

Perception vs Reality – Rates of Return

What is the annual average rate of return for the market? 10.00%? 12.50%? 15.00%? This is one of those "facts" that investors hear from friends, the media and the investment industry, and it is usually wrong.

Would you believe it is less than 6% per year? Sorry to break the bad news, but the stock market's historical data confirms it.

You are probably thinking: "*This can't be true! Recent history has been much higher than 6%! The past 5 years have been great.*" Unfortunately, the past 5 years have been more of an anomaly than a trend.

The purpose of this report is to give investors an understanding of historical returns and set proper expectations. Many money managers have consistent returns as their objective. Knowing the history and volatility of returns, this is a difficult objective, but one that serves investors well.

Math Warning! *I love this next part, but it is actually kind of boring.*

Here's how average annual rates of return happen: If one year has a return of 5% and the next year has a return of 10%, the average annual rate of return between the 2 years is 7.50%. ($10 + 5 = 15$; 15 divided by the 2 years is 7.50) When looking at data, the more information used, the more accurate the results. So if we were to look at just 2 years, or 5 years, or even 20 years, it isn't enough data. Since market cycles can last decades, data that stretches over many decades gives a clearer, more accurate picture. The data set we used is from 1871 through 2014, 143 years.

Whether investors realize it or not, they are investing in some way or another their entire lives. They may be in the stock market, bond market, banks or any number of a myriad of other choices. Since few investors invest for only 1 year at a time, looking at how the market performed over a 5 year period is appropriate. A 5 year period is long enough to give information on the cycles and trends of the market.

It is important to understand that when we are talking about the average annual rate of return (RoR) over 5 years, we are looking at the rates of returns for those years strung together. In other words, how many times was the market able to string together 5 years that had an average annual RoR of 10% or 7% or 12.50%?

If the average annual RoR was 10% for 5 years, that does not necessarily mean that each year in the 5 year period was up 10% each year. It could have looked like this:

Year 1	8.00%
Year 2	2.00%
Year 3	17.00%
Year 4	8.00%
Year 5	15.00%

The average of these years is 10.00%. But if you start measuring the 5 years at year 2 and add another year in, it might look like this:

Year 2	2.00%
Year 3	17.00%
Year 4	8.00%
Year 5	15.00%
Year 6	-5.00%

The average annual of these 5 years drops to 7.40%. Comparing this set of 5 years to the previous set shows what is referred to as a "Rolling Period" In other words, what happens as time rolls forward. This is how investors need to view markets, in terms of rolling performance, not static. Investopedia explains that Rolling Returns is "useful for examining the behavior of returns similar to those actually experienced by investors."

Many times, when analyzing annual RoR, calendar year returns are used. In a 10 year period, 10 data points are used. But investors do not only invest on January 1st of each year. They invest throughout the year. So in our analysis, we looked at monthly data. So in a 10 year period, we had 120 points of data instead of only 10, increasing the accuracy of our results by a factor of 12. Since we used monthly data for a 143 year time period, we used 1,716 data points.

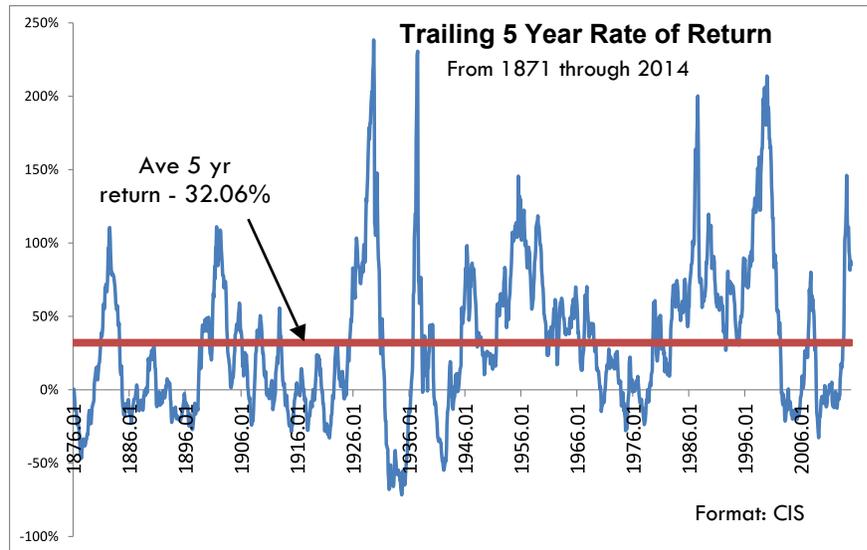
So when looking at 5 year periods, we looked at November 1889 to November 1894, April 1993 to April 1998, Feb 2001 to Feb 2006, and everything in between. It showed that 5 year returns were volatile. The highest 5 year return was over 235% and the worst was a loss of over 70.00%.



