

INVESTMENT INSIGHTS:

BUILD CONFIDENCE YOUR RETIREMENT FUNDS WILL LAST



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Are you concerned that you will outlive your assets in retirement? In a Wells Fargo / Gallup Poll conducted last August, 46% indicated they were 'very' or 'somewhat' worried about outliving their assets. I think there are several good reasons behind this fear. First, there is always some risk (uncertainty) about what future market returns will look like. Adding to this, we are currently in a low return environment. In addition, to model your retirement funds over time requires tools that most investors don't fully understand or have access to. In this paper, I will outline the core principles behind estimating 'confidence' in your retirement portfolio. I will provide illustrative examples to help in the process. While the examples are helpful for education, it is important to emphasize that each family or person's financial situation may dictate a different solution. We can discuss 'rules of thumb' but, I strongly encourage everyone to make a plan that considers their unique situation. If you don't have the interest, time or tools to do your own plan, seek out guidance to assist you.

What Are The Key Elements To The Plan?

To create a plan for your retirement investments we need several critical pieces of information. Let's break it down:

- 1) How much will you spend in retirement?
- 2) How much return will your investment generate?
- 3) How much of your retirement can you afford to take out each year and not risk outliving your assets?

In this paper, I will walk through each of these three elements and in the process discuss how we estimate 'confidence' that your plan will work.

How Much Will You Spend In Retirement?

In my experience, it can be hard for people to make such an estimate. I have a few suggestions that may help the process along.

A 'rule of thumb' is an estimate we can use that has some basis in practice. For example, estimates suggest that a typical retiree may spend 75% as much in retirement as they do in pre-retirement. Now, of course an estimate based on your specific situation is better, but as a starting point the 75% rule of thumb may be a reasonable first step.

To improve on the estimate, your advisor can help by estimating your expenses based on goals that you outline. For example, you may want to

travel in retirement and your plan could include a budget for that. Additionally, you may desire to gift to children or grand children. Perhaps you have a favorite charity in mind for contributions. In any case, we can model each of these in detail and provide more accuracy to the plan.

I also advocate Dynamic Planning. This just means that we will re-evaluate the assumptions each year and update the plan. Let's say we take a first estimate of your spending and the next year we find we are high or low. We simply adjust the plan and improve accuracy as we go.

How Much Return Will Your Investment Generate In Retirement?

To forecast your portfolio in retirement, we have to make assumptions about: investment allocation (mix of stocks, bonds, cash etc.); the return for each of these investment classes and how much uncertainty (or risk) each has and the percentage of each of these assets you will have in your portfolio.

Let's stop for a moment and talk about uncertainty. Let's suppose you have \$1,000,000 in a retirement portfolio and you need \$50,000 in retirement spending each year. Furthermore, let's assume you could get 5% real return on your portfolio and that the return didn't vary from year to year (it's certain and has zero standard deviation). When we say real return, we mean the return you would get in excess of inflation. Let's also assume no taxes, etc.

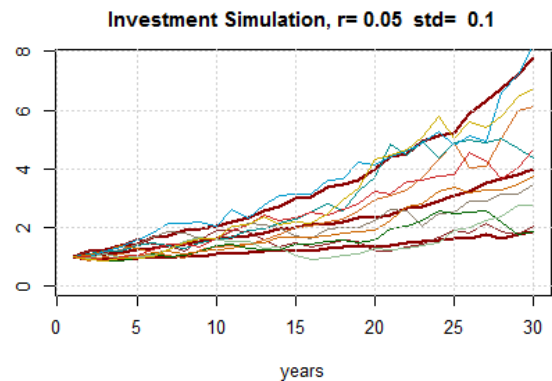
In this case, we can see that by matching our investment returns perfectly to our future liabilities (spending) that there is no risk of coming up short in retirement. We could say we have high confidence your plan will work.

Unfortunately, investing, and life in general, is more uncertain than this. Furthermore, there is no way to achieve a 5% real return that is risk free (today). So, if we start adding investments that will generate returns, they will vary over time and include other risks (interest rate risk,

market risk, default risk, etc.). Now, in this case we will need to model how the investments might vary over time and then estimate how confident we are to be able to reach some minimum goals.

What does this investment uncertainty look like over time? What if we invested \$1 today at 5% return where the annual risk of the return was 10%? To visualize the scenarios, we might simulate 1000 trials. What patterns form? From Figure 1 below, we can see a few of the scenarios plotted along with the 90%, median and 10% intervals. What this means is that 80% of the time, the likely outcome will be within the upper and lower bands. The middle band represents the median case. Half of the time we will be above or below this point. We can see that over a 30 year span, the outcome can be quite wide, 80% of the time our \$1 will be worth between \$1.7 and \$7.8

FIGURE 1: Investment Returns



Source: Brightwood Ventures, LLC

One big take-away from Figure 1 is that uncertainty in investment returns is not our friend when it comes to planning a high-confidence retirement. Adding more risk may increase the average or median outcome vs. a lower return investment, but it also increases the chance that a plan designed with 90% confidence would fail. (For this reason, most research has demonstrated that holding less than 50% risk or equity assets would produce more certain retirement outcomes).

