In Part 3 of this three-part series on the economics of getting ready for retirement we will examine how to determine the amount of wealth that must be accumulated to retire comfortably, as well as choosing the optimal retirement date.[1] In Part 1 of this series we examined the benefits of saving and investing over a long period of time, and in Part 2 we examined what kinds of investments generate the necessary returns to accomplish the goal of retiring well.

We have saved the most difficult question for the end of this three-part series. In one sense the choice of a retirement date is an easy question to answer – in a free country you can retire anytime you want! However, for most of us, that question is conditioned by the desire to maintain a materially decent standard of living while doing so. What makes this question difficult is that there are several variables in play. How much income in retirement do I need in order to live well? How many more years should I work? How long will I live? How much should I be saving and investing? How much do I need in my retirement account before I retire? If I retire early, how will it affect my retirement spending? Can I leave a legacy for my children or favorite charity? All of these questions interact and need to be answered at the same time since the answer to one is the necessary pre-condition to answering another.[2] Let's get started.

The first place to start is to figure out how much income you will need to cover your living expenses. There is no single dollar amount that is correct for all scenarios. If you like working with numbers and spreadsheets you can calculate a retirement budget by specifying the goals that you will need to purchase in retirement such as utilities, food, clothing, travel, transportation, etc. Make sure to include enough for extra medical care as you age. Few of us, however, enjoy budgeting. Luckily there is an easier (but less precise) way. Since most people want to maintain the lifestyle that they currently have, it is easier for most of us to think of retirement spending as a percentage of working years spending. As a rule-of-thumb, Investopedia recommends that you plan to replace 80% of your working income with retirement income.[3] For instance, if you make $100,000 per year now, plan to have a retirement income of $80,000. If you earn $50,000 you need $40,000, and if you earn $150,000 you need $120,000 in retirement to maintain your lifestyle.[4]

Now that you have a target amount for annual income in retirement, you can calculate how much you have to have accumulated by retirement to fund

spending rate and 2) the length of time your assets will last. To simplify the math we assume no investment income in retirement (we will add in investment income later). The savings is assumed to be $1,000,000 and is spent at a certain rate consistently over time until the money is exhausted.

As we can see in Figure 1 below, if you plan to retire at 65, live 10 years and reach 75 years of age, you can spend $100,000 per year out of $1,000,000 saved. Fv (a)4 (he)4 os(s)-15.t($1,000(t)-2

Since it is literally impossible to know when each of us will die, it becomes very difficult to plan a retirement spending level that is guaranteed to be sustainable to our natural end. We will discuss several strategies that can alleviate the fear of outliving our financial resources. The first method is a do-it-yourself approach where you keep full control over your investment funds. We will also assume that the investment funds earn no rate of return to make the math simple and intuitive. Then we will work out the problem assuming you are investing your funds at some positive rate of return.

We can use the math that generated Table 1 to give us a first approximation on how much we can spend in retirement or how much we need to save before retirement to hit a certain spending goal. We will take a relatively conservative approach and assume a 30 year lifespan in retirement if we retire at 65 (if you retire earlier you can just add the number of early retirement years to 30).[8] Use the following formulas to calculate:

1) What I need to Save = (Desired Spending per Year) x (Years of Life Remaining)
2) What Can I Spend Sustainably = (Savings at Retirement) / (Years of Life Remaining)

In formula #1 we assume we know what we want to spend in retirement, and then calculate how much we need to have saved before we retire. For example, assume you want to spend $60,000 per year in retirement for 30 years. You need to have saved $60,000 x 30 years = $1,800,000. A considerable sum, but certainly not impossible given the investment strategies discussed in our previous articles. In formula #2 we assume that we know how much we have saved and then calculate how much of it we can sustainably spend per year. For example, if you have saved $1,800,000 how much can you spend every year for 30 years? $1,800,000 / 30 years = $60,000.

This is one more example of the power of compound interest.

This do-it-yourself approach leaves you in full control of your assets, but it forces you to make assumptions about the rate of return that is earned on the investment and forces you to choose the number of years until death. For many of us this only compounds the worry we feel about our financial state in retirement!

Another approach, pioneered by William Bengen, was to use historical data to search for the highest withdrawal rate that is possible from an investment portfolio and still leave a positive amount in your account after 30 years of spending. Instead of trying to guess how well your stock and bond portfolio will do over the next 30 years he researched what would have happened historically to the amount remaining in your account if you started with $1,000,000 at retirement and then withdrew a certain percentage each year. He tested several different withdrawal rates against every possible 30 year period from before the Great Depression to the 1990's. What he came up with has come to be known as the "4% Rule."