The chart to the right shows our study's results. Remember, these are 5 year returns, not annual returns. So when you see any point on the chart, that is what the market did for the 5 years, up to that point.

The chart shows there were 4 huge spikes up, over 200%. They were almost immediately followed by 5 year returns that were much lower, many times going negative.

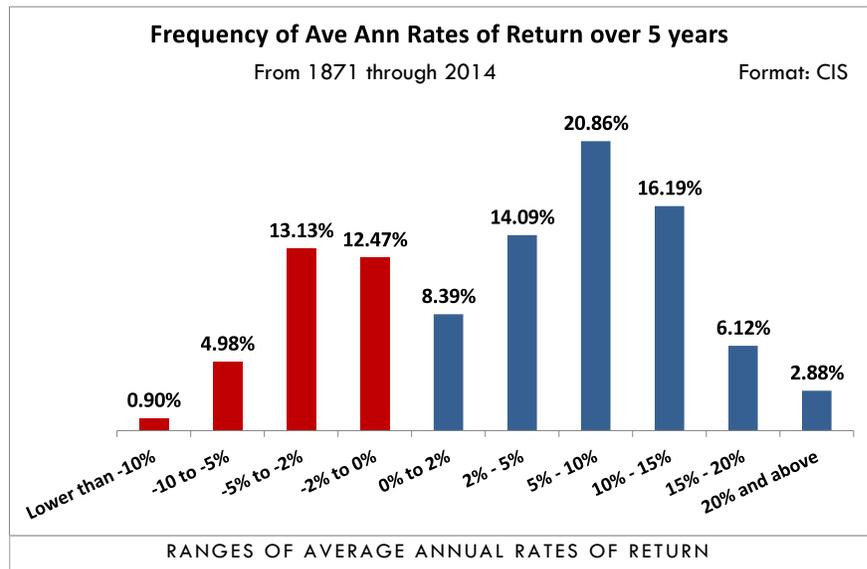
The red line shows the average 5 year RoR. It is only 32.06%, which translates to an annualized RoR of just 5.71%. (5.71% is the compounded average annual rate of return. Dividing 32.06% by 5 will not equal 5.71% If you have any questions on compound rate of return please contact us.)



This is the historical annualized RoR of the market: 5.71%. Not exactly the double digit returns of recent years.

The chart shows that the current trend of 5 year returns has been rising, and may have peaked. If history is any guide, the next several years could see lower 5 year returns. How do we know this? First, the cycle tells us, but then there is this:

The chart to the right shows the frequency of the Average Annual Rates of Return over 5 years since 1871. In other words, how often was the market able to string together a certain range of annual returns over a 5 year period. (Remember: When looking at 5 year periods, we looked at November 1889 to November 1894, April 1993 to April 1998, Feb 2001 to Feb 2006, and everything in between.)



It is important to remember that these are annual returns that are strung together over 5 years. In any given year, the market can have a RoR of 5%, 10%, 20%, but this chart is NOT measuring single years. It is measuring the average annual RoR over 5 years. So it is showing how consistently the market has been able to give certain ranges of returns.

