

Actuarial Observations on Retiree Income Approaches

OCTOBER 2019

Key Points

- Lifetime income planning requires (a) sound assumptions for life expectancy and investment return, (b) consideration of possible risk mitigation relating to life expectancy and investment returns, and (c) a sound approach for determining available income.
- A steady income can be derived through one of several approaches for structured withdrawals from investment income, an annuity that provides a lifetime income, or some combination of the two.
- Good planning requires sound analysis. Two approaches are a “personal pension plan,” which approaches the issue with straightforward techniques similar to those for a pension plan, and a “Monte Carlo” simulation of many outcomes that profiles the risks and probabilities for success.



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Background

Actuarial observations can provide insight into the risks inherent in lifetime income planning for retirees and the methods used to possibly optimize retirees’ income. Retirement planning typically focuses on saving enough for retirement, but retirees—either on their own or with the help of financial advisers—could benefit from a plan for how to deploy those savings during retirement, including managing longevity risk, the risk that they may outlive their savings. While this risk has always existed, it’s even more important now, because many retirees are living longer and bear more responsibility for managing their retirement assets and income due to the shift from defined benefit pension plans to 401(k)-type arrangements. This issue brief provides information on some underlying principles that support retiree income approaches.

General Considerations

Below is a summary of some key considerations and tools employed with retiree income approaches:

- **Life expectancy assumptions:** Recognizing the variability in longevity is critical to determining a retirement plan that is effective for various life expectancies. Estimates can be made with the Actuaries Longevity Illustrator.¹

¹ Available at <http://www.longevityillustrator.org/>.

- **Longevity risk pooling:** Lifetime annuities can be used to transfer the risk that retirees might outlive their savings from individual retirees to insurers. The insurer's savings from annuitants who die early are used to support the benefits for annuitants who live a long life. In the process, everyone's income needs are met. This is the fundamental feature of insurance.
- **Investment return assumption:** The choice of a future return on assets will impact the amount of income that a retirement portfolio can be expected to generate, and how long that income will last. Small variations in the return assumption, as well as the sequence of the returns, can have significant impacts on the amount and duration of income.
- **Investment risk transfer:** Insurance or investment products that provide a guaranteed return can add some certainty, as well as reduce or eliminate downside risk.
- **Deterministic models:** These types of models are used to determine the amount to be spent annually from an investment portfolio based on a single scenario. These can simplify initial planning but need to be monitored closely and recalculated periodically.
- **Stochastic models:** These types of models are used to determine the probability that a chosen strategy will provide sufficient lifetime income at various points in the retirement horizon. They can be used to test how well various retirement planning strategies perform.

The assumptions used in retirement planning models can significantly impact results; consequently, it is advisable that assumptions be chosen carefully and be well understood.

Members of the Lifetime Income Risk Joint Committee, which authored this issue brief, include Noel Abkemeier, MAAA, FSA—*Co-chairperson*; Tonya Manning, MAAA, FSA, FCA, EA—*Co-chairperson*; Scott Allen, MAAA, FSA; Rachel Barnes MAAA, FSA, FCA, CERA, EA; Bruno Caron, MAAA, FSA; John Esch, MAAA, FSA; Debra Fickett-Wilbar, MAAA, FSA; Kenneth Ray Fisher, MAAA, ASA; Scott Japko, MAAA, FSA, FCA, EA; Chris Kinnison, MAAA, FSA; Grace Lattyak, MAAA, FSA, FCA, EA; Cynthia Levering, MAAA, ASA; Mark Shemtob, MAAA, FSA, FCA, EA, MSPA; Zorast Wadia, MAAA, FSA, FCA, EA; and Benjamin Yahr, MAAA, FSA.

Retirement Income Approaches and Actuarial Observations

Below are some approaches that generate retirement income. These are used separately or in combination with each other. For each, a brief description and actuarial observation have been included.

Withdrawals from investments. A structured use of funds from retirement savings introduces discipline to managing a retirement portfolio. These approaches are designed to provide a predictable income, but its duration is not guaranteed, and assets could be outlived.

