FINANCE WITH THE FRIDAYS TREASURER

A Financial Literacy Newsletter

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NC Cash | NC ABLE

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Finance Fridays
is a publication of the N.C. Department of State Treasurer. Treasurer Brad Briner is focused on preserving, protecting and sustaining the state's pension and healthcare plans. Briner was most recently the Co-Chief Investment Officer for Willett Advisors and has held positions at Morgan Creek Capital, the UNC Management Company, ArcLight Capital and Goldman Sachs.



Bottom Line With Brad

COMPOUND INTEREST

Peter Minuit was originally from Germany but moved to the Netherlands in search of better economic opportunity for his family. That led him to taking a job with the Dutch East India Company, and ultimately becoming responsible for setting up the Dutch colony of New Netherland (which would later be known as the states of New York, New Jersey, Delaware and Connecticut) in 1625.

In 1626, Peter made a major land purchase for the Company, paying approximately $24 for the entire island of what is now called Manhattan. As the total value of all the property in this, the central portion of New York City, is something like $3 trillion today, it seems that Peter made a real estate deal for the ages!





But did he? The purchase was almost 400 years ago… which brings me to this month's topic of compound interest. Interest is what you earn when you wait to spend money later. We talked a lot about the concept of opportunity cost last month, which is very much related to the rate of interest or return.

The compound piece of compound interest is really important as well – this is the simple fact that once you have been paid some interest, you can also defer using that money, and earn interest on the interest. This compounds, or enhances, the growth of your money.

To illustrate this phenomenon with a simple example, let's say you have 40 years until retirement, and your grandmother gives you $1,000. If the long-term rate of interest is 5%, you could earn $2,000 of interest over the next 40 years without compounding, and have a total of $3,000 when you retire. That's 40 years, times 5%, which is 200% of the $1,000.

But if you earn that 5% each year, and save the interest payment so you can earn interest on the interest, with the magic that is compounding, you would actually earn over $6,000 of interest instead… as shown below, the difference starts small and grows over the first 5 years – but towards the end the differences are massive

	Simple Interest			Compound Interest		
Year	Beginning	Interest Earned	End	Beginning	Interest Earned	End
1	$1,000	$50	$1,050	$1,000	$50	$1,050
2	$1,050	$50	$1,100	$1,050	$53	$1,103
3	$1,100	$50	$1,150	$1,103	$55	$1,158
4	$1,150	$50	$1,200	$1,158	$58	$1,216
5	$,1,200	$50	$1,250	$1,216	$61	$1,276
36	$2,750	$50	$2,800	$5,516	$276	$5,792
37	$2,800	$50	$2,850	$5,792	$290	$6,081
38	$2,850	$50	$2,900	$6,081	$304	$6,385
39	$2,900	$50	$2,950	$6,385	$319	$6,705
40	$2,950	$50	$3,000	$6,705	$335	$7,040

So, did Peter make a great deal or not? Much of the answer depends on whether the $24 benefitted from compound interest over the last almost 400 years. If that money was saved - and earned compound interest of 7% over that period - it would have grown to almost $12 trillion today. That's around four times what Manhattan is worth today! Compound interest is truly the 8th wonder of the world…



The Federal Reserve (more commonly called the Fed) is an independent body that serves as the central bank for the U.S. The system has three key entities: The Board of Governors, the Federal Reserve Banks, and the Federal Open Market Committee (FOMC). Think of the Fed as the U.S. economy's central guardian.

This month we're talking about interest rates - and that is what many people think of when they think about the Fed. So, let's look at how the actions of the Fed affect this.

The Federal Open Market Committee's (FOMC) main monetary policy tool is setting a target for the federal funds rate. This is the benchmark interest rate that banks charge each other when lending their money held at the Federal Reserve. When the Fed increases this rate, it makes it more expensive for banks to borrow from each other. Banks then pass on the costs to consumers by increasing their interest rates. Simply put: When it is more expensive to get a loan, fewer loans are taken out, taking money out of the economy. If the Fed decreases the rate, the opposite happens. It becomes cheaper to lend money. When loans are cheaper, more loans go out and more money goes into the economy.

