New Lessons About 529s
Who Should Use Them, What Makes Them Powerful, and Where They Can Be Improved
A Powerful, But Neglected, Tool

The single largest source of money that American families use to pay for college, after scholarships and grants, is loans. According to research by student-loan provider Sallie Mae, savings covers only 13.5% of the bill. So, the challenge for many parents is simple: how to borrow less, and still pay for college.

Education savings accounts—special accounts with tax incentives for families who save for college—are a potential way to do exactly that. Without an additional penny of savings, education savings accounts could help parents have more money available for college, and therefore borrow less. But only a small fraction of parents use these accounts: The most popular type of account, the 529, is used by only 16% of families saving for college.

This report takes a deeper look at 529s: What makes them powerful, for whom they excel, and how they can be improved. To answer these questions, we conducted two analyses. First, we used a nationally representative sample of American households, the Survey of Consumer Finances, to examine what would happen if every household saving for college used 529s instead of other types of accounts. Second, we conducted an online experiment to test interventions that could increase 529 use where appropriate.

We found that:

1. American families are leaving more than an estimated $237 billion on the table by not investing their college savings in 529s.
2. The primary benefit of investing in a 529 isn’t actually the 529’s tax advantages—it’s the fact that it encourages investing (instead of using a savings account). There are, of course, other ways that families can do this.
3. Unlike existing 529 users, who are predominantly wealthy, middle- to upper-middle-class families would benefit the most if 529s were used more broadly.
4. More people would use 529s if they were simply explained more effectively.

---

1. Author’s calculations based on Sallie Mae, How America Pays for College, 2017, Table 1a.
2. Based on author's analysis of Sallie Mae/Ipsos microdata from How America Saves for College (2018); about 16% of precollege parents are saving into a 529, compared with 7% for all other educational savings accounts combined. Similarly, of the money that families save, about 40% is invested in education savings accounts (30% in 529s; 8% in prepaid tuition plans; 2% in Coverdells). The authors would like to thank Sallie Mae and Ipsos for providing the microdata for this analysis.
What Makes 529s Powerful

Our Analysis

What do the benefits of 529 plans actually mean in practice for real American families?

To answer this question, we looked at a nationally representative sample of American households with children younger than 18, drawn from the U.S. government’s 2016 Survey of Consumer Finances. Using data from Sallie Mae’s 2018 report, *How America Saves for College*, we then estimated how much each household in the survey has saved thus far for their children’s education and where they are saving that money (529s, other investment accounts, or checking/savings accounts).³

Then, for each household, we considered an alternative scenario: What would happen if, at the birth of each child, the family had directed all education savings for their children into a 529 instead of other vehicles? How would the potential benefits of 529s translate into additional money for each family? We looked at the unrealized upside: the money that’s left on the table because families use other vehicles that lack the tax advantages of 529 plans.

Throughout the analysis, we left each family’s contribution rate unchanged; this analysis looked solely at the effect of using a 529 instead of other vehicles. Similarly, for families already using a 529, no change occurred with those funds (and thus they received no additional tax benefit).

Big Benefits

If American households used 529s exclusively for college savings, the benefits would be considerable: an estimated $237 billion by the time their children attended college. For the average family, this comes to $4,044 per child.

There were some surprises when we dug deeper into the numbers. The $237 billion in additional wealth comes from three sources:

1. Unused state tax benefits: $26 billion
2. Unused capital gains tax benefits: $50 billion
3. The (post-tax) benefit of investing college savings: $161 billion

The largest single benefit of 529 plans comes from moving existing savings into an investment account—and earning higher returns in exchange for additional risk. To be clear, that is not a benefit that occurs solely with 529s; it’s one that all investment accounts share. Many families use savings and checking accounts instead of investment accounts to hold their college savings, and 529s simply encourage families to invest those funds.

*Exhibit 1* displays the per-child benefit in each of these areas compared with the average allocation for college savings. Of the $4,044 total per child mentioned above, $2,763 comes from investing otherwise uninvested funds. The added benefits from the unique aspects of 529s, capital gains and income tax incentives, provide a smaller bump of $839 and $442 per child, respectively.

