
Compound Interest and The Rule of 72

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For Financial Advisors and their Clients

Did you know, that if you start saving a small amount, early in life, it can lead to a larger savings pot than if you were to save a large amount much later in life? Sounds too good to be true? That's exactly why compound interest is known as the eighth wonder of the world.

With this in mind, would you rather have R1,000 per day for 30 days or R1 that doubled in value every day for 30 days? Those in the know would choose the doubling of R1. Why? Because, at the end of 30 days, they would have accumulated over R500 million - versus the R30,000 they would have if they had opted for R1,000 per day.

What is the difference between compound interest and simple interest?

In short, with simple interest, you only earn interest on the initial amount you invested, whereas compound interest is "interest earned on interest"; it is calculated on the principal amount as well as the previous period's interest.

Car loans and consumer loans use simple interest when estimating the interest payments. Even cash deposits use simple interest to calculate the return from the investment. Borrowers benefit more from simple interest as there is no power of compounding. In other words, there is no interest on interest.

Compound interest has the potential to earn more returns than simple interest. An investment grows exponentially with compound interest because it is based on the principal power of compounding. Compound interest is most commonly used in investments where there is a reinvestment of profits.

How does compound interest work?

The principle is simple: A rand invested at a 10% annual return will be worth R1.10 in a year. Invest that R1.10 and get 10% again, and you'll end up with R1.21 two years from the day of your original investment. The first year earned you only R0.10, but the second year generated R0.11. And that is the basic principle of compound interest – gains on gains. Increase the time and the amount invested and the gains become more and more pronounced.

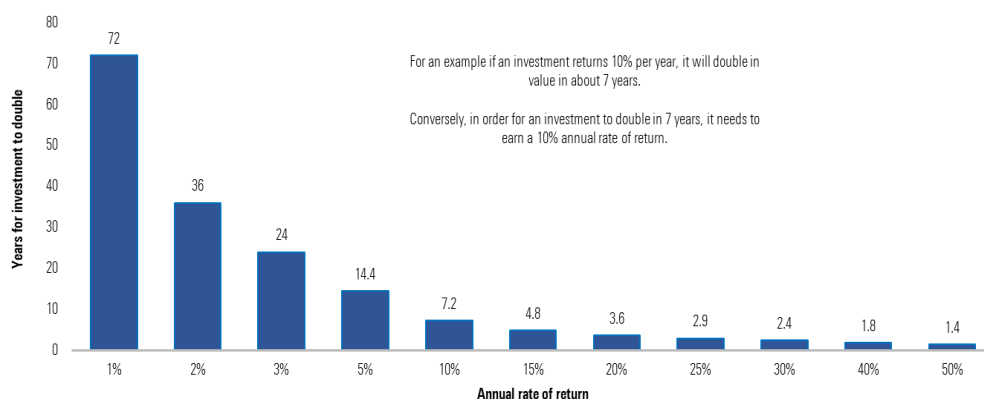
In the words of Albert Einstein – "Compound interest is the eighth wonder of the world. He who understands it, earns it. He who doesn't, pays it."

The Rule of 72

A great tool to have in your toolbox when you look at your investments earning compound interest is the “Rule of 72”. The Rule of 72 is a mathematical principle that estimates the time it will take for an investment to double in value and is a basic formula anyone can use.

Simply take the number 72 and divide it by the interest earned on your investments each year to get the number of years it will take for your investments to grow by 100% or double.

Below is a graphical illustration of the rule. For example, if an investment returns 10% per year it will double in value in about seven years. Conversely, for an investment to double in seven years it needs to earn a 10% annual rate of return.



Source: Morningstar, data as at May 2024. For illustrative purposes only.

Let’s say you invested R10,000 at a 9% annual rate of return, which is the annualized return of the Morningstar Balanced Portfolio for the last seven years. To calculate the doubling time using the Rule of 72, you would input the numbers into the formula as follows:

$$72 \div 9 = 8 \text{ years}$$

This means that your initial R10,000 investment will be worth R20,000 in about 7,9 years, assuming your earnings are compounding. All of this is also assuming you’re not making additional contributions to your investment over time, which makes the fact that your money is doubled in less than a decade even more impressive.

The earlier you start, the more likely you are to achieve your goal

Let’s take a simple example of two investors both of whom aspire to become millionaires.

Investor A

Investor A is sensible and manages to save his rands and, from age 24 to 30, manages to invest R2 000 per year in a portfolio recommended by his financial adviser.

His investment grows each year by 12% (net), and although he stopped saving after he reached age 30, he left the money invested where it continued to earn 12% each year until he retired at age 65.

Investor B

Investor B on the other hand carried on spending his money for another six years before he started saving R2 000 per year at age 30, also earning 12% (net) per year through the same adviser. However, Investor B was able to continue investing R2 000 per year until he retired at the same time as Investor A, i.e. at the age of 65.

So, did either of them achieve their goal of making a million? In the end, both of them just about made it.

The difference is that because sensible Investor A started early, he only had to invest R12,000 (i.e. R2,000 for six years), while Investor B had to invest R72,000 (R2,000 for 36 years) (or six times the amount that Investor A invested) to get to the same point. Therefore, that six year delay effectively cost Investor B R60,000.

A lesson worth remembering

Whether our financial goal is to become a millionaire, retire comfortably or become financially independent the great thing about compound interest is that it helps us to achieve these goals.

Investing sooner rather than later can be as important as the actual amount invested over a lifetime. Therefore, to truly benefit from the magic of compounding, it's important to start investing – or repaying debt because the same principle applies in reverse – at the earliest possible date. Always remember, due to the effect of compound interest or compounded returns, gains bring about gains, which bring about even larger gains. This is the true power of compound interest. **K**

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