PROTECTION AS AN ASSET CLASS

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Annuities are insurance contracts with flexibility to provide a variety of protections to their owners. Often, we think of these protections in terms of the ability to provide lifetime income that helps retirees to manage the risk of outliving their assets. But the emergence of structured annuities provides another direction for protection by changing the relationship between downside market risks and upside growth potential for an accumulation-based portfolio. And when adding a living benefit to a structured annuity, lifetime spending protections remain available. This note discusses to how to frame a structured annuity, or the protections it provides, as an asset class for households to help manage market risks and the risk of outliving assets. These two complementary frames distinguish protection as an asset class. I summarize the key points of a paper[1] recently published through the Retirement Income Institute of the Alliance for Lifetime Income, which explores the role for a structured annuity (with a fixed index annuity used as the example) to improve financial outcomes for individuals both from a wealth accumulation perspective and a retirement income perspective.

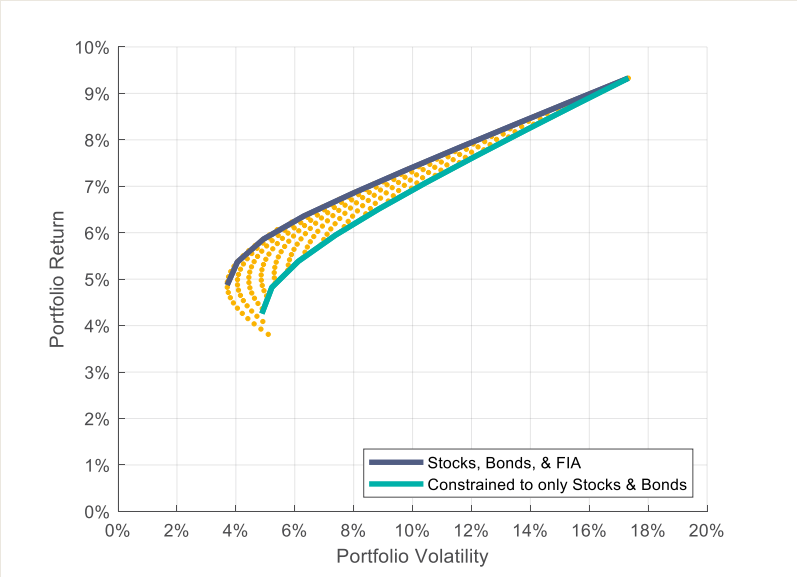
Specifically, starting with an investing framework, I show how adding a structured annuity expands the efficient frontier for investors through access to higher risk-adjusted returns, primarily as a fixed income replacement. Downside risks are present in both stocks and bonds, as evidenced in 2022 when stock and bond markets both experienced double-digit losses. Near-retirees who are depending on bond funds to maintain the value of their assets are vulnerable to a rise in interest rates. Fixed index annuities provide principal protection alongside the potential for higher average returns than bonds. I then add a lifetime income withdrawal benefit to the annuity and consider its role in expanding an efficient frontier for lifetime retirement income. Allocating to a protected lifetime income source as a fixed-income replacement improves the ability to meet more of a retiree's lifetime spending goals while also preserving assets for liquidity and legacy.

FIXED INDEX ANNUITY AS AN EXAMPLE OF A STRUCTURED ANNUITY

To demonstrate the value of protection as an asset class, I will construct a simple example for a structured annuity: a fixed index annuity (FIA) that protects principal and caps market upside by crediting interest linked to the price returns of large capitalization U.S. stocks as represented through the S&P 500. FIAs protect principal in the sense that 0% interest is credited even if the linked price index declines significantly in value. To obtain this protection, FIA owners should expect to receive only a portion of any positive gains experienced by the index. Various crediting methods are used in practice, and I consider a case in which the FIA caps the potential return as reflected through the change in the index price between contract anniversary dates.

1. https://www.protectedincome.org/wp-content/uploads/2023/06/RP-20_Pfau_final.pdf

Modern Portfolio Theory's Efficient Frontier



FIAs do *not* provide a way to get the returns from the stock market without accepting stock market risk. But they can provide a very interesting alternative to other fixed income assets held in a portfolio. We can see this first by simulating returns for a large-capitalization U.S. stock index (S&P 500), an aggregate U.S. bond index, and an FIA with credited interest linked to the price returns of the stock index.

In the simulations, stocks can be expected to provide the highest average total return (9.3%) and bonds the lowest (3.8%). The FIA's average returns fell between the two (6.1%). The FIA has a lower average return than stocks because it does not pay dividends and because of the cap on positive performance. However, its average return is well ahead of the bond option. As for the volatility of returns as measured through the standard deviation, bonds were the least volatile (5.1%), followed closely by the FIA (5.4%), and then by the much more volatile stocks (17.3%). But this does not tell the whole story as the FIA provides principal protection, or no risk of loss. Over a year, stocks experienced a 31.3% chance of loss, while bonds had a 23.2% risk of loss. Compared with bonds, the FIA offers higher expected returns with a comparable standard deviation and without any risk of loss.[2]