The numbers along the bottom are the ranges of returns. The numbers at the tops of the columns are the percentage of time the market was able to produce that range of returns. (the frequency of the RoR) So if you look at the 2.00% to 5.00% range along the bottom and follow the column up, you see the number 14.09%. That means that the market had an average annual RoR of between 2.00% and 5.00% 14.09% of the time over a 5 year period. Some key points from the chart:

- 20.86% of the time the market returned between 5.00% and 10.00% - this was the return that occurred most often.
- 16.19% of the time the market returned between 10.00% and 15.00%
- 9.00% of the time the market returned over 15% annually over 5 years.
- 31.48% of the time, the market had a negative annual ROR, over three time the percentage of time it returned over 15%
- 43.34% of the time the Average annual return over 5 years was between 0.00% and 10.00%



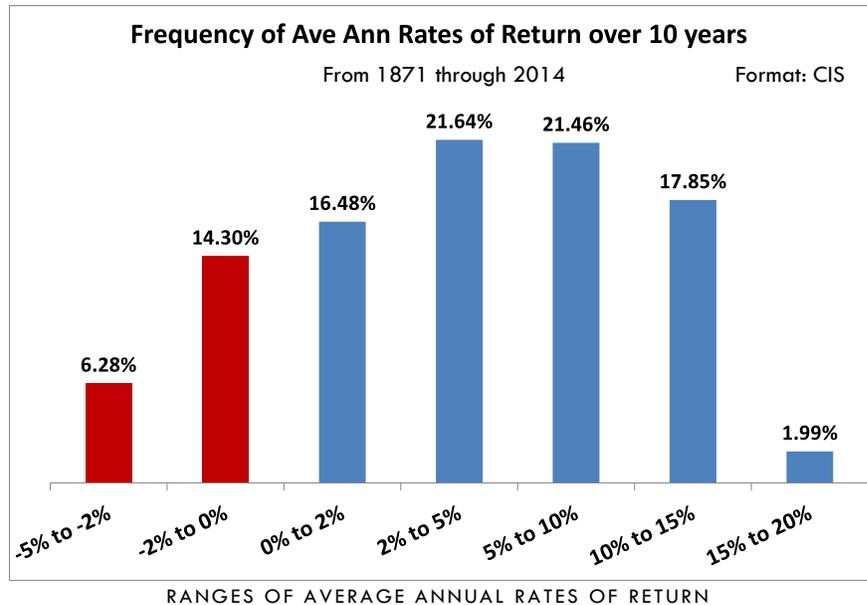
Somebody that chooses an Index fund over active money management exposes themselves to these risks. Not something the Index fund companies talk about.

Looking out ten years doesn't improve the picture. (Chart to the right)

When looking at a 10 year time frame, it becomes harder to string together a long streak of winning years.

Again, the ranges of returns are along the bottom of the chart and the frequency of those returns are at the top of each column. Here's some key points from the 10 year chart:

- Annual Returns over 15% drop to only 1.99% of the time. It is much harder to put together that long a winning streak.
- Returns between 10.00% and 15.00% happened only 17.85% of the time.
- Average Annual Returns between 0.00% and 10.00% happened 59.58% of the time.
- Negative returns over 10 years happened only 20.58% of the time.



The two ranges that happened the most often were the 2.00% to 5.00% and the 5.00% to 10.00% ranges. This makes sense since the average annual return was 5.71%. On the plus side, it was harder to lose money over 10 years. The market was down a little over 20% of the time over a 10 year period.

Why did we choose to focus on a 5 year term? It has been 5 years since the market bottomed in 2009. The resulting rally has been substantial. But is it the norm? Was the rally a new bull market, or a bear market rally? We will get into these questions in later reports.

However, investors should be long term oriented. They should be investing with that in mind. 1 year returns, even 5 year returns may be irrelevant to the long term performance of a portfolio. As the chart above shows, the current period is well above the historic average RoR. So what does this mean for an investor?

Investors that choose a passive approach, especially through index funds could be very badly disappointed by their long term performance. History and cycles tend to repeat themselves. So if the market has gone through a period of extraordinary gains, an index investor should expect to see a prolonged period of poor returns.

This is why we believe investors need to employ an active management strategy for their portfolios. The purpose of Cornerstone's active risk management is to smooth out the volatility. We employ a tactical strategy to be able to participate in the upside but give downside protection. The long term objective is to outperform over the full cycle, both the up cycle and the down cycle together.

Methodology Used: All data is from Shiller. <http://www.econ.yale.edu/~shiller/data.htm> Instead of using only annual data, we used monthly data to increase the accuracy by a factor of 12. The data dates back to 1871.

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