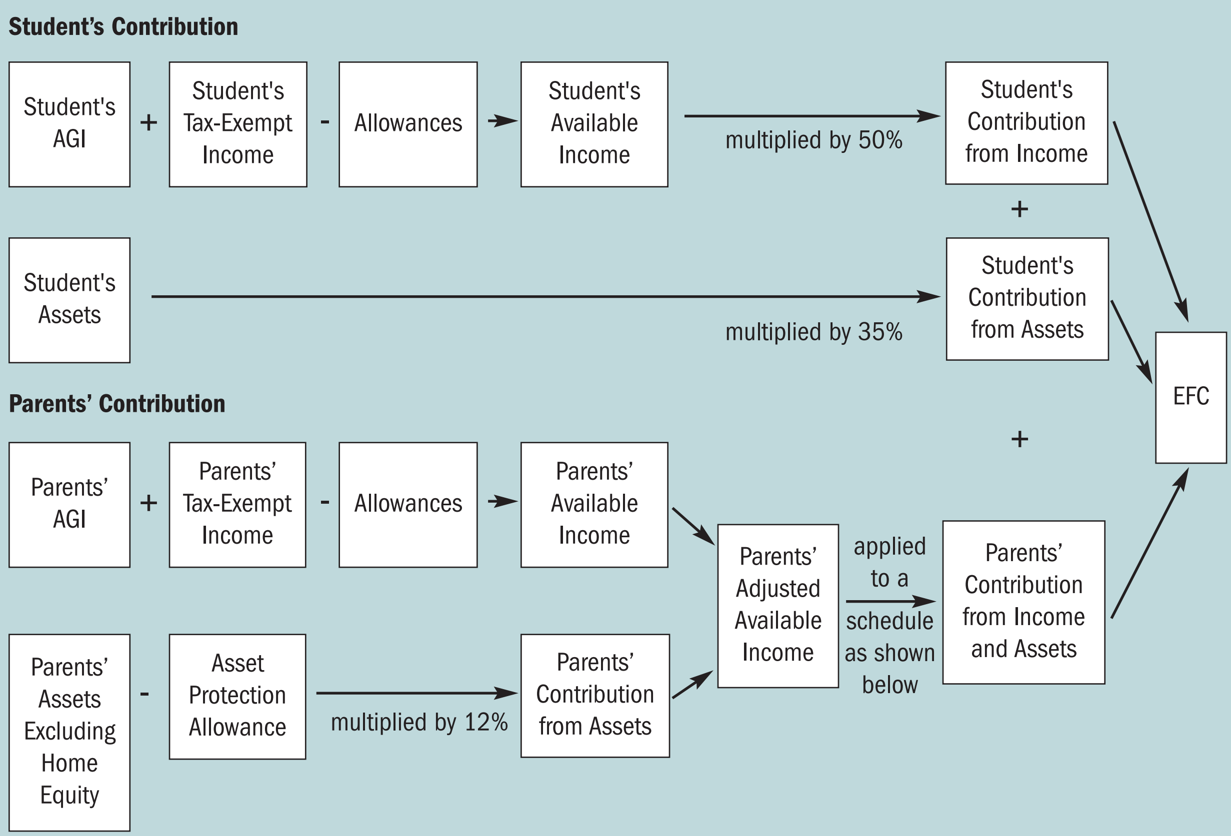
A dependent student's EFC comes from the student's contribution from income and assets and parents' contribution from income and assets, calculated as follows and illustrated in Figure 2.

A. Parents' contribution from income and assets:

- First, start from the parents' adjusted gross income (AGI) as reported on the tax return.
- Second, add back some tax-exempt income such as earned income tax credit, contributions to a retirement plan, and tax-exempt interest income.
- Third, subtract several allowances including income protection allowance (to cover living expenses), federal and state income tax allowance, social security tax allowance, and employment protection allowance. The result is called Available Income (AI).
- Fourth, parents' discretionary net worth is calculated by summing up parents' financial assets excluding home equity and subtracting an asset protection allowance.
- Fifth, 12 percent of parents' discretionary net worth is added to parents' AI to get parents' Adjusted Available Income (AAI).
- The parental contribution from income and assets is then determined by applying a progressive schedule to the AAI. As the table in Figure 2 shows, for the 2004-05 academic year, the annual marginal rate used by the Federal Methodology ranges from 22 percent to 47 percent. Therefore, for families facing the maximum 47 percent rate, 5.64 percent (12 percent multiplied by 47 percent) of parents' assets above the asset protection allowance are considered available to pay for college expenses.