So how does FOMC balance out rate increases and decreases? In general, it focuses on satisfying two long term goals:

1. Stable prices - anchored around 2% long-term inflation
2. Maximum employment

The FOMC typically meets eight times a year to decide if any changes to the federal funds rate are needed.



By Ryan Grammatico
Executive Director, Right Moves For Youth

There's something special about a teen's first summer job. Whether it's scooping ice cream, lifeguarding at the neighborhood pool, or helping out at a local business, it's often their first taste of financial independence. It's also a powerful opportunity to shape the way they see — and handle — money for years to come.

For the past 14 years, I've worked in youth development, walking alongside young people as they navigate adolescence and prepare for adulthood. One thing I've learned without question: When we help young people understand money early on — especially how it grows — they gain not just knowledge, but confidence and a vision for their future.

That's where **compound interest** comes in.

Compound interest might sound like something reserved for grown-ups, but the truth is, it's *the* game-changer for teens who are just beginning to earn. Simply put, compound interest is when you earn interest on your original money *and* the interest that money earns over time. It's like a snowball rolling downhill — it starts small, but over time it grows bigger and faster.

Let's say a 16-year-old saves $500 from their summer job and puts it in an account that earns 5% interest per year. If they don't touch it, in 10 years, that money grows to over $800. But if they keep adding $500 every summer and let it grow, by the time they're 30, they could have close to $10,000. All from a few summer jobs and the magic of compounding.



Now imagine the *mindset shift* that happens when a teen *gets* this. They begin to see saving not as something they "have" to do but something that benefits *them*. They see their future self not as someone far away, but as someone they're investing in right now. That's powerful.

And this is where we, as adults (parents, mentors, educators, youth workers) come in. We need to talk with teens about money, not just in terms of budgeting or avoiding debt (though that's important), but as a tool that, when understood, can give them choices and security. It's not about getting rich; it's about *being ready* for emergencies, for opportunities, for life.

At Right Moves For Youth, we've seen firsthand what happens when students are equipped with financial knowledge. They start saving for college or a first car. They take pride in being able to help at home. They make smarter choices about spending, because they understand the *value* of a dollar, not just the *cost* of something they want.

This summer, as teens step into jobs and start to earn, let's encourage them to also step into a new understanding of money. Let's introduce them to the concept of compound interest in a way that makes sense and gets them thinking long term.

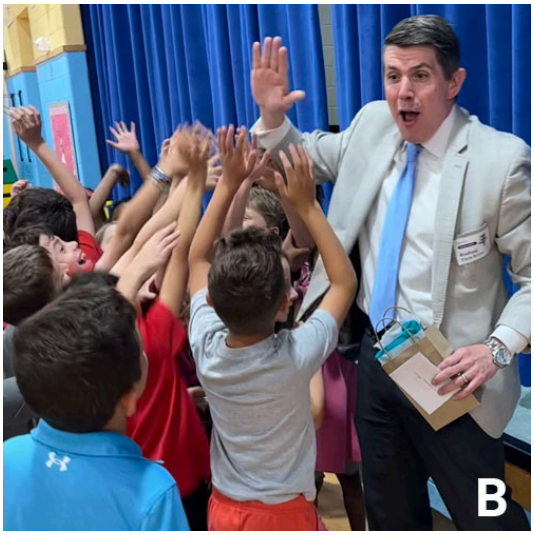
We don't have to be financial experts to plant these seeds. We just need to believe that young people can learn, grow and take ownership of their future. And when they do, they not only change their own lives, they change the story for generations to come.

Financial Literacy in Action

Brad continued his effort to bring financial literacy to folks across the state over the last month. It's a chance for him to talk to people - young and old - about what they should be thinking about when it comes to money. He got an opportunity to be part of the North Carolina Council on Economic Education's Annual Awards Luncheon in Greenville. It's always so impressive to see how many teens are mastering financial literacy topics! He also got a chance to talk with some second graders from Jones Dairy Elementary School as they finished up their economics unit. We're not sure who had more fun, Brad or the students. The day included some shopping at the students' market, where they sold products they made, and handled all the financial transactions. He also got the opportunity to speak to seniors as part of the AARP's Without Limits podcast - a chance to talk about current issues they should be paying attention to. If you have an opportunity for Brad to participate in financial literacy in action, let us know!

