A Portfolio Approach to Retirement Income Security[1]

Steve Vernon

With the decline of traditional pensions, many older workers and retirees urgently need to decide how to make their retirement generate income that lasts for the rest of their lives. With retirements that can last 20 to 30 years or more, this is indeed a daunting challenge for those fortunate enough to have significant savings by the time they retire.

To address this challenge, different thinking and new language is needed by individuals, retirement plan sponsors, advisers and financial institutions to transition from a mindset of **accumulating assets for retirement** to a mindset of **generating income in retirement.** One way to help with this mindset transition is to apply portfolio concepts that have been successfully used to accumulate assets to help retirees develop a portfolio of retirement income. The portfolio approach to retirement income is the subject of a recent collaboration between the Stanford Center on Longevity (SCL) and the Society of Actuaries (SOA).[2]

Classic Investment Portfolio Theory, Revisited

When workers are saving for retirement, classic investment portfolio theory advocates they allocate their savings among different types of assets (called "asset classes"), each having distinct characteristics and each expected to perform differently in up vs. down markets. This is called the "asset allocation decision." As a result of applying this theory to asset accumulation, many retirement portfolios have a mix of stocks, bonds and cash investments, and possibly real estate as well. This is the common definition of "portfolio diversification."

When workers are accumulating assets, investment risk is expressed as the possibility that the total value of their portfolio might depreciate or not keep up with inflation. The goal of asset allocation is to minimize the odds of these undesirable outcomes over the time horizon that applies to workers (typically until the age when they expect to retire).

But things get more complicated when workers retire and need to use their savings to generate income for the rest of their lives. To help retirees with these new goals, plan sponsors, financial institutions and advisers can apply portfolio thinking by diversifying retirees' sources of income among different types of retirement income generators (RIGs). Retirees would then allocate their retirement income among RIGs that not only perform differently in up vs. down markets, but also have different characteristics regarding how long their income might last, and may have other desirable features to meet different life circumstances. This is the "retirement income allocation decision."

Retirement income risk is then expressed as the possibility that the total amount of retirement income would decrease by an undesirable amount or not keep up with inflation. The goal of retirement income allocation is to minimize the odds of these undesirable outcomes for the rest of retirees' lives. The uncertainty about how long retirees will live is one of the key challenges of retirement income planning.

Typical Retirement Income Goals

Here are common goals that retirees may have for constructing their retirement income portfolio:

- Generate a lifetime retirement income they can't outlive
- Maximize the amount of retirement income expected to be paid over their lifetime
- Minimize the odds that their total retirement income will fall below an undesirable level, usually due to stock market crashes
- Provide the potential for growth income to keep up with inflation
- Maintain access to savings in case of unforeseen expenses, such as medical or long-term care

1 Portions of this essay have been previously published by the author on CBS MoneyWatch in January 2016.

2 Steve Vernon, Wade Pfau and Joe Tomlinson, "Optimizing Retirement Income Solutions in DC Retirement Plans, Phases 1 and 2," Stanford Center on Longevity project (July 2015).

- Preserve the ability to apply unused funds as a legacy
- Select solutions that are easy to use and don't need continual monitoring and adjustment, or that protect retirees against fraud and mistakes due to cognitive decline

Unfortunately, there's not one single RIG that delivers on all these goals, so retirees need to prioritize and make tradeoffs between these goals. This is a valid argument for diversifying retirement income sources, so the entire retirement income portfolio might address all the goals that are important to each retiree. Also, it's important to note that many retirees might have different priorities and circumstances than their friends and family, so each retiree will want to take their specific needs, goals and circumstances into account when determining their retirement income allocation.

Common Retirement Income Generators and Their Pros and Cons

Here are the common RIGs that have distinct characteristics regarding the above goals, each with different advantages and disadvantages:

- Drawing from Social Security
- Investing savings and using a systematic withdrawal plan (SWP) to generate a retirement paycheck
- Investing savings and living off the interest and dividend income
- Buying a guaranteed lifetime annuity from an insurance company (think of it as a personal pension)
- Working
- Generating money from real estate rental income
- Obtaining a reverse mortgage

Retirees should prioritize the goals that are most important to them, learn how each of the above RIGs might meet those goals, and then construct a portfolio of retirement income that increases the odds of successfully meeting their goals. Many retirees may want to find a qualified and unbiased retirement income planner who can help them with these decisions.

Table 1 shows how various RIGs meet common retirement income planning goals.

It's important to point out that there isn't one single RIG that has yes answers to every possible goal. Also, the yes and no answers for some RIGs tend to complement each other, which is one reason retirees should diversify their sources of retirement income to satisfy their unique goals and circumstances.

Note that Table 1 is intended to illustrate broad concepts about retirement income portfolios, and that the ratings are generalizations. There can be exceptions to the ratings, and some individuals might have reasons to disagree with some of the answers. For example:

- An SWP with a very conservative withdrawal rate might have a good chance of lasting for a retiree's life.