It is worth noting that: 1) after subtracting various allowances, parents' AI is usually much lower than their AGI. 2) Parents' retirement assets are excluded from their discretionary net worth. 3) The asset protection allowance is to provide parents for retirement. For families with an older parent between the ages of 40 and 65, the asset protection allowance approximates the present value of an annuity which, when combined with Social Security benefits, would provide at age 65 a

Figure 2 Expected Family Contribution for a Dependent Student Using the Federal Methodology



Parents' Contribution from AAI, 2004–2005 Academic Year

If parents' AAI is	*The parents' contribution from AAI is*
-$3,410 or less	-$750
-$3,409 to $12,200	22% of AAI
$12,201 to $15,400	$2,684 + 25% of AAI over $12,200
$15,401 to $18,500	$3,484 + 29% of AAI over $15,400
$18,501 to $21,600	$4,383 + 34% of AAI over $18,500
$21,601 to $24,700	$5,437 + 40% of AAI over $21,600
$24,701 or more	$6,677 + 47% of AAI over $24,700

moderate level of living for a retired couple or a single person. Therefore, the allowance increases with the age of the older parent. For the 2004-05 school year, the asset protection allowance ranges from zero to $73,700. For a two-parent family with the older parent being 50, the allowance is $47,900. 4) For families with more than one child in college, parental contribution per student is obtained by dividing the total parental contribution by the number of dependent college students in the household.

B. Student's contribution from income and assets:

- First, start from the student's AGI as reported on the income tax return.
- Second, add back some tax-exempt income and benefits.
- Third, subtract several allowances including federal and state income tax allowance, social security tax allowance, and income protection allowance.
- The result is called Available Income (AI). Fifty percent of the student's AI is considered available to pay for college expenses.
- Thirty-five percent of the student's assets are considered available to pay for college expenses. There is no asset protection allowance for the student.

The financial aid treatment of various saving options is included in Table 1. As Table 1 shows, assets in a 529 savings plan, Coverdell, and mutual fund account held under a parent's name are considered as parents' assets for financial aid purposes and thus assessed at a marginal rate of up to 5.64 percent in the EFC calculation. Assets in a 529 prepaid contract usually reduce a student's cost of attendance by the value of the contract and thus reduce a student's aid on a dollar-for-dollar basis. Assets in a UGMA account are considered as the student's assets in the EFC calculation and assessed at a 35 percent rate. Assets in Traditional or Roth IRAs are not included in the EFC calculations.

Impact of Savings on Financial Aid

Several studies have examined the interaction of savings and financial aid rules. Using data from the 1986 Survey of Consumer Finances (SCF), Feldstein (1995) estimates that the federal financial aid rules reduce the value of an extra dollar of savings by 30 cents in four years. If the family has two children attending college in succession, then the value of an extra dollar of savings would be reduced by 50 cents in eight years. Feldstein concludes that such capital levies of 30-50 percent create a strong incentive for families not to save for college expenses. Dick and Edlin (1997) analyze aid award data from the 1987 National Postsecondary Student Aid Study (NPSAS) to estimate the size of the income and asset levies implicit in the financial aid formula. They show that aid award does not generally cover all of a student's financial need—a one-dollar fall in the EFC does not generally lead to an extra dollar in aid. Their estimates suggest that at average-priced colleges the marginal asset levy ranges from 8 to 26 percent, which is much smaller than estimates reported in Feldstein (1995).

Table 2 presents some numerical calculations on how saving with various vehicles will affect financial aid. These calculations are similar to those in Dynarski (2004) in spirit. This example considers a case in which parents living in New York State save for a newborn child with $1,000 annual contributions at the beginning of each year for 18 years.