Pictures:
A: Brad with one of the winning teams from NCCEE's Economic Challenges
B: A group high-five after Brad and second graders talk about what he does as State Treasurer
C: Brad goes shopping at the Jones Dairy Elementary market put on by students
D: AARP's Without Limits podcast taping to talk current financial issues









WHEN CHASING CREDIT CARD POINTS **COMPOUNDS INTO PROBLEMS**



By Mark Soticheck, CPA, CGMA

Ah, credit cards. The shiny, plastic keys to a world of rewards points, cashback, and—unfortunately—debt. You swipe your card here, rack up a few points there, and before you know it, you're tempted to spend more than you planned. But here's the catch: if you don't pay that balance off in full, you're not just paying for your purchases, you're also paying for something else: interest.



Mark Soticheck, Chief Executive Officer, North Carolina Association of Certified Public Accountants

...credit card companies **don't just wait** until the end of the month **to charge interest.**

Why Credit Cards Can Feel Like a Bad Joke

It's like buying a $100 shirt on sale for $50, only to realize a few months later you owe $75. Ouch. That's the reality of how compound interest works with credit cards. The high interest rates that credit card companies charge (often 20% or more) mean that your debt can grow quickly, especially if you only make minimum payments. Even though you're earning rewards points or cashback on your purchases, those benefits might not even cover the interest you're accumulating. Let's break it down and see how compound interest on credit card debt can turn your rewards points into bigger problems.

How Fast Does Credit Card Debt Grow?

Here's where it gets tricky: Credit card companies don't just wait until the end of the month to charge interest. They often charge compound interest on a daily or monthly basis, meaning every single day or month, your debt grows a little bit more. Even if you're making the minimum payments, your balance still increases, and you end up paying more in interest.

For example, if your credit card charges 1.5% monthly interest (which is roughly 18% annually), you'd owe an extra $7.50 on a $500 balance after one month. If you continue carrying that balance, your debt grows even faster. The longer you wait, the bigger the snowball gets. Soon, you're paying more in interest than you originally borrowed, and your credit card balance is much higher than that original purchase.

How to Keep Compound Interest from Becoming a Problem

The best way to avoid letting compound interest spiral into a big problem is simple: Pay off your balance in full every month. This way, you don't accumulate any interest, and your debt doesn't grow. But what if you can't pay the full amount? Try to make payments above the minimum whenever possible. Even a little extra can help reduce the interest you owe.

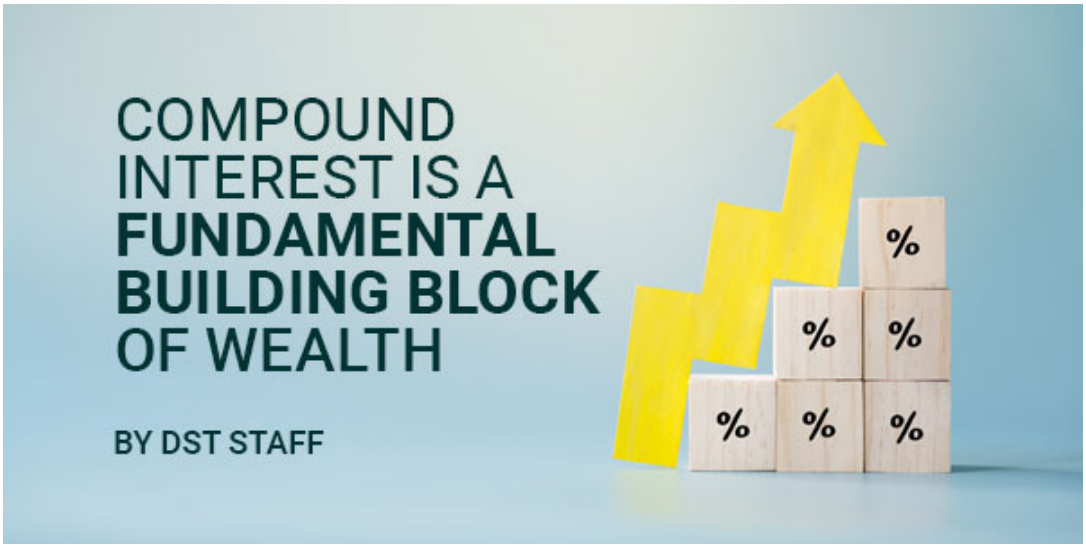
If you can't pay off your balance in full, consider transferring your debt to a credit card that offers a 0% interest rate for a limited time. Just be careful: once the promotion ends, you'll be charged interest, and that compound interest will kick in again.

