

How compound investing works

It's one of the most important financial concepts to understand and leverage to reach your financial goals.



What is compounding?

Think about the money you have in a savings account. Every month, those dollars earn interest. While the first interest payment is calculated based on what's in your account the first time you deposit those dollars, every subsequent interest payment is calculated based on the principle and the interest the bank has already paid out. If you have \$100 in the account and earn 2% on that money annually, then you'll have \$102 by the end of the year. The next year, interest is calculated on \$102 instead of \$100, assuming you've made no further deposits.

Compounding, in other words, is when you earn interest on your interest, and that can snowball into bigger gains over time. This is especially true for investment earnings, which can potentially deliver larger rates of return than savings accounts. The greater those returns, the faster your nest egg will grow.

Time is power

In his book *Millionaire Teacher: The Nine Rules of Wealth You Should Have Learned in School*, Andrew Hallam calls compounding returns the world's most powerful financial concept. To illustrate the snowball effect of compounding over time, he uses the following example,

which you can replicate using a compound interest calculator.

Say you invest \$100 with a 10% annual rate of return. (Rates of return are lower these days, but we'll go with this for simplicity.) Thanks to compounding, you'd end up with:

- \$259.37 after 10 years
- \$672.74 after 20 years
- \$1,744.94 after 30 years
- \$4,525.92 after 40 years
- \$11,739.08 after 50 years
- \$30,448.16 after 60 years
- \$78,974.69 after 70 years
- \$204,840.02 after 80 years
- \$531,302.23 after 90 years
- \$1,378,061.23 after 100 years

While most of us don't have 100 years to let our money grow, the example shows how even a tiny one-time investment of \$100 can grow exponentially by compounding over time.

Another way to figure out how compounding could impact your investments is to use the rule of 72, which tells you how many years it takes to double your investment when returns

are compounded annually. Divide 72 by your annual rate of return to get the answer in years. For example, using a 6% average annual investment return, it would take 12 years to double your investment.

Compound investing with monthly contributions

Let's look at a more realistic example. Say you decide to invest an initial amount of \$10,000 in a conservative investment portfolio that pays average annual returns of 5%. You also set up automatic contributions of \$500 a month, and your portfolio is held in a Tax-Free Savings Account or a Registered Retirement Savings Plan so that you aren't paying taxes on any investment returns (note: you would, however, pay tax on any RRSP withdrawals). Here's what your portfolio would be worth after 10, 20, 30, and 40 years:

	Day 1	After 10 years	After 20 years	After 30 years	After 40 years
Deposits	\$10,000	\$70,000	\$130,000	\$190,000	\$250,000
Investment earnings	--	\$23,470	\$99,435	\$260,907	\$561,662
Balance	\$10,000	\$93,470	\$229,435	\$450,907	\$811,662

With a relatively small initial investment (\$10,000), additional investment contributions of \$6,000 per year, and a modest (5%) average annual rate of return, you would more than triple your investments to a total of nearly \$812,000 in 40 years. Such is the power of compounding.

As well, when it comes to savings accounts, the interest that's paid out can be calculated daily, quarterly, or annually. The more frequent the payment period, the more you'll have to compound.

To take advantage of compounding, start investing in a well-diversified portfolio as early as you can and contribute to it regularly. With dedication, time, and compounding, you can reach your goals sooner than you might think.

Disclosure: This publication and its contents are for informational purposes only. Information relating to investment approaches or individual investments should not be construed as advice or endorsement. Any views expressed in this publication were prepared based upon the information available at the time and are subject to change. All information is subject to possible correction. In no event shall Mawer Investment Management Ltd. be liable for any damages arising out of, or in any way connected with, the use or inability to use this publication appropriately.