Assume all savings options are invested in an equity index fund with a net annual rate of return of 6 percent. The purpose of assuming the same rate of return for all savings vehicles is to isolate the impact of tax treatment of earnings on final accumulations. For the 529 Plan and the Coverdell, earnings are tax-free when withdrawals are used to pay for higher education expenses. For the mutual fund and UGMA accounts, earnings are assumed to be distributed each year as long-term capital gains.[7] For the tax-deductible Traditional IRA, contributions are deductible and the entire proceeds are subject to income tax upon withdrawal. For the Roth IRA, earnings are tax-free upon withdrawal. Mathematically, the final after-tax accumulation in a deductible Traditional IRA is the same as that in a Roth IRA, assuming the tax rates stay constant throughout the investment horizon.

This example assumes parents are in the 25 percent federal income tax bracket and the child is in the 10 percent federal income tax bracket. However, because all earnings in the mutual fund and UGMA accounts are assumed to be distributed as long-term capital gains, only the tax rates on long-term capital gains affect asset accumulations. The tax rates on long-term capital gains are 15 percent for the parents for the entire investment horizon and 10 percent for the child through 2008 and 0 percent after that. In other words, the calculations assume that the 2003 federal law that provides these capital gains tax rates will be extended beyond 2008.

Table 2 shows that after 18 years of investing, the accumulations would be the same if the parents save with a 529 plan without state tax deductions, a Coverdell, a Traditional or Roth IRA ($32,760). The

Table 2 Accumulations in Various College Savings Vehicles and the Impact on Financial Aid—$1,000 Annual Contributions for 18 Years, Assets Drawn Down in Year 19 through 22

Savings Options	Freshman Year (19th Year)	Accumulations at the Beginning of Sophomore Year (20th Year)	Junior Year (21st Year)	Senior Year (22nd Year)	Maximum Potential Reductions in Aid Related to Asset Holdings Over Four Years
	Column 1	*Column 2*	*Column 3*	*Column 4*	*Column 5*
529 Plan with State Tax Deductions	$34,877	$26,904	$18,453	$9,495	$5,061
529 Plan without State Tax Deductions	$32,760	$25,271	$17,333	$8,919	$4,754
Coverdell	$32,760	$25,271	$17,333	$8,919	$4,754
Roth or Traditional IRA	$32,760	$25,271	$17,333	$8,919	$0
UGMA	$32,381	$24,922	$17,034	$8,692	$29,060
Mutual Fund	$28,611	$21,798	$14,665	$7,198	$4,076

Assumptions:

1) Parents contribute $1,000 at the beginning of each year for 18 years and start withdrawing funds starting year 19. Assets are withdrawn in four equal payments in the four years when the student is in college.
2) Annual net rate of return is 6.0% for all savings vehicles.
3) For the mutual fund and UGMA accounts, each year stock gains are assumed to be distributed as 100% long-term capital gains.
4) Parents' federal long-term capital gains tax rate: 15% for the entire investment horizon.
5) Child's federal long-term capital gains tax rate: 5% through 2007 and 0% from 2008 on.
6) Parents' state income tax: 6.85%, federal income tax: 25%.
7) Child's state income tax: 4%, federal income tax: 10%.
8) These calculations assume that the federal law allowing tax-free qualified 529 withdrawals gets extended beyond 2010 and the federal law that provides the 15% and 5% long-term capital gains tax rates gets extended beyond 2008.
9) This chart is for illustrative purposes only.

accumulation would be higher if parents use a 529 plan that allows state tax deductions for contributions ($34,877), assuming the amount saved in state income tax is reinvested in the 529 plan. After 18 years of investing, the accumulation in an UGMA account would be $32,381 and in a mutual fund account would be $28,611.

Assume that parents start to withdraw funds in equal payments for four years starting the beginning of the 19th year (or the student's freshman year in college). Therefore, by the 22nd year, or when the student is in the final year in college, funds will be depleted. During this period, any remaining funds continue to earn a 6 percent net annual rate of return. For the UGMA and mutual fund accounts, any realized gains in this time period are subject to taxes, which are assumed to be paid out of the accounts. Columns 1, 2, 3, and 4 report the balance at the beginning of the 19th, 20th, 21st, and 22nd year, respectively.