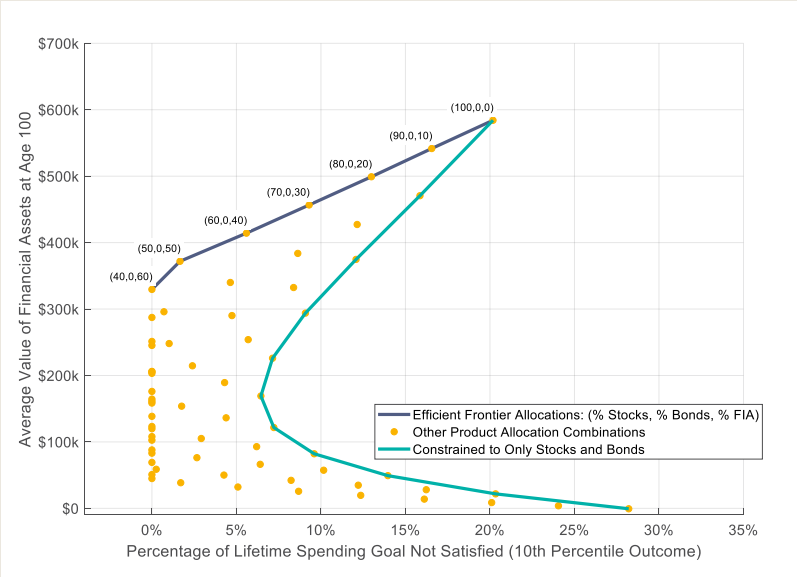
THE EFFICIENT FRONTIER FOR AN ACCUMULATION PORTFOLIO

While these investment metrics help to tell the story about the risk-return tradeoffs for different investment and annuity options, how should the underlying allocation between investments and FIAs be determined? Creating an efficient frontier for the risk-reward tradeoffs between these asset classes can inform this question. Exhibit 1 plots the portfolio returns and volatilities for different combinations of stocks, bonds, and the FIA.

The exhibit shows the portfolio arithmetic average return (the reward) on the vertical axis and the portfolio standard deviation (the risk) on the horizontal axis. Investors would like to move toward portfolios in the upper left-hand corner, all else being the same, as that direction represents portfolios with higher expected returns and less volatility. The dots reflect the different combinations for stocks, bonds, and the FIA. The purple curve that envelops them on the upper-left side is the efficient frontier. The cyan colored curve is the constrained efficient frontier if only stocks and bonds can be used. It is in an inferior position relative

2. We have not considered taxes, but structured annuities as provide tax deferral, which would provide an additional benefit compared to bonds held in a taxable account. By not including taxes, we implicitly assume that bonds are held in a qualified retirement account providing the same tax-deferral benefits.

Efficient Frontier for Retirement Income



to the yellow points, which indicates that the introduction of an FIA into the mix would help to improve outcomes relative to only using stocks and bonds. The FIA provides a vehicle to benefit from exposure to the equity premium in a manner that can be expected to outperform bonds, while limiting the overall risk to the owner. Except for the most conservative investors, the efficient frontier consists of stocks and FIAs with no role for bonds. FIAs replace bonds in portfolios on the efficient frontier.

THE EFFICIENT FRONTIER FOR RETIREMENT INCOME

Next we shift to solve more explicitly for the retirement income problem in which households must meet spending goals over an unknown retirement length. We can extend the efficient frontier to consider retirement income by focusing on trade-off between satisfying lifetime spending goals with a high probability of success and preserving financial assets for legacy and liquidity. For the retirement analysis, I add a guaranteed lifetime withdrawal benefit (GLWB) to the FIA and consider the case of a 65-year old single retiree seeking to retire immediately. She wishes to be able to fund spending through age 100. We position the analysis as based on having $100,000 of investable wealth at retirement.

Exhibit 2 provides this efficient frontier for retirement income. The yellow dots are the different allocations of stocks, bonds, and the FIA. Risk is measured as spending shortfall at the 10th percentile of simulations (poor market returns) and the reward is the average amount of financial assets remaining at age 100. More efficient outcomes are in the upper-left direction: less spending shortfall risk and greater average legacy. Again, the efficient frontier consists of stocks and FIAs. Specifically, the least risky allocation is 40% stocks and 60% FIAs. At retirement, 60% of assets are allocated to the FIA with GLWB and the remaining 40% is invested as 100% stocks. This allocation avoids shortfall at the 10th percentile and averages about $330,000 of legacy assets. As the initial allocation shifts from FIA to stocks along the frontier, shortfall risk increases along with higher average legacies, providing the retiree with different options between risk and return. The efficient frontier continues to the point with 100% stocks (no bonds or annuities), which provides the highest average legacy of about $580,000, but with the risk that about 20% of the spending goal cannot be met if markets perform poorly and assets deplete. The lifetime income protections from the annuity helps to support legacy relative to bonds because it covers a disproportionate amount of the spending goals and reduces the distribution pressures on the remaining investment assets, allowing them to focus on growth.

CONCLUSIONS

In the context of protection as an asset class, annuities offer two different avenues for contributing to the better financial outcomes for household financial planning. In an accumulation-based investing framework, structured annuities create the potential to produce a more attractive range of investment returns and can be treated as asset classes available for the asset allocation decision. For retirement income, the overlay of a lifetime income benefit on the annuity provides a more efficient means for meeting a lifetime spending goal while also preserving assets for legacy and liquidity. We have two valuable frameworks for thinking about protections provided through structured annuities as a viable asset class that serves as a fixed-income alternative in household portfolios.