³ For both 529s and non-529 investment accounts, we assumed the same profile of fees, and the same glide path of stocks and bonds, based on Morningstar’s analysis of the median asset allocation used in 529s (Blanchett and Stempfli 2013). The key difference lay in the tax benefits of the 529.
Collectively, this is a significant amount of money. And, for a given family, it represents an opportunity to borrow thousands of dollars less when it’s time for college.

**The average family currently leaves money on the table by not using 529 plans**

<table>
<thead>
<tr>
<th>$25K</th>
<th>$20,453</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>16,409</td>
</tr>
<tr>
<td>15</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Existing Approach | All Invested in a 529 Plan

Source: Authors’ analysis.

Here’s another way to look at it: Compared with the current approach the average family takes (placing savings in a mix of accounts), the average family could save 25% less and still have the same amount available when their child is ready for college by saving all of those funds in a 529 plan with a standard investment strategy to reduce risk exposure over time.

Given these significant savings, it’s easy to see why 529 plans are often promoted as an essential tool for parents saving for college. These average gains, however, are not evenly distributed: Some families would benefit more than others.

**When 529s Excel**

There’s significant variation among families regarding the benefits of 529 plans—for any particular family, the benefit can be negligible, or it can be tens of thousands of dollars. The impact relies on three factors: whether college funds are invested, how much is saved, and where a family lives.
**Big Benefits for Middle-Class Families**

The single greatest benefit of 529s is that savings are invested, instead of being held in a low-yield savings or checking account. Middle-class Americans would benefit from this change the most. Families with higher incomes already use 529s or other investment vehicles, while those with low incomes generally don’t have enough saved to see a substantial benefit. Exhibit 2 shows this in more detail, based on microdata from the 2018 Sallie Mae study, *How America Saves for College*.

<table>
<thead>
<tr>
<th>Household Income of Families Saving for College</th>
<th>Average Current Value of College Savings in Checking, Savings, or Other Non-Investment Vehicles</th>
<th>% of Total College Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $35,000</td>
<td>$2,695</td>
<td>74%</td>
</tr>
<tr>
<td>$35,000 to $49,999</td>
<td>$3,450</td>
<td>56%</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>$6,129</td>
<td>67%</td>
</tr>
<tr>
<td>$75,000 to $99,999</td>
<td>$10,732</td>
<td>56%</td>
</tr>
<tr>
<td>$100,000 to $149,999</td>
<td>$9,668</td>
<td>35%</td>
</tr>
<tr>
<td>$150,000 or more</td>
<td>$7,668</td>
<td>22%</td>
</tr>
</tbody>
</table>

Data from Sallie Mae/Ipsos.

Families who earn between $75,000 and $100,000 per year potentially forgo thousands of dollars in investment earnings.

**Location, Location, Location**

The two other benefits of 529s—state income and capital gains tax incentives—are relatively straightforward. For families in high-tax, high-deduction states, the more they contribute, the greater the benefit (subject to caps). Similarly, the more money they have to contribute to 529s, the greater the potential capital gains benefit. In both cases, the wealthier benefit: Savings for college education increases with income. According to Sallie Mae data, the average family saving for college with income less than $35,000 per year has $3,626 saved in investment and non-investment vehicles (averaged across families with children of all ages), and families with income higher than $150,000 per year have about $35,000 saved.

Less obvious is what these factors actually mean for a given family, and the variations across families. Let’s look at an example: a married couple with two children, ages 4 and 7, earning $73,000 a year, and with total college savings of $20,000, all outside of educational savings accounts (half is invested, half is in savings). If they lived in California, a state with no 529 deduction, and maintained that rate of saving until their children were 18, they would have roughly $40,000 per child. If they invested that money in a 529 plan, they would have more than $49,000 per child for college. Is the $9,000 difference worth the added risk that comes from investing? It depends on their preferences, goals, and broader financial picture.
Similarly, if an otherwise identical family lived in Illinois, they would have $51,700 per child because of the tax benefits. Would that make them more likely to use a 529 plan? Again, it’s a personal choice.