Now consider the impact of savings on financial aid. Column 5 reports the maximum potential reductions in financial aid that are related to these asset holdings. Not surprisingly, assets held under a student's name such as those in a UGMA would have a very large impact on the student's financial aid eligibility. The total potential reductions in aid over a four-year period could come close to the total value of the assets at the beginning of the student's freshman year. This is not surprising given the student's assets are assessed at a 35 percent rate in the EFC calculation.

Table 3 Estimated Parental Contribution and the Rates at Which Additional Assets Are Assessed, by Parental Income and Assets, Using Federal Methodology, for 2004-2005 Academic Year

Parents' 2003 Before-Tax Income		Net Assets (Excluding Primary Residence, Family Farm, and Assets in Retirement Accounts)				
		$47,900	*$60,000*	*$80,000*	*$100,000*	*$200,000*
(1)	$20,000	$0	$0 (0.00%)	$0 (0.00%)	$0 (0.00%)	$0 (0.00%)
(2)	$30,000	$0	$0 (0.00%)	$0 (0.00%)	$0 (0.00%)	$0 (0.21%)
(3)	$40,000	$0	$0 (0.00%)	$0 (0.00%)	$0 (0.00%)	$1,188 (1.73%)
(4)	$50,000	$0	$0 (0.00%)	$0 (0.00%)	$30 (2.30%)	$2,674 (2.72%)
(5)	$60,000	$136	$456 (2.64%)	$984 (2.64%)	$1,512 (2.64%)	$4,509 (3.34%)
(6)	$70,000	$1,618	$1,937 (2.64%)	$2,465 (2.72%)	$3,036 (3.09%)	$7,103 (4.58%)
(7)	$80,000	$3,119	$3,482 (3.05%)	$4,178 (3.48%)	$4,959 (4.08%)	$10,199 (5.42%)
(8)	$90,000	$4,783	$5,277 (4.08%)	$6,208 (4.69%)	$7,254 (5.48%)	**$12,894 (5.64%)**
(9)	**$100,000**	**$7,011**	**$7,694 (5.64%)**	**$8,822 (5.64%)**	**$9,950 (5.64%)**	**$15,590 (5.64%)**
(10)	**$150,000**	**$20,293**	**$20,976 (5.64%)**	**$22,104 (5.64%)**	**$23,232 (5.64%)**	**$28,872 (5.64%)**
(11)	**$200,000**	**$33,739**	**$34,421 (5.64%)**	**$35,549 (5.64%)**	**$36,677 (5.64%)**	**$42,317 (5.64%)**

Note: Numbers in parentheses indicate the average rates at which additional assets are assessed in the EFC calculation.

Assumptions:

1) A two-parent family with two dependent children.
2) The older parent is 50 and both parents are employed.
3) Income is from employment in 2003.
4) Parents were required to file an IRS Form 1040 tax return for 2003.
5) The family used the standard deduction
6) Only one child is enrolled in college.
7) Parents are residents of the New York state.

Column 5 also shows that assets held in a 529 plan, Coverdell, or mutual fund will have a much lower impact on financial aid than those held in a UGMA account. Moreover, assets held in a parent's retirement account such as a Traditional or Roth IRA would not be considered in the EFC calculation. Note that this table focuses on the impact of asset holdings on financial need and does not reflect the reductions in financial need that are related to earnings on withdrawals, which may be considered as part of the total income.

These calculations are in line with those reported in Dynarski (2004) and illustrate the maximum potential impact of parental assets on financial aid. For the majority of families, however, such estimates will likely overstate the impact of savings on financial aid for several reasons. First, as Kane (1999) argues, if a family's income or assets are sufficiently high, they may face a zero marginal rate from the federal financial aid system. This may be the case because for these families, their EFCs may be higher than the cost of attendance. Therefore, there is no financial need for these families. Second, if a family's income is sufficiently low, it may qualify for a simplified EFC formula if the parents' AGI falls below a certain level (currently $50,000) and neither the student nor the parents were required to file an IRS Form 1040 for the previous tax year. Because the simplified formula does not take assets into consideration in the EFC calculation, assets in this case will not

