## Retirement Today

## an educational series for retirement plan investors


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## What is compound interest?

Compound interest. This is one of the fundamental concepts of investing that is particularly beneficial when saving for your retirement through a tax-advantaged, employer-sponsored plan. Essentially, compound interest can be explained as interest making interest. When your investment earns money, this amount is reinvested in your account and potentially generates more earnings. With enough time, this process has the potential to make a significant impact on your savings.
Here's how: Consider two investors. At age 25 , investor A invested \$15,000 at an interest rate of 5.5 percent. Assuming the interest rate was compounded annually, and ignoring taxes and fees, investor A will have $\$ 57,200.89$ in her account when she reaches 50 .

Investor B did not start investing until he reached age 35. At that time, he invested $\$ 15,000$ at the same interest rate of 5.5 percent, compounded annually and ignoring taxes and fees. Investor B reaches age 50 will have $\$ 33,487.15$ in his account when he reaches 50 .

Why the Difference? Both investors are 50 years old and invested the same amount but investor A has $\$ 23,713.74$ more in her savings account than investor B. By giving her investment more time to grow, investor A earned a total of $\$ 42,200.89$ in interest and investor B earned only \$18,487.15.

As reflected in the chart, investor A's account climbs as she nears her 50s because she has accumulated more interest and because this accumulated interest is accruing even more interest. Time and reinvestment are the hallmarks of putting money to work when investing for your retirement.


This hypothetical example is to illustrate the concept of compounding interest and is not indicative of any investment's performance. Past performance is no guarantee of future results. Expenses and taxes have not been included in this illustration that could affect performance.

## The earlier, the better

The earlier you start saving, the more your money can work for you. For every 10 years you delay before starting to save for retirement, you will need to save three times as much each month to catch up.

As an example, let's say beginning at age 20 you invested \$1,000 a year into a definedcontribution plan every year for 11 years and then stopped. If the account earns 7 percent annually, your savings will equal $\$ 168,515$ at age 65 .

However, if you started investing \$1,000 annually beginning at age 30 for 35 straight years and earn the same 7 percent annually, your account would only grow to $\$ 147,914$ at age $65 .{ }^{1}$

## Compounding at work

The value of $\$ 1,000$ compounded at various rates of returns over time is reflected in the chart below.

Notice the gain in each 10-year period. This results from money being earned on an increasingly larger pool of money. Also, when you double your rate of return from 4 percent to 8 percent, the impact after 30 years is more than three times what you would have accumulated with a 4 percent return.

Years

| $\mathbf{4 \%}$ | $\mathbf{6 \%}$ | $\mathbf{8 \%}$ | $\mathbf{1 0 \%}$ |
| :---: | :---: | :---: | :---: |
| $\$ 1,481$ | $\$ 1,791$ | $\$ 2,159$ | $\$ 2,594$ |
| $\$ 2,191$ | $\$ 3,207$ | $\$ 4,661$ | $\$ 6,728$ |
| $\$ 3,243$ | $\$ 5,743$ | $\$ 10,063$ | $\$ 17,449$ |

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## For more information, visit carillontower.com.

## References:

${ }^{1}$ Source: "Savings Fitness: A Guide to Your Money and Your Financial Future," U.S. Department of Labor, Employee Benefits Security Administration
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