

## The Power of Compounding

One of the best parts of what I do is meeting with people who have been investing for a number of years to look back at how far they have come from where they started.

The other day I met with a young man to discuss a 401k balance that he had left in a former employer's plan that I handle. I remember meeting with him at a sandwich shop 10 years ago to talk about signing up for the plan and starting to put money away for retirement. He was only 20 years old, working as a landscaper and really not thinking too far into the future. I explained to him the benefits of contributing and the employer matching contributions that he would receive if he did. We talked about how relatively modest ongoing contributions could grow to a significant amount over time. Ultimately he decided to participate and put in a few percent of each paycheck, which was then matched by his employer.

When I met with him the other day he admitted that he hadn't looked at a statement for the account in literally years. He only contributed for a few years before moving on to a new job and really didn't think he had much in there.

You can imagine his surprise when I showed him the statement showing his balance of \$37,000.

That is the power of time and compounding returns at work.

Compounding is a simple, yet very powerful concept. In a nutshell, it means that you earn money on your earnings - which allows your total gains to compound over time.

Let's take a look at a simple example. Let's say you invest \$1000 in a CD earning 5% for 10 years, paid annually (I know - not going to happen with today's interest rates but let's just pretend). Here's the math question - how much will that CD be worth at the end of the 10 years?

Did you say \$1500? Oops - that's not right. The CD will actually be worth \$1629.

So where did the extra \$129 come from? It wasn't a bonus from the bank - it was compounding. In the first year the \$1000 investment earned 5%, or \$50, so ended the year worth \$1050. In second year the CD still earned 5% but this time it was on the \$1050 value so it earned \$52.50 and ended the year worth \$1102.50. Year three would result in earnings of \$55.13 and an ending value of \$1157.63. This pattern continues until the CD matures.

Hopefully you can see how compounding can be a powerful ally over time. It can also be just as powerful of an adversary. Let's talk about inflation.

I officially realized that I was old when I started telling my kids stories about how the grocery store I worked at used to sell 1 cent tootsie rolls and milk was 1 dollar a gallon.

We all know that prices generally rise over time and that inflation is to blame but if you factor in compounding inflation can become even more of an issue. For example, if an item costs 100 dollars today and the price inflates by 3% annually it would cost \$181, or nearly twice as much, 20 years down the road.

Fancy financial calculators like mine allow me to do this calculation without having to manually calculate year by year values but there is a neat short cut that anyone can use when looking at compounding values. It is called the Rule of 72. The Rule of 72 says that you can tell how many time periods it will take for a value to double by dividing the rate per time period into 72.

For example, if an investment earns 6% per year it will take 12 years (72 divided by 6) for that investment to double in value. Similarly, if an investment earns 12% per year it will take 6 years (72 divided by 12) for it to double in value.

The same Rule of 72 can be applied to inflation. If inflation is 3% per year it will take 24 years (72 divided by 3) for an item's price to double.

The bottom line is that compounding can make a significant difference in how values change over time and appropriate compounded calculations should be used whenever making a significant financial decision.

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