The Takeaway: Stop the Snowball Before It Grows

While rewards points are fun, compound interest on credit card debt is not. If you can't pay off your balance each month, interest can quickly become a problem. Stay on top of your credit card balances and avoid letting compound interest snowball into debt that's harder to manage. The key is to make more than the minimum payment, pay off your balance when you can, and don't let interest take you by surprise.







Compound interest is not a get-rich-quick scheme, but it is a proven strategy to build your wealth. Even so, this concept of surely and steadily increasing assets is not well understood by many people trying to get ahead.

We surveyed a dozen people in an unscientific, man-on-the-street poll to gauge their knowledge of compound interest. They ranged in age from their 20s to their 60s, from students and teachers to attorneys and military retirees. Four gave a correct definition of the dynamic. Four sort of knew what it was. Four didn't have a clue.

Investor.gov at the U.S. Securities and Exchange Commission offers a textbook definition of the magic of compound interest:

“Compound interest is the interest you earn on interest. This can be illustrated by using basic math: if you have $100 and it earns 5% interest each year, you'll have $105 at the end of the first year. At the end of the second year, you'll have $110.25. Not only did you earn $5 on the initial $100 deposit, but you also earned $0.25 on the $5 in interest. While 25 cents may not sound like much at first, it adds up over time. Even if you never add another dime to that account, in 10 years you'll have more than $162 thanks to the power of compound interest, and in 25 years you'll have almost $340.”

Others have likened compound interest to a snowball rolling downhill. The farther it rolls, the more snow (interest) packs onto the original orb (principal). The farther the snowball rolls — or the longer you leave your investment in place — the larger it gets. Your money is multiplying at an accelerated rate.

Financial institutions set the compound interest rate and payment intervals. More frequent intervals create more earnings. Investopedia describes the formula like this:

“Imagine that two options are available on a $1,000 investment. Under option one, the investor receives an 8% annual interest rate and the interest compounds monthly. Under option two, the investor receives an 8.125% interest rate, compounded annually.

“By the end of a 10-year period, the $1,000 investment under option one grows to $2,219.64, but under option two, it grows to $2,184.04. The more frequent compounding of option one yields a greater return even though the interest rate is higher in option two.”

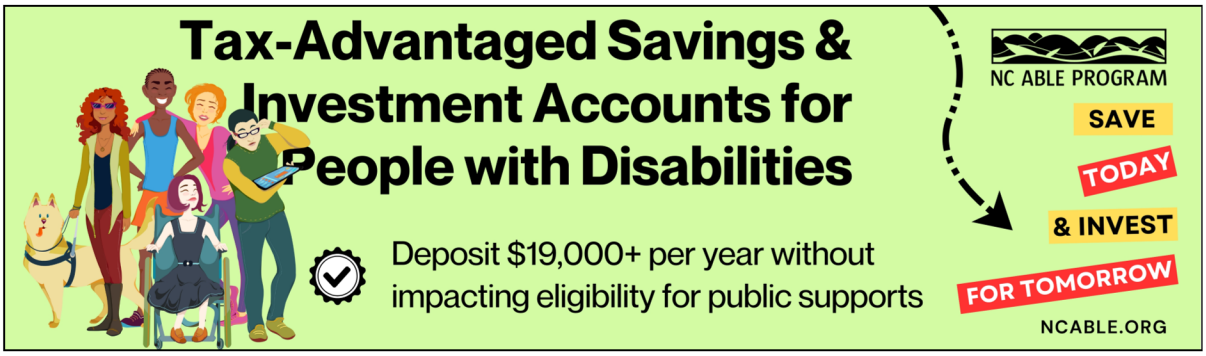
Just understanding compound interest isn’t enough. Knowing your risk tolerance and researching the rates of return on different investments are essential steps.

