**Real Life Example of Opportunity Cost**

Let’s look at an example of how an investor faces opportunity costs when investing in an [Exchange Traded Fund (ETF)](https://learn.stashinvest.com/stash-investments-etfs) compared to a regular savings account with a 1% annual yield. For this example, we will examine a one-year investment horizon starting on June 30, 2016, so we can see how the decision would have turned out by the end of June 30th of 2017.

Suppose you are an investor with cash to invest on June 30th of 2016. Let’s also assume that you have narrowed down your choices to just two possible investments. One possibility is the [Moderate Mix themed ETF](https://learn.stashinvest.com/investment-moderate-mix) with ticker symbol AOM. The other is a regular savings account with a guaranteed rate of return of 1%.

On June 30, 2017, with one year’s worth of historical performance, it would then be possible to see the opportunity costs associated with the investment decision. Looking at actual performance data of these two investments from June 30th 2016 to June 30th of 2017, the Moderate Mix themed ETF (AOM) had a total return (including any dividends) of 7.7% while the savings account had a guaranteed total return of 1%. What is the opportunity cost of one investment over the other? The answer depends on what decision you made in June 2016.

Looking to the formula for opportunity costs, it is calculated as:

What you sacrifice / What you gain = opportunity costs

If you had invested in the regular savings account, by definition you would have sacrificed the Moderate Mix themed ETF. In that case your opportunity cost of investing in the savings account and foregoing the Moderate Mix investment is:

Opportunity cost of investing in the savings account: 7.7% / 1% = 7.7% for that period.

Remember that opportunity cost is a ratio of what you sacrificed versus what you gained. So what this calculation says is that for any 1% of return you gained from investing in the savings account, you sacrificed 7.7% of return in the Moderate Mix investment for that year. So the opportunity cost of investing in the savings account versus the Moderate Mix investment in this period is 7.7%.

What if you had done the opposite and invested in ETF instead, what is your opportunity cost in this case? To find out, we simply need to reverse our earlier calculation.

Opportunity cost of investing in the ETF: 1% / 7.7% = 0.13% for that period.

This calculation tells us that for every 1% of return you gained in that period from investing in the [Moderate Mix themed ETF](https://learn.stashinvest.com/investment-moderate-mix-2), you sacrificed 0.13% of return from the savings account. Clearly the opportunity cost of sacrificing the Moderate Mix themed ETF in this example is higher than the opportunity cost of sacrificing the savings account (ie, the opportunity cost of the ETF is less than the opportunity cost of the savings account). Looking back with perfect hindsight you would have wanted to be investing in the Moderate mix themed ETF.

If the calculation had returned a ratio of 1%, then an investor would be indifferent between the two investments. A ratio of 1% would mean that for every 1% per year you gained from one investment, you sacrificed the same amount by not investing in the other. The result is that these two figures net each other off, leaving you with no difference in return from investing in one versus the other.

You might be inclined to think that the opportunity cost of investing in moderate mix investment over a savings account is simply the difference in the total return over the one year period between the these two investments. In this case Moderate Mix returned 6.7% more than a savings account. But this approach is not entirely accurate. The reason is because we are trying to compare the value of one decision versus another. In other words, how much better or worse off are we compared to the next best alternative. You were invested in one ETF for the year, so to accurately measure the opportunity cost of not being invested in the savings account, you need to look at performance from the perspective of “for every 1% or $1 earned from making one decision, how much would you have earned from making the other.” It is the ratio of relative performance that matters, not the absolute difference.

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