- **“X% Rule”:** An initial withdrawal amount is determined as a percentage of assets (e.g., 4%, although the rate may vary because of investment environment, investment portfolio composition, and age), with the amount adjusted annually for inflation, that can be withdrawn regularly from a specified portfolio. This approach is based on an asset adequacy period moderately longer than the underlying life expectancy and assumed investment return assumptions based on the projected performance of the underlying portfolio. Another approach with similarities to this is using Internal Revenue Code (IRC) Required Minimum Distribution rules as a guide to annual withdrawals.
- **Bucketing:** With this method, withdrawals are made from investment portfolios in which “buckets” of assets are structured to mature to fund income needs for specified future time periods. Buckets can be structured to match longevity expectations and stochastic modeling can be employed to test investment return expectations for each bucket.
- **Laddering:** Withdrawals of interest and maturity values are made from a portfolio of fixed-income investments that are structured to generate periodic, often annual, guaranteed income. Straight bonds, zero-coupon bonds, and fixed-term annuities are used. The periodic payment period can be structured to reflect a conservatively long life span (possibly five years beyond one’s actual life expectancy). This approach eliminates investment risk because of the nature of the fixed payments.

Lifetime annuities. Annuities that last a lifetime transfer longevity risk from individuals to insurers.

- **Single Premium Immediate Annuity (SPIA).** These annuities provide guaranteed lifetime income, commencing immediately, for the life of annuitant(s) through longevity risk pooling and transfer of investment risk for the allocated assets. (Cost-of-living adjustments can be added to address inflation risk.)
- **Deferred Income Annuity or Qualifying Longevity Annuity Contract (DIA/QLAC).** These annuities provide guaranteed lifetime income payments that begin a specified number of years after the premium payment is made, while also transferring investment risk to the insurer. DIAs/QLACs insure the risk of living beyond expectations, particularly if income begins around the point of life expectancy. Note QLACs are not subject to the Internal Revenue Service age 70½ Required Minimum Distribution rules.
- **Variable Annuity (VA) or Fixed Indexed Annuity (FIA) with Guaranteed Lifetime Withdrawal Benefit (GLWB) or Guaranteed Minimum Income Benefit (GMIB).** These are products sold by insurance companies that combine both an investment element and an insurance element. During the initial phase, the amount of the annuity accumulation increases (or decreases) with actual investment results. During the next phase, the value of the investments can be converted to a lifetime income. These products can also be sold with a rider (optional feature) at an additional cost that guarantees that a minimum amount of annual benefits will be payable for the life of the annuity owner (guaranteed payments with GMIB or guaranteed withdrawal amounts with GLWB) regardless of investment performance or longevity of the individual. To take advantage of this rider, there could be restrictions on the investment options.

Analyzing Outcomes

The approaches outlined above are methods of creating retirement income. In addition, other factors can significantly impact sustainable retirement income and it is recommended they be considered, such as Social Security (significantly affected by claiming age), lifetime income from a pension plan, optional lifetime income payouts that might be available from an employer 401(k), and taxation of benefits. The analytical methods described below are actuarial tools used to help derive alternative strategies to creating a spending budget from the various income sources.

- **Actuarial or “personal pension plan”:** In this method, a determination is made of the sustainable income from all sources that could be supported during a conservatively long retirement period. It is based on pension-like deterministic calculations that equate the present value of income sources and a smooth budget. Periodic re-evaluations and potential adjustments are often made.
- **Lifetime income “Monte Carlo” simulations:** This approach stochastically tests the probability of a certain level of annual spending lasting a lifetime based on various investment strategies. It can be applied to a variety of income sources and spending plans. Periodic re-evaluations are often made.

Summary

A consideration of alternative methods and products available can be key to the creation of a sustainable retirement income. It is important to better understand the risks associated with developing a lifetime income strategy. Risks can be measured, mitigated, or in some cases eliminated by applying actuarial methods and solutions.

The Lifetime Income Risk Joint Committee of the American Academy of Actuaries has prepared other materials under its Lifetime Income Initiative, which can be found at <http://www.actuary.org/content/lifetime-income-initiative>.

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