For those who want to take more aggressive investment actions, stocks could be an option. According to incrediblebank, the Standard & Poor's 500 index for leading stocks shows the compounded rate of return was 14.9% for the 10 years ending Dec. 31, 2024.

Some people might prefer less risky investments such as a bank savings account. Money can be withdrawn easily from those accounts when needed. But they don’t earn as much, according to Bankrate. Today's top savings rate is 4.40%. When considering high-yield savings accounts, look for those that don’t charge fees and have low minimum deposit requirements.

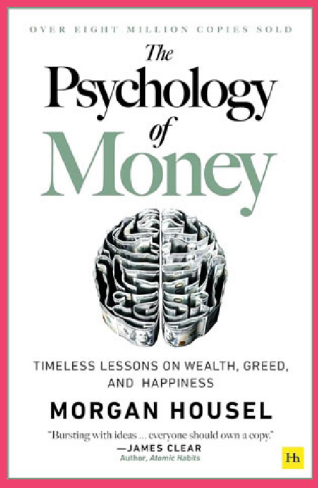
Whatever investment vehicle you choose, understanding the benefit of compound interest is important.

“Compound growth puts time on your side,” said Kevin SigRist, chief investment officer at the Department of State Treasurer. “For each dollar you save, and the younger you are when you save that dollar, the more money you'll have in retirement.”



Book of the Month: "The Psychology of Money

This month, Brad's suggested reading is The Psychology of Money by Morgan Housel. This is a bestseller and for good reason - it gives an easy-to-understand, storytelling approach to how people think about money. You can buy the book here or borrow it from a local library - like this one.







For Teens:

What is the difference between compound interest and interest rate?

A. Compound interest is the percentage charged on a loan, while interest rate is the money earned on savings.
B. Interest rate alone determines how much compound interest will grow, while compound interest is calculated only on the original principal.
C. Compound interest refers to the total interest on the principal and previous interest, while interest rate is the percentage used to calculate interest on a loan or investment.

A person deposits $5,000 in a bank account, which pays 6% simple interest per year. Find the value of his deposit after four years.

A. $1,200
B. $6,200
C. $20,000

Why should I care about compound interest and investing?

A. Investing secures your financial future; compound interest refers to the process where the earnings on your investment generate additional earnings over time. This can lead to a more comfortable lifestyle, reduced financial stress, and the potential for early retirement.
B. Investing seems stressful and complicated. If my parents aren't worried about their financial future then I shouldn't be either.
C. Investing secures your financial future and increasing the compounding frequency doubles your interest, leading you to becoming 20x richer.

For Adults/Seniors:

Jennifer is saving up for a house and wants a 20% down payment. She will invest a lump sum into a savings account for five years that pays 4.3% annual interest and compounds monthly (12 times per year). After some calculations, she figures her ideal house will cost $140,000. How much should she put in the savings account?

A. $22,591.84
B. $28,000
C. $17,351.40

What is compound interest?

A. Interest calculated on the original principal only.
B. Interest that stays constant every year.
C. Interest added to the principal and then earns interest itself.

Is it too late for me to start investing?

A. Yes, you won't recover from market downturns, and you'll end up in debt anyway.
B. No, it's never too late to invest. While starting young does allow your investments to grow over the years, saving regularly trains you to live within your means and the power of compounding can still benefit you.
C. No, it's never too late to invest. As long as you only invest in 401k's and individual stocks you'll be richer than Mr. Monopoly himself.

Click here for the answers.

Sources

Onlinemath4all.com
Guide for Investment
Greenmath

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Contact us with questions about financial literacy or suggestions for topics to explore.

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