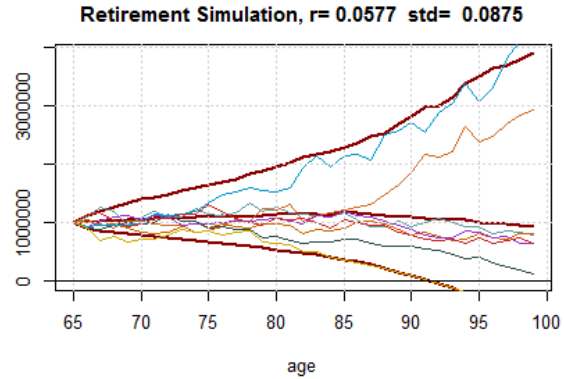
How Much of Your Retirement Can You Take Out Each Year?

How do we go about answering this question? Well, we want to simulate retirement scenarios and then set the point of withdraws to be such that the confidence of not running short is set at or above some threshold. There is a trade-off here. If we say we want a plan that will only fail 1% of the time, we are likely to set the withdrawal rate too low. In most cases your portfolio would be very large at the point of death. For this reason, a typical threshold would be set between 90 – 95% confidence level.

Let’s take a look at ways you could establish a Dynamic Withdrawal strategy. For a detailed discussion on the approaches, including an in depth review of the math involved, see Morningstar Research: “Optimal Withdrawal Strategy for Retirement Income Portfolios” by David Blanchette, CFA, Maciej Kowara, Ph.D. CFA and Peng Chen, Ph. D., CFA. September 21, 2012.

There are several strategies one can use to determine the optimal withdrawal rate. One ‘rule of thumb’ has been to assume that you set your retirement income to 4% of your portfolio the year you retire and then grow it at a rate of inflation (this rule is referred to as ‘the 4% rule’). This should only be considered an estimated starting point. Lets look at an illustration for this. Let’s assume a scenario where a single person or married couple are at age 65 and are going to retire today. Assume income has been \$50,000 (roughly the median in the US today). Assume further that the couple desires \$40,000 to meet retirement spending goals. Finally, let’s assume a retirement portfolio allocation of 40% stocks and 60% bonds. For this scenario, I selected an ETF model portfolio from Vanguard and used Morningstar Workstation to estimate returns and risk for such a portfolio. The estimated return and standard deviation based on Morningstar was 5.77% return with 8.75% standard deviation.

FIGURE 2: 4% Withdrawal Scenario



Source: Brightwood Ventures, LLC

What can we learn from this simulation? Let’s suppose we want to set our retirement plan so that it will succeed 90% of the time at ensuring that we will not outlive our assets. Let’s further assume we want our investments to last until at least age 95. We can see from the chart above that the 4% rule would fail. This plan would run out of money at in 10% of the cases at age 93.

Is there a better way than the ‘rule of thumb’ 4% rule for looking at withdrawal rates. The answer is a definitive ‘yes’. There are a number of ways to improve the confidence over a constant 4% rule. We can dynamically adjust the withdrawal amount each year to reflect updates on your situation and market conditions. We can set the withdrawal rate each year so it matches the desired confidence rate of 90 – 95%. If the historical market returns hold, what percentage withdrawal rate could we take and have 90% confidence? The answer is about 3.75%.

In addition to these improvements, I use investment portfolio estimated returns, not based on historical estimates, but rather based on expectations going forward. For example, if we assumed that the return of the market will be 1% lower than historical estimates due to slower economic growth, what withdrawal rate could

we sustain with 90% confidence? Our results show the rate would now drop to 2.8%.

What Other Factors Should Be Considered?

There are additional factors which go into this kind of analysis including tax analysis to ensure the right assets are placed in the right accounts to minimize tax impacts. In addition, if you want to leave assets to heirs and/or organization such as charities or non-profit organizations those would need to be included. With this brief introduction, I hope that I have helped to explain the basic principles of building an effective retirement plan, one that gives high confidence your assets won't run out in retirement.

What Can You Do With This Knowledge?

First, get a plan in place for yourself that is tailored to your personal circumstances. If you have a planner or advisor, they should be developing a plan with you and you should have a clear idea of the details so you can be confident in your retirement.

If you would like to do your own plan, there are some tools online that can help. Search for 'retirement calculators' and 'monte carlo retirement' for ideas.

Second, update your plan each year. You can improve the plan by updating your estimates of spending needed, savings, estimates for lifespans and market return assumptions annually.

If you would like additional information with resources or would like to get additional input on reviewing your plan or creating one for you, call us. We build personalized retirement plans and provide annual updates as part of our services.