The Stan Clark Financial Team's

PERSPECTIVES

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Asset allocation

Compound interest – the eighth wonder of the world

By Elaine Loo - Associate Investment Advisor

The man who invented the game of chess showed it to the ruler of his country. The ruler was so impressed he allowed the inventor to name his reward.

The inventor, being very wise, asked only for this: one grain of rice on the first square of the chessboard, two grains on the second square, four grains on the third square, and so on. He was basically doubling the number of grains per square until the last square of the chessboard.

In this article, I'd like to talk about compound interest – the eighth wonder of the world.

Well, the ruler in our story scoffed at the seeming meagreness of the inventor's request. The ruler quickly accepted the request. He ordered his treasurer to hand over the rice.

The treasurer took a whole week to calculate the amount of rice that was needed. He finally determined it was impossible to make the payment! The furious ruler was not to be outsmarted. He told the inventor that in order to receive his prize, he would have to single-handedly cart the rice back to his home.

Just how much rice were they talking about? A lot, as you would imagine: 18,446,744,073,709,600,000 grains of rice. That's over 18 million trillion grains! Based on the *Food and Agriculture Organization of the United Nations 2013 Statistical Yearbook*, this amount of rice would take more than 600 years to grow.

What does this have to do with compound interest? Well, our story was an extreme example of the exponential effects of compound interest. It shows that over time, a seemingly small difference in returns can make a big difference in the end. According to Albert Einstein, "Compound interest is the eighth wonder of the world."

Compound Growth From $100,000

Time Period	6% Return	8% Return	10% Return	12% Return
10 Years	$ 179,085	$ 215,892	$ 259,374	$ 310,585
20 Years	$ 320,714	$ 466,096	$ 672,750	$ 964,629
30 Years	$ 574,349	$1,006,266	$1,744,940	$2,995,992

Source: Stan Clark Financial Team

The effects of compounding don't really make much difference over short periods of time. For example, the difference of investing $100,000 at six percent versus eight percent over three years is less than $7,000. But most of us are long-term investors. What if we look at the same example over 10 years? Then the difference is more than $36,000. For 20 years, it's more than $145,000. Just the difference of $145,000 is greater than the original investment of $100,000! As you can see in the table, the longer the time period, the greater the effect. Plus, a bigger differential in returns will produce an even *more* significant difference in the final results.

What does this mean for you? For one thing, it's important to keep costs low. That's one of the reasons we like to invest directly in individual stocks, rather than in higher-cost mutual funds. Just as the effects of compounding can really increase your results, the costs of a mutual fund management expense ratio can really hurt your long-term results. This also points out the true, long-term benefit of owning stocks. Over the past 100 years, the average returns from stocks are significantly higher than those of bonds. The compounding effect over time can be a great reward for the pain of enduring the high, year-to-year volatility of the stock market.

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To learn more about CIBC Wood Gundy, the Stan Clark Financial Team and the many ways we can help manage your wealth, please contact us by phone or by email as listed below.

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