This rule states that if you calculate 4% of your initial retirement investment amount, you can safely spend that amount (plus an increase for inflation) through thick and thin for the next 30 years. For example, according to the rule, if you have $1,400,000 at retirement you can safely spend ($1,400,000 x .04, or 4%) = $56,000 per year. This is true whether you retired in 1930 before the start of the Great Depression when stocks fell a cumulative 89% in the year 2000 when the "tech bubble" burst and the Nasdaq lost 78% of its value.

in our currently low interest rate environment, it has held up well historically.[12] This rule generated a conservative spend rate of $56,000 per year while our "do-it-yourself" investor picked an $89,812 spend rate from the same size original investment amount because she assumed a 5% rate of return on her portfolio. While that 5% investment return is quite reasonable given the long-run average return of investment portfolios, depending on the draw-down, she might have retired when we are entering a significant "bear market" where stocks drop precipitously for some time. At a spend rate of $89,812 she could run out of money before the market comes back, but during most 30 year periods she would have been fine. The much more conservative 4% rule is designed to prevent the possibility of running out of funds too early, but at the cost of a much less luxurious retirement.

Lastly, we will discuss the most conservative approach to retirement planning by examining the pros and cons of purchasing pre-packaged annuities from an investment company. You can eliminate all of the guess work about rates of return and years of life by choosing a Life Annuity from a reputable company. When you buy an annuity the investment company (often a life insurance company) takes the "nest egg" you have saved for retirement and in return promises to pay a certain sum to you until you die, no matter how long you live (you can even buy an annuity that covers your spouse's life as well). If you die early they keep the balance.

This shifts the investment risk and the length of life risk to the annuity company. The length of life risk is actually the easiest for the company to handle. As we discussed earlier, an individual's lifespan is impossible to determine perfectly, but the average lifespan of a large group of people can be predicted with great accuracy. The company makes the payments to those who live unexpectedly long lives with the money not paid to those who die soon after they purchased their annuity.[13] By this method the investment company eliminates the possibility that you will outlive your money, which the previously examined methods suffer from.

With an annuity, the investment company also takes on the investment risk that is inherent in the previously discussed methods. Remember, even if you predict your lifespan in retirement perfectly you still have the problem that you might start your retirement at the beginning of a huge bear market that does not give you the anticipated long-run average rate of return. Then your previously chosen spend rate could exhaust your funds too early. Since the investment company has promised to pay you a set sum every month, they have to come up with any short fall in funds, not you. Now your only risk is choosing the right investment company and avoiding one that could go bankrupt because of poor investment decisions. Choose your annuities from conservatively run, well respected companies. The companies are rated on their financial strength, so ask your annuity provider for an independent rating of their quality.

I am sure you know the saying: "If something sounds too good to be true, it usually is." All of this security comes at a price. The payout from an annuity has traditionally been low compared to the potential payouts realizable from the previous methods we have analyzed. But, you do get to sleep well at night with the annuity. The other methods are not guaranteed. Your financial advisor should be able to get multiple quotes from several respected companies and then help you to compare them to what you could achieve on your own. Then you have to make the personal decision about the tradeoff between risk and return.

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[12] https://www.fool.com/investing/2020/09/27/retirement-investors-time-to-stop-using-the-4-rule/.

[13] Since many people recoil at the idea of losing all of their investment if they die early, investment companies offer policies where heirs get some percentage of the original investment amount returned to them. Of course, this is not free. See an investment advisor to discuss the details.

Conclusion

Saving and investing for retirement, and then choosing the withdrawal rate from your savings in retirement can be so daunting that many of us do nothing. Hopefully, the three articles in this series have given you the confidence to get started. It is better to start when young, but it is always a good idea to save and invest at any age. In this third installment in the series we have tried to demystify the decisions you need to make to have a comfortable and secure retirement. While the underlying principles involved are timeless and generally applicable, every individual situation is somewhat unique. There are many complex financial decisions, many with tax implications that we did not have time to address, that must be dealt with. The constant prodding to "see your investment advisor" should be seen as an invitation to develop a relationship with a good advisor who can help you work through the many decisions that you will have to make. The good news is that you should now be motivated to act and are equipped to ask the right questions and understand your advisor's recommendations.