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A New Way Forward In Retirement

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Sustaining wealth in retirement

To date, most attempts at managing wealth in retirement fall short, often focusing on just one aspect of the longevity puzzle. In this article, we explain the shortcomings of the current solutions to generating a reliable retirement income, and present an alternative to more efficiently manage retirement wealth.

Retirement is a major problem facing society. Few retirees have sufficient (if any) defined benefit pension benefits. Moreover, many retirees and soon-to-be retirees have simply not saved enough. As life expectancy continues to rise, retirees are demanding that their savings sustain them longer than ever before.

Current solutions

Currently the market offers two types of solutions to retirees:

- **Insured payout annuities –** Retirees can purchase an annuity from an insurer and receive guaranteed lifetime income. While the concept of guaranteed lifetime income is appealing, this option has been significantly under-utilized for a variety of reasons. Given the insurer's systematic investment and longevity risk, it needs to layer on risk margins and has a cost of capital that is passed on to the consumer. As a result, most retirees consider insured annuities as expensive. This is further exacerbated within the context of a structurally low interest rate environment. Further, most retirees seem to desire the ability to participate in the markets and retain investment flexibility in order to account for the uncertainty that accompanies a lengthy retirement.
- **Income drawdown solutions –** Retirees simply live off the funds they've managed to accumulate throughout their working lives – the 4% rule is a highly promoted rule of thumb, where the retiree lives off of 4% of their accumulated funds each year. While the retiree retains the desired investment flexibility, their ability to manage longevity risk is limited. There are two flaws with this approach.
  - The retiree is managing their personal longevity risk themselves. In an attempt to protect themselves in their elderly years, the 4% allotment is a fairly small amount, leaving the retiree with a much lower standard of living in order to fund their later years.
  - Further, this approach doesn't insulate the retiree from longevity risk. While managing the drawdown amount helps retirees retain funds past life expectancy, it does not insulate them from living more than a few years past life expectancy. This risk is further exaggerated by the volatility in the investment returns that these assets are invested in. A poor start with low yields or losses just after retirement can have a devastating impact on the risk the retiree will outlive their funds.

Both solutions described above are faced with a risk tolerance paradox, which reflects the cost that accompanies retirement certainty. In both the case of the insured annuity and income drawdown solution, the paradox results in a significantly lower

KEY TAKEAWAYS

- Combining pooling techniques with a sophisticated investment risk management approach provides opportunities to significantly increase retirement income through the combination of longevity protection with greater risk adjusted returns on retiree assets.
- Increasing life expectancy across the developed world has resulted in greater emphasis for longevity solutions in virtually all modern pension systems.
- The cost of guarantees and demise of defined benefit pension systems has led to the need for innovative approaches in the attempt to solve these issues.
- Longevity risk manifests itself across multiple dimensions and should be considered alongside the investment returns on the underlying assets used to generate retirement income.
- The Milliman Retirement Enhancement Trust successfully navigates these issues and offers financial advisers and pension funds an innovative and cost-effective retirement solution for their clients.

rate of income to the retiree and consequently, a lower standard of living in order to ensure that the retiree's assets survive the journey.

Solving this paradox and delivering an improved standard of living in retirement requires a solution that provides:

- the ability to earn higher rates of return on invested assets, without significantly higher levels of risk through the use of strategies that manage volatility and provide some degree of principal protection, as well as
- the use of pooling in order to transfer longevity benefits to those retirees fortunate enough to experience a lengthy retirement.

While addressing either of theses issues in isolation can offer potential improvements, we believe that a holistic longevity strategy that solves both of these problems has the potential to provide an overall improved solution and significantly higher cumulative income levels over retirement.

