

Lessons Learned From Withdrawal Rate Research

As financial planners we are asked almost daily: “How much can I afford to spend?” This topic has been written about extensively in the media and we have published three articles on related topics this year: The Flip-Side, The Six-Three Solution, and Understanding the Four Percent Withdrawal Rate Guideline.

History

The question of economic security is viewed very differently now than in the past. Previously, economic security may have meant stockpiling food for the winter and retirement planning may have meant having many children. However, security in one form or another is an old question. The Greeks stockpiled olive oil as a form of security. In the middle ages, feudal lords provided security for the serfs who worked their land. And, of course, family members have always taken care of each other.

In the 16th century, economic security began to take on a monetary character. Guilds and friendly societies created funds to take care of their members. In 1795, Thomas Paine proposed a system of social insurance similar to social security that he called Agrarian Justice. Paine’s system was to be funded by an inheritance tax and old age benefits began at age 50. In 1889, Chancellor Otto von Bismarck created the first national social welfare system in Germany to solve an unemployment crisis by creating an incentive for older workers to leave their jobs and make room for younger workers.

Freemasons, Benevolent and Protective Order of Elks, and Loyal Order of Moose were organizations in the U.S. that provided some financial security for their members in the 19th and early 20th centuries. The financial security element of these groups faded with the creation of the U.S. Social Security System in 1935. These early systems of financial security primarily served those who were unable to work, either because of old age or disability. The idea that people who are able to work would voluntarily choose not to work is a recent idea.

Early in this era of voluntary retirement, people experienced low inflation and retired in their 60s, and died in their 70s. The life expectancy of a newborn in the 1930s was 59. During the 19th century inflation was near zero. Out of these dynamics came the financial security wisdom we have all grown up with. We have all been programmed with the idea of putting retirement funds in fixed income securities, living off the interest and never touching the principal. This works just fine when you have low inflation and you only live for ten years.

Retirement Planning in the Twenty-first Century

Today, retirement before age 60 is common and many are living into their 90s. Maintaining financial security over 30 or 40 years is an entirely different proposition. Investing in fixed income and living off the interest is not going to work for this sort of retirement.

Planning for such a retirement is a new science. Withdrawing 4% from an investment portfolio is a commonly used guideline today. This suggests that a retiree with one million dollars in retirement savings could withdraw \$40,000 per year before-taxes and expect that income to keep pace with inflation for 30 years.

However, this is not the “spend the interest and never touch the principal” retirement plan of our parents and grandparents. This is a much more slippery plan that is not guaranteed to work.

Monte Carlo Simulation

The most common tool for evaluating such a plan today is known as a Monte Carlo Simulation. This simulation concludes that, with proper planning and a sensible investment strategy, a 4% initial withdrawal rate has an 80% to 90% probability of success. This probability of success is calculated by running thousands of simulations while randomly varying the assumptions and tabulating the success rate.

We have done a substantial amount of work with Monte Carlo Simulations, as well as significant reading about work that others have done with similar simulations, and we have learned a few lessons.

As mentioned earlier, the 4% withdrawal guideline has an 80% to 90% probability of lasting for 30 years. If your wealth must last for 40 years, you must reduce the initial withdrawal rate to 3.5% to achieve a similar probability of success. However, if your income must last only 20 years, the initial withdrawal rate can be 5.5%; over 10 years the withdrawal rate can be almost 10% and still maintain an 80% to 90% probability of success.

Many retirees would like higher withdrawal rates, especially at younger ages when they are more active. It is possible to take a higher withdrawal and maintain an 80% to 90% probability of success if you are willing to accept the risk of lower withdrawals in the future. The Six-Three Solution is a way to adjust withdrawals according to actual investment results. A 5% initial withdrawal rate can be used and achieve a similar probability of success as a 4% initial withdrawal rate if it is increased at only half the inflation rate.