Table 4 Family Income and Holdings of Financial Assets from the 2001 Survey of Consumer Finances, by Income Percentile and Age of Household Head

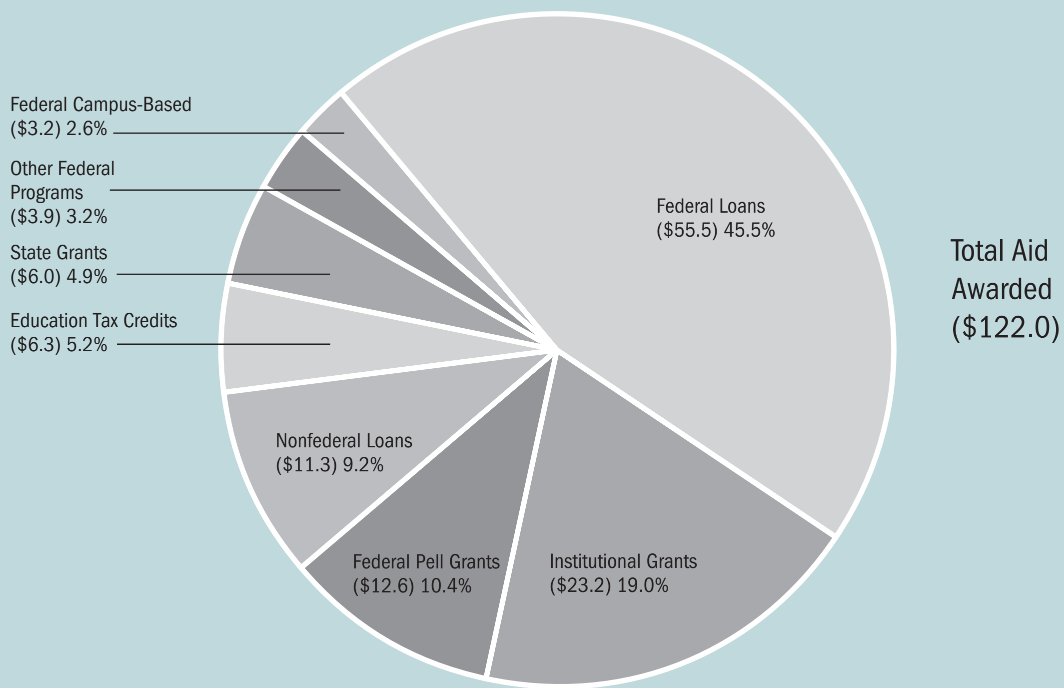
	Percent of Families	Median 2001 Family Income (in thousands of 2001 dollars)	Percent of Families Who Hold Any Financial Asset	Median Value of Holdings for Families Who Hold Any Financial Asset (In thousands of 2001 dollars)
All Families	100.0%	$39.9	93.1%	$28.0
Percentile of income				
Less than 20	20.0%	$10.3	74.8%	$2.0
20–39.9	20.0%	$24.4	93.0%	$8.0
40–59.9	20.0%	$39.9	98.3%	$17.1
60–79.9	20.0%	$64.8	99.6%	$55.5
80–89.9	10.0%	$98.7	99.8%	$97.1
90–100	10.0%	$169.6	99.7%	$364.0
Age of head (years)				
Less than 35	22.7%	$33.4	89.2%	$6.3
35–44	22.3%	$51.4	93.3%	$26.9
45–54	**20.6%**	**$54.5**	**94.4%**	**$45.7**
55–64	**13.2%**	**$45.2**	**94.8%**	**$56.6**
65–74	10.7%	$27.8	94.6%	$51.4
75 or more	10.4%	$22.4	95.1%	$40.0

Source: *Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances*.

affect the amount of financial aid the student is eligible for. If the parents' AGI is less than $15,000 and neither the student nor the parents were required to file an IRS Form 1040 for the previous tax year, then the student is automatically eligible for a zero EFC. For families who qualify for the simplified formula or a zero EFC, they face a zero marginal rate on assets as well.