While this analysis focuses primarily on the aggregate benefit across real American households, we shouldn’t lose sight of the fact that at the individual level, the per-household costs and benefits vary for economic and other reasons. But the aggregate benefit is there, and it behooves the industry and policymakers to help individuals make informed and thoughtful choices.

How to Improve 529s

The benefits of 529 plans appear to be significant, but these plans are still not widely used. Since families are potentially losing out on a significant amount of money, why don’t they use 529s? What would persuade them to consider it?

Surveys by Sallie Mae, Fidelity,⁴ and others ask people to describe why they don’t use 529s and other education savings accounts, but we have good reason to believe that these stated reasons aren’t accurate depictions of their behavior. Behavioral researchers have found, for example, that merely prechecking the sign-up box on retirement plans significantly increases adoption.⁵ Surveys aren’t the most effective way to find obvious and simple solutions like this, because it’s not something people self-report. It’s preferable to see what people do, rather than what they say, then rigorously compare outcomes using a randomized experiment.

To date, there appears to be only one such paper in the field: Bridget Terry Long and Eric Bettinger conducted an experiment⁶ that evaluated how different ways of conducting 529-plan workshops affect long-term savings behavior and postsecondary outcome.

For this paper, we developed a simple but novel experiment on 529 savings behavior. It helps us shed light on potential interventions one could use in practice, and it also calls attention to the need for further research in this area.

Our Experiment

We conducted an experiment to test whether different techniques answered concerns that families might have about 529s. The participants in the study were members of the Prolific.ac platform, a data-collection platform developed for the research community to survey individuals across the globe on a variety of topics. Participants in this study were all residents of the United States with children under 18. In total, 887 participants passed our filter criteria and participated in the study.

The participants fell into two main groups—those who were saving for their children’s college education and those who were not. For those who were saving, we asked them how much they planned to save in 2019 by account type (savings, checking, investment account, certificate

---

⁴ Fidelity’s 10th Annual College Savings Indicator 2016
of deposit, 529, or other education plans). For those not saving, we provided them with a hypothetical amount of $1,000 and asked them how they would allocate it, understanding that hypothetical values are far less reliable than real-money scenarios.

We randomly assigned each participant to one of four interventions:
1. A null intervention that provided general information about the rising cost of college. (“Null”)
2. A table summarizing the benefits and drawbacks of 529s that was designed to overcome the problem of information overload with 529s. (“Table”)
3. A graph comparing the financial benefits of 529s quantitatively against other account types that was designed to overcome the challenge of calculating complex costs and benefits. (“Graph”)
4. An infographic showing how to sign up for 529s that was designed to overcome uncertainty and fear about the sign-up process. (“Infographic”)

After the intervention, all participants had an opportunity to revisit their allocation breakdown.

**Visual Comparisons Made a Difference**

For the families currently saving but not enrolled in 529 plans, we found that helping participants better understand 529s could significantly increase their planned contributions to 529s. The graph and table interventions — both of which broke down the benefits of 529s compared with other account types — impacted savings allocations the most. The infographic intervention—which educated participants on how to sign up and sought to make the process less daunting — didn’t significantly differ from the null intervention. For the non-savers asked to allocate hypothetical funds, the results were similar but more pronounced—they were more willing to save money they didn’t actually have.

**Exhibit 3: The effect of interventions on 529 allocations (for families saving for college but not invested in 529 plans)**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Average % of College Savings Allocated to 529s</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rising Cost of College (Null)</td>
<td>+5</td>
<td>+5</td>
</tr>
<tr>
<td>Comparison Table on Benefits and Drawbacks</td>
<td>+10</td>
<td>+10</td>
</tr>
<tr>
<td>Graph on Quantified Financial Benefits</td>
<td>+15</td>
<td>+15</td>
</tr>
<tr>
<td>Infographic on Sign-up Process</td>
<td>+20</td>
<td>+20</td>
</tr>
</tbody>
</table>

Source: Authors’ analysis.