Strategies for Affluent Retirees

Strategies that risk requiring a spending reduction in the future make sense for affluent retirees. Affluent retirees often have substantial discretionary spending. It is reasonable to put this discretionary spending at risk as long as the minimum acceptable standard is protected. However, retirees of more modest means must be more careful. A retiree who is just barely covering essentials cannot risk a strategy like the Six-Three Solution or count on only adjusting income by half the inflation rate. In fact, some retirees with substantial medical expenses may need to plan for higher spending as they get older.

Tactics such as becoming debt free are ways to reduce fixed expenses and provide the freedom to use more aggressive withdrawal rate strategies. Owning a single modest home with no mortgage and low operating expenses provides the freedom to spend more liberally with the knowledge that such discretionary spending can be stopped if necessary. On the other hand, owning multiple expensive homes with expensive overhead means that spending plans must be more conservative since this spending is not discretionary. Of course, homes can be sold and the other side of owning multiple residences is that these residences provide capital that retirees can fall back on in hard times.

Choosing the Right Investment Strategy

All of these analyses are based on achieving market returns, minus reasonable investment expenses. Low-cost asset-class strategies using passive investment vehicles and index funds are the most cost effective tools to reliably capture these returns. Active managers who seek to beat the market increase the risk that market returns will not be achieved. Due to their higher cost, approximately three-quarters of all active managers fail to match market returns. The probability of success calculated by Monte Carlo Simulations is reduced when active management is employed.

It is also important to choose the appropriate allocation to equities. Putting 60% to 80% of one's investments into equities maximizes the probability of success for most investors between the ages of 50 and 80. Younger investors may improve their odds a bit by investing 90% or 100% of their investments in equities, while those who only require their investments to last another ten years will improve their odds by reducing the allocation to equities to 30% to 50%.

Beyond age 50, a 100% allocation to equities does not significantly reduce the probability of success and it does increase expected future wealth; however, it is a bumpier ride.

Expected Returns

All of these conclusions are based on the capital market return data compiled by Ibbotson since 1926. In making these calculations, we reduced the historical returns by 1% percent to account for expenses and reduced equity returns by another 1% to account for the belief held by many that this return series overstates expected returns.

Professors Gene Fama and Ken French analyzed U.S. equity returns from 1951 through 2000 and concluded that, due to a number of non-recurring factors, stock market returns during this period were higher than we should expect in the future by as much as 3% to 5%. Others have also suggested that equity returns may be less in the future than they have been in the past, especially the recent past.

It is certainly possible to make a case for more conservative assumptions; however, not necessarily by as much as could be inferred from the Fama-French research. First, the compound annualized inflation-adjusted return for U.S. large cap stocks from 1951 through 2000 was 8.5%, compared to only 7.1% from 1926 through 2006. In addition,

inflation-adjusted returns averaged 6.8% during the 19th century and 6.5% during the 20th century. Since we reduced equity returns by 1% in our analysis, we are effectively using a 6.1% expected real rate for equities, which is less than in either of the last two centuries and significantly less than the 1951 through 2000 period.

Secondly, this data is based on large cap U.S. equities only. Broad diversification is expected to reduce volatility and tilts toward small cap stocks, and value stocks are expected to increase returns. This means that our overall conclusions for probability of success should be reasonable.

Contingency Planning

Whether the probabilities generated by modern Monte Carlo Simulation analysis are high or low, it is certain there is risk that the plan assumptions may not be met. It is, therefore, important to monitor the plan and to have a safety net in the event plan assumptions are not met.

Small adjustments to a reasonable plan can be made without painful disruptions to lifestyle if they are identified far enough in advance. Low overhead makes such adjustments easier to make.

Summary

Few, if any, will faithfully follow a withdrawal plan consistently through their lives. These analyses are useful to form reasonable expectations about the future and to make sensible choices. However, the reality is that financial security must be constantly evaluated and adjusted to the demands of a changing world. Any plan involves uncertainty. A plan that spans decades must recognize the enormous change we are likely to see over such a long period of time and allow for flexibility to meet whatever challenges may come.