In another article titled "The 6% rule: Determining portfolio withdrawal rates using stochastic analysis and managed risk equities", our colleagues demonstrate how using volatility managed funds with principal protection can improve the odds of the retiree not outliving their accumulated funds. By limiting the downside, there are fewer scenarios where retirees need to sell assets in significant loss making positions. It is these very scenarios that result in situations where retirees end up running out of funds early. This clearly demonstrates the need for retirees to maintain exposure to growth assets, but with some form of protection from the sequencing risk that these scenarios represent. As a result the authors propose the 4% rule can be increased substantially to 6% assuming retirees are invested in strategies that actively manage sequencing risk.

While active risk management strategies are a powerful tool to assist in managing sequencing risk, it is only half of the battle when it comes to managing one's longevity risk. Without the pooling benefits of longevity protection, retirees still need to limit their withdrawals because of the fear of outliving their money.

However, despite this, the evidence globally is that retirees are not selecting traditional insured annuities. As we suggested above, this is partially due to the fact that the loadings built into such products are considered too expensive, whilst the rates of income that are guaranteed are low due to the nature of the assets these products are invested in.

In our view, the key to a well-rounded retirement solution contains the following characteristics:

- low cost,
- investment flexibility, including an option for market participation with some principal protection, and
- enhanced income through pooled longevity benefits.

We believe solutions that meet all of these criteria are in sight for current and future retirees. In fact, Milliman has designed the Retirement Enhancement Trust™, a US patent pending retirement solution, which incorporates all of these key characteristics. As such, the Retirement Enhancement Trust is novel, with many advantages over solutions currently being marketed by other firms. We are working with clients on how to offer a tailored Retirement Enhancement Trust solution to their members who are in or approaching retirement. More details of this solution will be made available upon request.

When combining all of these characteristics, the results are profound:

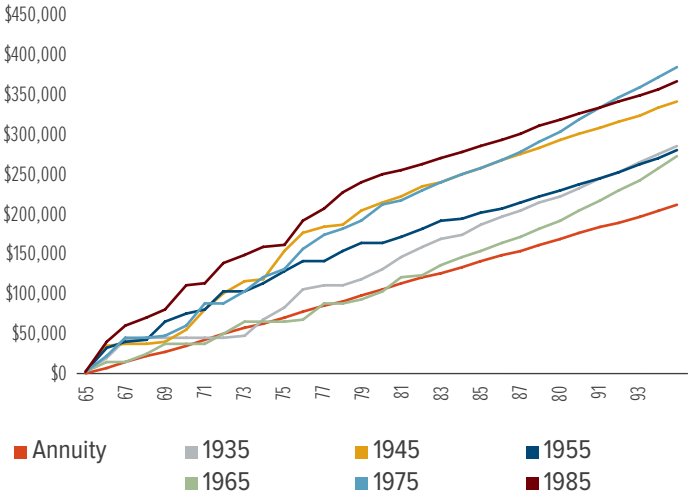
- Instead of withdrawing only 4%, pooling the longevity risk allows for much more retirement income. For example, assuming a long term investment return of 4%[1] before administrative expenses, a 65 year old male can have a retirement income of approximately 6.7% of his initial balance. This is before any potential upside from investing in the market which offers the benefits of participating in market growth.
- The expected regular withdrawal amount, before the upside potential from market participation, is also considerably higher than insured payout annuity benefits. From our testing, this solution produces significantly higher expected payments, albeit without the guarantee, than the benefits available from insured annuities. Given this solution is not an insurance product, payments are not weighed down by insurer risk margins and their cost of capital.
- Further, this comparison is before reflecting any potential upside from investing in the market. As can be seen from the graph below, which demonstrates returns based on various historical periods, retiree payments can be profoundly higher than a payout annuity [2]. We would argue that this is one of the main reasons a large portion of retirees do not choose to buy insured payout annuities.

[1] The investment rate chosen is consistent with long term corporate bond rates at the time of this writing.
[2] Payout annuity chosen based on highest in range of annuity quotes surveyed from companies with rating of at least A+ at the time of our testing.

