

Beware of rate distortions in retirement calculations

If you are serious at all about saving for retirement or determining how long your money will last in retirement, you've likely used an online calculator to estimate how much money is required to meet your goals.

This is a worthwhile exercise, but beware of a flaw that can distort the reality of these projections. Any investment projection requires that you use an assumed investment return.

Projecting expected return for a given mix of investments based on past performance is commonplace. But even if you actually achieve that expected return over a long period of time, it is likely that your actual outcome will be different than the outcome presented by the calculator. This is because most retirement planning calculators compound the same average annual return repeatedly to project investment growth. But clearly, markets post returns that are anything but consistent.

REAL LIFE INVESTOR EXPERIENCE

Consider this example using investment returns of a hypothetical balanced portfolio that includes 60 percent global stocks and 40 percent bonds. Over the past 10 calendar years, this portfolio has earned a 5.83 percent average annual return. This represents annual percentage returns from 2001 through 2010 as follows: -3.13, -6.37, 21.74, 11.28, 5.79, 14.07, 5.73, -20.59, 18.18 and 11.66.

Imagine that you want to determine how much \$100,000 would grow over 10 years and you used this

5.83 percent return as your proxy for future performance, increasing the year-end balance by 5.83 percent each year. At the end of the decade your balance would grow to \$176,233 assuming no contributions or withdrawals.

However, if you instead applied the annual returns as listed above, even though they amount to the same average return, your balance would be \$164,280, nearly \$12,000 less. Using the fluctuating market returns led to a 64 percent start-to-finish return in this case. That's meaningfully different than the 76 percent cumulative return achieved by simply applying the average annual return (5.83) each year. This difference grows when you consider bigger balances, or potentially larger returns, over longer periods.

MARKETS ARE RARELY AVERAGE

It's important to acknowledge that averages are the result of a mathematical collection of experiences that rarely happen in an average way. Consider if you adjust the previous balanced portfolio example to include results for the past 20 years (1991-2010). In that time, the hypothetical mix averaged 9.12 percent annual returns. However, not once did it post an annual return within even plus or minus two percentage points of the long-term average – the annual return was never within the range from 7.12 percent to 11.12 percent.

SEQUENCE MATTERS

Once withdrawals begin to supplement retirement income, if there are negative returns in the first few years but otherwise the expected long-term average is achieved, the likelihood of running out of money increases significantly.

This is because the money that was withdrawn no longer has the ability to recover from the loss.

Return to the example above where the first two years resulted in returns of -3.13 and -6.37. Consider that you were removing \$4,000 per year from your initial \$100,000.

After 10 years, starting with the two negative returns, your balance would be \$111,529. That is over \$12,000 less than a calculator might conclude by using the 5.83 average annual return every year. Alternatively, investment performance in your favor early in retirement may allow you to increase your withdrawals moderately, even if you experience negative markets late in retirement.

The variety of potential outcomes makes it helpful to stress test your portfolio's ability to provide necessary income regardless of variance in returns.

With this information, you can then make better decisions about how to adjust your savings, spending or investment strategy to maintain a margin of safety around your goals. Then, you can have more peace of mind even as market returns rise and fall with no particular closeness to the long-term averages.

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