Third, even for families whose marginal rates are not zero, chances are that the majority of them will not be subject to the maximum 5.64 percent marginal rate on assets. To illustrate this point further, Table 3 presents estimated parental contributions for various levels of parental income and assets for the 2004-05 academic year, using the Federal Methodology. This example considers a family of four with one college student and two working parents with the older parent being 50. The asset protection allowance level for them is $47,900, implying a zero marginal rate for assets below this allowance level, regardless of income. The numbers in parentheses represent the rates at which additional assets are assessed toward the EFC, for a given level of income. For example, Row (5) reports the estimated parental contribution toward EFC for a family income level of $60,000. For such a family, if parental assets go up from $47,900 to $60,000, the estimated parental contribution will go up from $136 to $456, implying the additional assets are assessed at a rate of 2.64%.

Figure 3 Estimated Student Aid by Source for Academic Year 2003-2004 (Current Dollars in Billions)



Source: *Trends in Student Aid 2004,* The College Board.

Table 3 shows that when parental assets are at the asset protection level of $47,900, the estimated parental contribution toward the EFC is zero for families with income of $50,000 or less. For a family with income of $50,000, their estimated parental contribution is zero even with a parental asset level of $80,000. Table 3 also shows that of all the income and asset levels considered, only when the parental income is $100,000 or more that all assets above the asset protection level will be assessed at a 5.64 percent rate.

To put these calculations in perspectives, Table 4 reports the median family income and financial asset holdings from the 2001 SCF. The SCF is a triennial survey conducted by the Federal Reserve Board to measure the finances of American families. Table 4 shows that the median 2001 family income in the U.S. was $39,900, with 93.1 percent of all families holding some form of financial assets. For families who hold any financial assets, the median value of holdings was $28,000.

Table 4 also reports median family income and financial assets by family income percentile and the age of household head. Although this table does not contain information on how many children are in the household or the age of the children, it should provide some insight on the financial situation of households who are likely to have college age children, say, households with a head between 45 and 54 or between 55 and 64. For the 45-54 group, the median 2001 family income was $54,500 and the median 2001 financial assets was $45,700 (the asset protection allowance for this age group ranges from $42,100 for age 45 to $53,100 for age 54, if there are two parents in the family). For the 55-64 group, the median 2001 family income was $45,200 and the median 2001 level financial assets was $56,600 (the asset protection allowance for this age group ranges from $54,700 for age 55 to $71,300 for age 64, if there are two parents in the family). This indicates that more than half of the families have financial assets below the asset protection levels. Note that these financial assets include assets in retirement accounts, which are not considered in the EFC calculation. Family holdings of non-retirement financial assets would be much lower and the proportion of families with non-retirement financial assets below the allowance levels would be much higher.

To Save or Not to Save?

Although savings may affect the amount of financial aid a student is eligible for, in most cases it is the amount of loans that will be affected since only students with very low EFCs are eligible for grants. Colleges and universities usually try to meet students' financial need with aid packages that consist of grants, loans, and work-study. As Figure 3 shows, an estimated $122.0 billion student aid was available to help students pay for postsecondary education in the 2003-2004 academic year. Of this amount, $81.5 billion was provided by the federal government with $55.5 billion in the form of federal loans (The College Board, 2004b). Unlike grants, loans must be repaid. The more families save for college, the less they will need to borrow.

Saving for college may have a positive influence on a student's college aspiration. As Hoxby (1999) argues, saving specifically for college expenses will make families think more concretely about college education and with greater commitment, which in turn, will make their children think more concretely about college and be prepared for it better. Moreover, paying for college with savings may have a positive influence on students' college experience. Despite the fact that loans are available and can be made the responsibility of the student himself, anecdotal evidence suggests that many families with a record of successful college attendance make considerable use of internal family financing (i.e. parental savings). Although the greater college success of savers may be due to their greater incomes or superior planning, it is also possible that savings and loans do not have parallel effects on students' college experience. Perhaps piling up debt worries students and causes them to disengage from college in order to earn money.

As the calculations in Table 3 show, the marginal rate at which parental assets are assessed is less than the maximum 5.64 percent for the majority of families. Only families with substantially high incomes will face a marginal rate of 5.64 percent. One should also keep in mind that for some of these high-income families, their marginal rate would actually be zero if their EFCs exceed the costs of attendance.

