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Newsletter

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## Don't underestimate the power of compound interest.

One of the best known and frequently used quotes on the power of compound interest is attributed to the world-renowned physicist and scientist Albert Einstein. He is believed to have said: "Compound interest is the eighth wonder of the world. He who understands it, earns it. He who doesn't, pays it."

Regardless of whether Einstein actually uttered these exact words, the essence of this statement is immensely powerful and cannot be disputed.

The world's most successful investor and wealth creator, Warren Buffett, seems to agree, as more often than not he has been quoted as follows: "My wealth has come from a combination of living in America, some lucky genes, and compound interest."

Contrary to simple interest, which is calculated on only the initial principal of a deposit or loan, in other words, no interest is earned on the interest that has been accumulated previously, compound interest is calculated not only on the initial principal and but also on the accumulated interest of previous periods of a deposit or loan.

In simple terms, if you invest a sum of money, you will receive interest on the amount invested. After the initial period, you will receive interest on the interest that you have already earned in the past as well.

For example, if you invest R1 000 at 10% compound interest per annum, after the first year you would have earned  $10\% \times R1\ 000 = R100$  worth of interest. So your total investment is now worth R1 100.

After the second year, you would have earned  $R1\ 100 \times 10\% = R110$  worth of interest and your investment would be worth R1 210. In the second period, you therefore would have earned interest of 10% on the interest of R100 which you earned in the first period.

The power of compound interest is usually more significant and noticeable over longer periods of time.

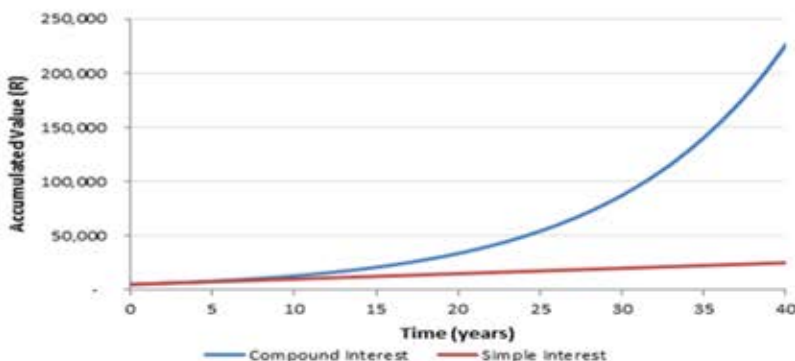
For example, assuming you can earn interest of 10% per annum on an investment of R5 000, after five years your investment would be worth R8 053 under the compound interest scenario. By contrast, under the simple interest scenario, your investment would be worth only R7 500.

Likewise, after 40 years, your investment would be worth R226 296 under the compound interest scenario as opposed to only R25 000 under the simple interest scenario. Obviously, had you decided to put your money under the mattress, it would have remained R5 000.

The graph below shows the growth of a R5 000 investment over a period of 40 years at 10% per annum under the compound and simple interest scenarios.



Comparison of Simple and Compound Interest



There are many practical applications of compound interest such as loan repayments, but perhaps none demonstrates the power of compound interest more clearly than saving for retirement.

For example, if an individual contributes R5 000 at the beginning of every year for a period of 40 years, he/she would have invested R200 000 over this period. Again assuming 10% per annum compound interest, this investment would amount to approximately R2.4m after 40 years.

Interestingly, the contributions made during the initial ten years account for almost 65% of the total investment amount at the end. This clearly demonstrates the power of compound interest over long periods of time and shows why it's important to start saving as early as possible.

### Double-edged sword

Having said this, be warned that compound interest can be a double-edged sword in some circumstances.

It's particularly pertinent when you have to make repayments on some sort of loan, such as repaying the monthly mortgage instalment on a house, the repayments on financing your motor vehicle, credit card debt or paying off student loans.

Say, for example, you have taken out a loan for R5 000: after five years, the loan repayable would be R8 053 and after 40 years a whopping R226 296! The point is that you spend a lot of your future income for the benefit of owning something now, when you buy it through a loan, due to compound interest.

In these cases, you are the one paying the interest on the loan as well as interest on the interest that has accrued. This situation is particularly severe for consumers in times of high interest rates.

So the moral of the story is to use compound interest in your favour when investing, but minimise your debt as far as possible by preventing it from working against you.

Source - [www.fin24.com](http://www.fin24.com) - Mathias Sithole is head of public sector and corporate consulting at Liberty Corporate.

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