Table 1 Type of Retirement Income Generator

Goal	Social Security	Invest SWP	Invest for Income	Annuity	Work	Reverse Mortgage	Rental Property
Can't outlive	Yes	No	Yes	Yes	No	Yes	Yes
Maximize income	Yes	No	No	Yes	Yes	No	No
Access to savings	No	Yes	Yes	No	No	No	No
Growth potential	Yes	Yes	Yes	No	Yes	Yes	Yes
Downside protection	Yes	No	No	Yes	No	Yes	No
Potential for legacy	No	Yes	Yes	No	No	Yes	Yes
Ease of use	Yes	No	No	Yes	Yes	No	No

- An SWP invested entirely in government or corporate bonds (aka, a “bond ladder”) offers downside protection.
- There are some annuities with the potential for growth in income.
- Work doesn’t lend itself well to some of the goals in the above chart and may present the most exceptions and/or disagreements.
- Reverse mortgages have a potential for a legacy only to the extent that the value of the house exceeds the loan value.

Here are some additional comments on the rankings regarding maximizing expected retirement income:

- Social Security ranks yes to this goal because most retirees can significantly increase their expected lifetime payout by delaying the start of benefits.
- Annuities rank yes to this goal because retirees spend all of their principal over their lifetime. By contrast, with invested savings and rental property, there’s typically principal remaining unused at death.
- Work ranks yes to this goal because it gives retirees extra spending money and may enable them to delay starting Social Security or drawing down on savings. But a no answer would be reasonable as well.

Applying Portfolio Analytical Techniques to the Retirement Phase

The SOA/SCL study uses stochastic forecasts and efficient frontiers to show how retirees can quantify the tradeoff between the above retirement planning goals and commonly used RIGs. These analytical techniques have been used extensively to construct investment portfolios for the accumulation phase, and it’s natural to extend use of these methods to the retirement income phase. Here are a few results from the SOA/SCL study:

- Retirees can increase the amount of their expected lifetime income by using savings to enable delaying the start of their Social Security benefits or buying an annuity, but in the process, they’ll reduce the amount of savings they can access throughout their lives.
- Retirees can increase the amount of income they might expect over their lifetime by increasing the amount they invest in stocks, but they’re more vulnerable to stock market crashes. Investing more in bonds will provide downside protection but will reduce their expected lifetime income.
- With systematic withdrawal programs, there’s a predicable tradeoff between the withdrawal rate, the expected lifetime income and the amount of accessible savings. Higher withdrawal rates produce higher expected lifetime income compared to lower withdrawal rates, but the higher rate has a greater chance of depleting assets, particularly for lengthy retirements.

Putting It All Together

Here’s one strategy that integrates these ideas using a portfolio approach:

- Cover basic living expenses with a floor of guaranteed lifetime income that retirees can’t outlive and that won’t decline when the stock market crashes. Such sources include Social Security, DB pensions and annuities.
- Cover discretionary living expenses from invested savings with a high allocation to stocks. Because basic living expenses are covered by guaranteed sources of income, retirees can better tolerate fluctuations due to stock market volatility in the portion of retirement income from invested assets, and they are less likely to panic and sell during down markets.
- Retirees can work just enough in their 60s and 70s to give them extra spending money, nurture social contacts and delay drawing down Social Security until age 70 and retirement savings as long as possible.
- People who have the time, skills and temperament might consider investing in real estate rental property to diversify their income. Alternatively, real estate investment trusts (REITs) can be an easier way to invest for income with real estate.
- People with low savings in 401(k) and IRAs but substantial home equity might explore reverse mortgages to boost their retirement income. Reverse mortgages can also be used to supplement income from SWPs in down markets, helping mitigate sequence of return risk.

In addition to the need to generate lifetime retirement income, retirees also face significant risks for medical and long-term care expenses. In theory, both of these risks can be addressed through insurance. In practice, most retirees are only insured for medical expenses through Medicare, Medigap and Medicare Advantage plans. In this case, retirees have turned a significant, unpredictable risk into a more manageable risk through the payment of monthly premiums. The amount of current and future medical insurance premiums needs to be considered when developing their retirement income strategy.

The threat of ruinous long-term care expenses represents the classic case for insurance: an event with the potential for significant financial costs that happens relatively infrequently. But most retirees don't buy long-term care insurance, preferring to self-insure for this risk. This can be one reason retirees express a preference for liquidity when deciding upon a retirement income strategy. The problem with this approach is that a significant long-term care event can overwhelm a retirement income strategy by quickly exhausting savings. In this case, there's no savings left to generate retirement income or pay for additional long-term care expenses. This can be one reason to leave home equity intact and not purchase a reverse mortgage to generate retirement income; home equity can serve as a financial resource to tap through a reverse mortgage or home equity loan if needed to pay for long-term care.

There's a lot to consider regarding the task of generating a reliable, retirement income that might need to last 20 to 30 years or more. Retirees, plan sponsors, financial institutions and advisers can use a diversified portfolio approach to generating retirement income that meets retirees' unique goals and circumstances, taking into consideration the features of various RIGs that are commonly available. This portfolio approach uses the same thinking and analytical techniques that have worked so well for the accumulation phase for the last few decades.

Steve Vernon, FSA, is a research scholar at the Stanford Center on Longevity. He can be reached at *svernon@stanford.edu*.