Another reason for families to save for college is that financial aid awards do not always meet all of a student's financial need. Data from the 2000 NPSAS suggest that for the 1999-2000 academic year, approximately half of all full-time dependent students had some unmet need (U.S. Department of Education, 2002). The amount of unmet need ranged from $3,900 for students enrolling in public two-year institutions to $9,700 for students enrolling in private not-for-profit doctoral and liberal arts colleges, with an average amount of unmet need of $5,100 for all students with unmet need. Such levels of unmet need are substantial, given the average total cost of attending a public two-year institution for the same year was $8,600 and that of attending a private not-for-profit doctoral and liberal arts college was $28,800. Families would have to finance their unmet need either out of their own pockets or through additional borrowing.

>>> CONCLUDING REMARKS

More and more families are realizing the importance of a college education as the economic return to a college degree has increased significantly in the past few decades. At the same time, the cost of college continues to rise at a fast pace, making it challenging for many families to pay for college.

In order to help families realize their aspirations for college, the federal government has introduced two tax-favored savings programs that are targeted at education savings. These programs are the 529 Plan and the Coverdell Education Savings Account. These savings programs feature after-tax contributions, tax-free earnings growth, and tax-free earnings on qualified withdrawals. In addition to these targeted education savings programs, this article describes several other college savings options such as the UGMA accounts, Traditional and Roth IRAs, and mutual fund accounts.

This article also discusses the federal formula to calculate a dependent student's EFC and presents an example of the impact of saving with various vehicles on financial aid. The example shows that assets held under a parent's name will have a much smaller impact on a student's financial aid eligibility than those held under a student's name. This is because assets under a student's name are assessed at a 35 percent rate in the EFC calculation and there is no asset protection allowance for students. Results also suggests that the commonly referred to 5.64 percent marginal rate for parental assets in the EFC calculation is overstated for the majority of families in that only families with very high incomes are subject to the maximum 5.64 percent rate for all assets above the asset protection allowance. These findings indicate that the impact of parental savings on student's financial aid is likely to be much smaller than was previously estimated.

Although financial aid is available to help families pay for college, families should save at lease part of the expected college expenses for several reasons: 1) the majority of the financial aid is in the form of loans, which must be repaid. 2) Financial aid awards do not always meet all of a student's financial need. 3) With tight budgetary conditions, it is not clear whether the government will be able to continue its support for higher education at historical levels.

The views expressed in this paper are those of the author's alone and are not necessarily those of TIAA-CREF or any of it's staff members.

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>>> ENDNOTES

[1] Note that the tax law that provides federal tax exemption on earnings on qualified 529 plan withdrawals is scheduled to expire on December 31, 2010. Congress may or may not extend the law beyond this date.

[2] For more information on the Independent 529 Plan, see www.independent529plan.org.

[3] Note that the provisions of *The 2001 Tax Act* regarding Section 529 of the IRC are scheduled to expire on December 31, 2010. Congress may or may not extend the tax benefits beyond this date. If the law is not extended, the federal tax treatment of 529 plans will revert to its status prior to January 1, 2002.

[4] Allowable higher education expenses are the same as those for 529 plans. Allowable elementary and secondary school expenses include tuition, fees, academic tutoring, books, supplies, other equipment, "special needs services", room and board, uniforms, transportation and "supplementary items and services".

[5] Single taxpayers who are not covered by a retirement plan at work can make a deductible contribution to Traditional IRA regardless of their income. For married taxpayers, the contribution is deductible regardless of their income if the spouse is not covered by a retirement plan at work either. For married taxpayers whose spouse is covered by a retirement plan at work, their Traditional IRA contributions are deductible as long as the combined AGI is less than $150,000.

[6] Note that the provisions in *The 2003 Tax Act* regarding long-term capital gains and qualified dividends are scheduled to expire on December 31, 2008, and may or may not get extended beyond that date.

[7] If instead all gains in the UGMA and mutual fund accounts are unrealized each year, and are realized at the end of the 18th year, the accumulation at the beginning of the 19th year for the UGMA account would be less than 1 percent higher than that reported in Table 2 and for the mutual fund account would be only 3.4 percent higher than that reported in Table 2.

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