Using the Tukey HSD result, the graph and table interventions were significant within 95% and 90% confidence intervals, respectively. The infographic intervention was statistically insignificant.
A Powerful Tool, for Specific Circumstances

There are substantial benefits to using 529 plans. If families were to invest their college savings fully in 529s, they could increase their collective funds for college by more than $237 billion. But the biggest benefit of increased 529 use doesn’t come from tax advantages—it comes from investing in higher-yielding vehicles than checking or savings accounts. This benefit isn’t unique to 529s, but it’s an important side effect.

But investing a family’s savings for college—even along a glide path that decreases volatility over time—isn’t the right choice for every family, given their circumstances and preferences. The considerable financial benefits—on average more than $4,000 per child—make 529s worth considering, however.

It is important to remember that this windfall isn’t evenly distributed. Middle- and upper-middle-class families—those with incomes between $50,000 and $100,000 who have considerable sums saved for college in low-yielding checking and savings accounts—would benefit the most from moving their funds into 529 plans. Higher-income families have already learned to invest most of their college savings (in 529s or otherwise). Lower-income families generally save far less for college and would see proportionally less benefit.

In addition, our experiment showed that breaking down the financial benefits in a comprehensive and accessible manner may help families increase their planned 529 contributions.

Practical Applications

What do these results mean for the financial services industry, policymakers, and advisors?

1 There are missed opportunities. A significant amount of money is being left on the table as families prepare for their children’s college education. Without saving an additional penny, they could have $237 billion more by using investment accounts (and 529s in particular) for their savings.

2 Focus on the middle class. Middle- to upper-middle-class families would especially benefit from increased investing in 529s. Advisors should see uninvested college savings as a sign that their clients are leaving money on the table.

3 Investing matters more than byzantine state rules. Despite considerable discussion in the field about the annoyances and complexities of variations in state-by-state deductions, those deductions aren’t the most important part of 529s; investing and capital gains incentives are. State rules can be a distraction for families saving for college, and for the industry.

4 Yet again, personalized advice is essential. The aggregate story is not the same as the individual story. In the end, the right choice for any particular family depends on their specific financial circumstances and preferences.

5 We can help families make the right call. As prior research has shown, the 529 system is complex and clearly daunting to many families. The industry and policymakers have two options if they want to help people make informed decisions. They could standardize rules across states or federalize the system. Or, our experiment offers hints of another option that’s cheaper and far easier: Simply present information about 529s in an accessible manner.
Increased use of 529 plans offers tremendous promise for American families saving for college, and while our research found some new lessons for everyone to study, more research, and more work, by everyone in the industry is needed to realize that promise.

About Steve Wendel
Steve Wendel is a behavioral scientist who studies financial behavior and how digital products can help individuals manage their money more effectively. He serves as head of behavioral science at Morningstar, where he leads a team of behavioral scientists and practitioners to conduct original research on saving and investment behavior. Steve has authored two books on applied behavioral science, Designing for Behavior Change and Improving Employee Benefits, and founded the nonprofit Action Design Network, educating the public on how to apply behavioral research to product development with monthly events in 10 cities. He has two wonderful kids who don’t care about behavioral science at all.

About Michael Leung
Michael Leung is an associate behavioral designer at Morningstar, focusing on improving investor outcomes and success through software development. He joined Morningstar as a data analyst in 2015. Michael holds a bachelor’s degree in economics, history, and East Asian studies from Wesleyan University.
The Investor Success Project

Beginning in 2018, Morningstar will roll out new research on investors—who they are, what their goals are, and how the advisors and asset managers that serve them can make the most impact in helping them reach those goals.

We don’t know what we’ll find, but we’ll share everything we learn. We believe every bit of data that’s uncovered can move the industry toward a future that emphasizes investors’ front-and-center role in the markets and helps them succeed.

Learn More About The Investor Success Project
morningstar.com/company/investor-success