## Why Average Rate of Return Can Be Misleading

When most people think about their investment returns, generally those returns are listed as the Average Rate of Return (ROR). The Average ROR is a very misleading number. It can distort the actual returns one sees on one's statements and it can hide losses that the investor will experience. Instead, the Compound Annual Growth Rate (CAGR) is a much better measuring metric, which this article will explain in more detail.

## What is The Difference Between The Average ROR and CAGAR?

The Average ROR is the gain or loss on an investment over a specified time expressed as a percentage. The CAGR is the mean annual growth rate of an investment over a specified time longer than one year. That said, the best way to explain the difference is to use an example.

If you start with \$100,000 and in year one you generate a $25 \%$ return, you have $\$ 125,000$. If you lose $25 \%$ in year two, what do you have? $\$ 100,000$ ? Nope!

|  | Start of Year <br> Year | $\underline{B a l a n c e}$ | $\underline{\text { ROR }}$ | $\underline{\text { Growth }}$ |
| :---: | :---: | :---: | :---: | :---: |

The Average ROR is ZERO ( $25 \%-25 \%=0 \%$ ). However, in real life, you only realize the CAGR, NOT the Average ROR many brokers and fund managers claim in their publications. The CAGR for each of the two years is $-3.175 \%$ (NOT ZERO). Look at the next set of numbers where the average ROR over 10 years is the same $7 \%$ for both investments, but the total value again is different.

| Year | Static ROR | Year-End Balance | Random ROR | Year-End Balance |
| :---: | :---: | :---: | :---: | :---: |
| 1 = Deposit \$500,000 | 7.00\% | \$535,000 | 0\% | \$500,000 |
| 2 | 7.00\% | \$572,450 | 7\% | \$535,000 |
| 3 | 7.00\% | \$612,522 | 0\% | \$535,000 |
| 4 | 7.00\% | \$655,398 | 3\% | \$551,050 |
| 5 | 7.00\% | \$701,276 | 14\% | \$628,197 |
| 6 | 7.00\% | \$750,365 | 12\% | \$703,581 |
| 7 | 7.00\% | \$802,891 | 0\% | \$703,581 |
| 8 | 7.00\% | \$859,093 | 6\% | \$745,795 |
| 9 | 7.00\% | \$919,230 | 18\% | \$880,039 |
| 10 | 7.00\% | \$983,576 | 10\% | \$968,043 |
| Average ROR | 7.00\% |  | 7.00\% |  |

In this example you see that a stead "static ROR of $7 \%$ yielded a $\$ 983,576$ account value. In this example, the Average ROR is obviously 7\% as well. Compare this to the Random ROR. Here, the returns are not static changing the returns from year to year. The average of these random returns is still $7 \%$. That said, your statement balance would show only $\$ 968,043$, a difference of $\$ 15,533$

The point with this simple and very important example is to make sure you now know the difference between these two measures of performance and to be certain that you are always looking at the CAGR when evaluating different investment options and NOT the Average ROR. Only when you use CAGR can you truly compare different investments and make an informed decision as to which one has the best returns.