Assume a male 65 years old, starting with $100,000 at retirement, lives 30 years. We examined historical investment periods starting in 1928 (i.e., from 1928 to 1957) to 1985 (i.e., from 1985 to 2014)[3]. The following chart compares a payout annuity benefit stream to cumulative payments that a retiree would receive as a participant in the Retirement Enhancement Trust. Each payout line takes an initial portfolio of $100,000 and invests it in S&P 500, using the Milliman Managed Risk Strategy. Payouts are calculated using the Retirement Enhancement Trust methodology over a period of 30 years. This model assumes that future returns are the same as historical S&P 500 returns (starting in the years shown) reflecting Milliman's approach to volatility management.

While historical performance is not a guarantee of future results, we hypothesize that past market performance is partly driving retirees' decision process for not selecting insured annuities. We note that the selected period includes various significant market movements, including Bull markets, the Great Depression and the Great Recession. In all but two of these investment scenarios, our retirement solution would provide a higher cumulative payout than an insured payout annuity. In fact most scenarios perform significantly better and the worst scenario only performed slightly worse. The table below summarizes the result of these scenarios.

Cumulative Payments Compared to an Annuity – Based on Historical Equity Market Returns



THESE RESULTS ARE BASED ON SIMULATED OR HYPOTHETICAL PERFORMANCE RESULTS THAT HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE THE RESULTS SHOWN IN AN ACTUAL PERFORMANCE RECORD, THESE RESULTS DO NOT REPRESENT ACTUAL TRADING. ALSO, BECAUSE THESE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THESE RESULTS MAY HAVE UNDER-OR OVER-COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED OR HYPOTHETICAL TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THESE BEING SHOWN.

The above chart was calculated based on historical data, including fund returns, index returns, and interest rates. If a fund does not have returns that go back to the inception of the backtest, the fund returns are backfilled using returns for an appropriate benchmark. We assume that all dividends are reinvested. Fees are added to the fund returns when specified. All backtests are based on daily data. All backtests assume that trades can only occur once a day, at end of day prices. We assume that the hypothetical trades in the backtest can be executed at historical prices without affecting market prices. Unless otherwise specified, all performance results show performance for a buy and hold investor. We assume that all cash held in the fund earns interest based on the shortest interest rate input into the model. The number of futures contracts traded each day in the backtest is based solely on the output of the algorithm and the pre-specified trading thresholds. The payoffs for each futures contract is calculated based on index returns, interest rates, and the futures multipliers. The model assumes that cash is needed to support the margin for the futures contracts, and the initial margin amount for each futures contract is fixed over the time period.

	Average Annual Payments As a Percentage of Initial Amount	Percentage of Payout Annuity
min	6.6%	94%
5%	7.6%	108%
10%	8.7%	123%
25%	9.2%	130%
median	10.5%	150%
mean	10.4%	148%
75%	11.7%	167%
90%	12.4%	176%
95%	12.7%	181%
max	12.8%	182%

In addition to the comparison with insured payout annuities, our solution can be compared to the 4% rule of thumb income drawdown solution. Our average tested income, based on historic performance of the S&P 500 and Milliman's approach to volatility management, was 10.5%, demonstrating the potential for our solution to greatly improve the standard of living for retirees. While volatility remains, and there are no guarantees, our solution allowed for much more income in the tested scenarios, which calls into question the future applicability of the old 4% rule of thumb.

We think everyone can agree that navigating retirement is complicated. There are many trade-offs for retirees to consider. The current solutions available in the market have their place depending on the risk tolerance and needs of the retirees. However, something has been missing. Milliman's new retirement solution discussed in this article takes the best of what existing solutions offer retirees and puts it into one package. We believe this approach will be a welcome additional solution to help navigate retirement.

[3] The historical periods selected for the graph started in the middle of each decade where historical results are available for a full 30 year period. The next table demonstrates the range of results from all historical periods tested.

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